Title 296 WAC
LABOR AND INDUSTRIES, DEPARTMENT OF

Chapters

DISPOSITION OF CHAPTERS FORMERLY CODIFIED IN THIS TITLE

Chapter 296-12
PRACTICE AND PROCEDURE— BOARD OF INDUSTRIAL INSURANCE APPEALS

[Rules filed 10/29/69, 10/29/65, 6/12/63, 3/23/60.] Now codified in Title 263 WAC.

Chapter 296-18
INDUSTRIAL INSURANCE AND MEDICAL AID CLASSIFICATION MANUAL

Reviser's note: The classification of occupations was enacted by the legislature as section 1, chapter 247, Laws of 1947. They were revised by the director from time to time under the authority of RCW 51.12.030, 51.12.040, and 51.16.100. As so revised, they were reenacted by the legislature as chapter 51.20 RCW, which was part of chapter 23, Laws of 1961, which reenacted the entire industrial insurance law as Title 51 RCW. The classification as originally published in the WAC conforms to the 1961 statute. The effective date of chapter 23, Laws of 1961 was February 14, 1961.

Chapter 51.20 RCW and its parallels in chapter 231, Laws of 1961, have subsequently been repealed by section 39, chapter 93, Laws of 1972 ex. sess.

296-18-010, 296-18-020, 296-18-050, 296-18-060, 296-18-070, 296-18-080, 296-18-090, 296-18-100, 296-18-110, 296-18-130, 296-18-140, 296-18-150, 296-18-160, 296-18-170, 296-18-180, 296-18-210, 296-18-220, 296-18-240, 296-18-290, 296-18-310, 296-18-330, 296-18-350, 296-18-370, 296-18-380, 296-18-390, 296-18-400, 296-18-410, 296-18-420, 296-18-430, 296-18-440, 296-18-450, 296-18-460, 296-18-470, 296-18-480, 296-18-490, 296-18-500, 296-18-610, 296-18-620, 296-18-630, 296-18-640, 296-18-650, 296-18-660. [Order 71-14, §§ 296-18-010 through 296-18-660, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

296-18-340 [Order 70-11, § 296-18-340, filed 11/30/70.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-18-600 [See reviser's note for history.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-18-670 [Order 72-12, § 296-18-670, filed 7/18/72; Order 71-14, § 296-18-670, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

296-18-680 [Order 72-12, § 296-18-680, filed 7/18/72; Order 71-14, § 296-18-680, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

296-18-690 [Order 71-14, § 296-18-690, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

Reviser's note: Many of the above section numbers were reused by the department when it adopted rules on rehabilitation review, a new subject matter, by Order 82-40, filed 11/30/82. This order and subsequent orders have been codified as chapter 296-18A WAC.

Chapter 296-19
CLASSIFICATION OF STATE EMPLOYEES

296-19-010 General order. [Rule, filed 4/10/62; Rules, filed 12/2/60 and 3/6/61.] Repealed by 84-06-018 (Order 84-3), filed 2/29/84. Statutory Authority: RCW 51.04.020(1).

Chapter 296-21A
MEDICAL FEES

296-21A-010 General information and instructions. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-010, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-011 Footnotes. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-011, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-013 Special services and reports. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-013, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-014 Unlisted service or procedure. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-014, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-01401 Special report. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-01401, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-035 Independent medical examinations. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-035, filed 12/1/92, effective 1/1/93.] Repealed

by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-037 Examination reports. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-037, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-040 Independent medical examinations examiner. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-040, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-045 Independent medical examinations two or more examiners. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-045, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-046 Immunization injections. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-046, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-047 Therapeutic or diagnostic injections. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-047, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-050 Psychiatric services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-050, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-0501 Biofeedback rules. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-0501, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-0502 Biofeedback. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-0502, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-057 Monitoring services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-057, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-062 Eye. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-062, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-064 Ear. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-064, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-066 Cardiovascular. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-066, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-070 Pulmonary. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-070, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-075 Allergy and clinical immunology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-075, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-080 Neurology and neuromuscular. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-080, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-086 Chemotherapy administration. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-086, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-090 Special dermatological procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-090, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-095 Physical medicine. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-095, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-125 Anesthesia. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-125, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-128 Special services and billing procedures—Anesthesia. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-128, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21A-130 Calculation of total anesthesia values. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21A-130, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

Chapter 296-22
SURGICAL FEES

296-22-010 General information and instructions. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-010, filed 12/1/92, effective 1/1/93; 91-17-038, § 296-22-010, filed 8/16/91, effective 9/16/91; 89-17-039 (Order 89-09), § 296-22-010, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-22-010, filed 1/8/87; 86-20-074 (Order 86-36), § 296-22-010, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-22-010, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-010, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-010, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-010, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-010, filed 1/30/74; Order 70-12, § 296-22-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-22-010, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-015, 296-22-045, 296-22-046, 296-22-047, 296-22-048, 296-22-049, 296-22-050, 296-22-055, 296-22-056, 296-22-057, 296-22-058, 296-22-059, 296-22-060, 296-22-065, 296-22-070, 296-22-075, 296-22-076, 296-22-077, 296-22-078, 296-22-085, 296-22-086, 296-22-090, 296-22-101, 296-22-102, 296-22-117, 296-22-121, 296-22-126, 296-22-127, 296-22-128, 296-22-256, 296-22-320, 296-22-335, 296-22-366, 296-22-376, 296-22-380, and 296-22-400. [Order 68-7, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-22-016 Footnotes. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-016, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-016, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-017 Unlisted service or procedure. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-22-017, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-017, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-017, filed

8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-017, filed 12/3/80, effective 3/1/81; Order 76-34, § 296-22-017, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-01701 Special report. [Order 76-34, § 296-22-01701, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-020 Skin, subcutaneous and areolar tissues. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-020, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-020, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-020, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-020, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-020, filed 1/30/74; Order 68-7, § 296-22-020, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-021 Excision—Debridement. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-021, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-021, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-021, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-021, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-021, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-021, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-021, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-021, filed 1/30/74; Order 68-7, § 296-22-021, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-022 Introduction. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-022, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-022, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-022, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-022, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-022, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-022, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-022, filed 1/30/74; Order 68-7, § 296-22-022, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-023 Repair. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-023, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-023, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-023, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-023, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-023, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-023, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-023, filed 1/30/74; Order 68-7, § 296-22-023, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-024 Repair—Complex. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-024, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-024, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-21-024, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-024, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-024, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-024, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-024, filed 1/30/74; Order 68-7, § 296-22-024, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-025 Free skin grafts. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-025, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-025, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-025, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-025, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-025, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-025, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-025, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-025, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-025, filed 1/30/74; Order 68-7, § 296-22-025, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-026 Burns, local treatment. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-026, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-026, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-026, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-026, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-026, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-026, filed 1/30/74; Order 68-7, § 296-22-026, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-027 Destruction. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-027, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-027, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-027, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-027, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-027, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-027, filed 1/30/74; Order 68-7, § 296-22-027, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-030 Breast. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-030, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-030, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-030, filed 8/10/89, effective 9/10/89; 83-16-066 (Order 83-23), § 296-22-030, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-030, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-030, filed 1/30/74; Order 68-7, § 296-22-030, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-031 Breast. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-031, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-031, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-031, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-031, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-031, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-031, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-031, filed 1/30/74; Order 68-7, § 296-22-031, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-035 Musculoskeletal system. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-035, filed 12/1/92, effective 1/1/93; 89-17-039 (Order 89-09), § 296-22-035, filed 8/10/89, effective 9/10/89. Statutory

Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-035, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-035, filed 1/30/74; Order 68-7, § 296-22-035, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-036 General. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-036, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-036, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-22-036, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-036, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-036, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-036, filed 1/30/74; Order 68-7, § 296-22-036, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-037 Excision. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-037, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-037, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-037, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-037, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-037, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-037, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-037, filed 1/30/74; Order 68-7, § 296-22-037, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-038 Introduction or removal. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-038, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-038, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-038, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-038, filed 7/23/87; 83-16-066 (Order 83-23), § 296-22-038, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-038, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-038, filed 1/30/74; Order 68-7, § 296-22-038, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-039 Reimplantation. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-039, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-039, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-22-039, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-039, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-039, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-039, filed 1/30/74; Order 68-7, § 296-22-039, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-040 Grafts (or implants). [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-040, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-040, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-040, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-040, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-040, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-040, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-040, filed 1/30/74; Order 68-7, § 296-22-040, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-042 Head. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-042, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-042, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-042, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-042, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-042, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-042, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-042, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-042, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-042, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-051 Neck (soft tissues) and thorax. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-051, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-051, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-051, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-051, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-051, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-051, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-051, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-052 Back and flank. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-052, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-052, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-052, filed 8/10/89, effective 9/10/89.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-053 Spine (vertebral column). [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-053, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-053, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-053, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-053, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-053, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-053, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-053, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-053, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-053, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-061 Abdomen. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-061, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-061, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-061, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-061, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-061, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-061, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-061, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-061, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-063 Shoulder. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-063, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-063, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-063, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-063, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-063, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-063, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-063, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25),

§ 296-22-063, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-063, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-067 Humerus (upper arm) and elbow. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-067, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-067, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-067, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-067, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-067, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-067, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-067, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-067, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-067, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-071 Forearm and wrist. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-071, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-071, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-071, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-071, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-071, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-071, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-071, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-071, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-071, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-073 Hand and fingers. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-073, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-073, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-073, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-073, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-073, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-073, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-073, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-073, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-073, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-079 Pelvis and hip joint. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-079, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-079, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-079, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-079, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-079, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-079, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-079, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-082 Femur (thigh region) and knee joint. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-082, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-082, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-082, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-082, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-082, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-082, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-082, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-082, filed 12/3/80, effective 3/1/81; Order 76-34, § 296-22-082, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-22-082, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-22-082, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-087 Leg (tibia and fibula) and ankle joint. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-087, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-087, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-087, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-087, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-087, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-087, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-087, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-087, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-091 Foot. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-091, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-091, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-091, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-091, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-091, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-091, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-091, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-091, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-091, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-095 Application of casts and strapping. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-095, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-095, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-095, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-095, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-095, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-095, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-097 Arthroscopy. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-097, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-097, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-097, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-097, filed 7/23/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-100 Respiratory system. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-100, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-100, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-100, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-100, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-100, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-100, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-100, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-100, filed 1/30/74; Order 68-7, § 296-22-100, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-105 Accessory sinuses. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-105, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-105, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), §

296-22-105, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-105, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-105, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-105, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-105, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-105, filed 1/30/74; Order 68-7, § 296-22-105, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-110 Larynx. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-110, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-110, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-110, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-110, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-110, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-110, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-110, filed 1/30/74; Order 68-7, § 296-22-110, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-115 Trachea and bronchi. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-115, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-115, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-115, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-115, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-115, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-115, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-115, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-115, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-115, filed 1/30/74; Order 68-7, § 296-22-115, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-116 Lungs and pleura. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-116, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-116, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-116, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-116, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-116, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-116, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-116, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-116, filed 1/30/74; Order 68-7, § 296-22-116, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-120 Heart and pericardium. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-120, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-120, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-120, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-120, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-120, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-120, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-120, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-120, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-120, filed 1/30/74; Order 68-7, § 296-22-120, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-125 Arteries and veins. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-125, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-125, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-125, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-125, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-125, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-125, filed 1/30/74; Order 68-7, § 296-22-125, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-130 Spleen. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-130, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-130, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-130, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-130, filed 7/23/87; 83-16-066 (Order 83-23), § 296-22-130, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-130, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-130, filed 1/30/74; Order 68-7, § 296-22-130, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-132 Bone marrow transplantation services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-132, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-132, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-132, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-135 Lymph nodes and lymphatic channels. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-135, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-135, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-135, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-135, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-135, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-135, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-135, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-135, filed 1/30/74; Order 68-7, § 296-22-135, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-140 Mediastinum. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-140, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-140, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-140, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-140, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-140, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-140, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-140, filed 1/30/74; Order 68-7, § 296-22-140, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-141 Diaphragm. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-141, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-141, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-141, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-141, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-141, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-141,

filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-141, filed 1/30/74. Formerly WAC 296-22-070 (part).] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-145 Mouth. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-22-145, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-145, filed 2/28/86, effective 4/1/86; Order 74-7, § 296-22-145, filed 1/30/74; Order 68-7, § 296-22-145, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-146 Lips. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-146, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-146, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-146, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-146, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-146, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-146, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-146, filed 1/30/74. Formerly WAC 296-22-145 (part).] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-147 Vestibule of mouth. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-147, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-147, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-147, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-147, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-147, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-147, filed 12/3/80, effective 3/1/81.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-150 Tongue, floor of mouth. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-150, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-150, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-22-150, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-150, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-150, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-150, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-150, filed 1/30/74; Order 68-7, § 296-22-150, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-155 Teeth and gums. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-155, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-155, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-155, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-155, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-155, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-155, filed 1/30/74; Order 68-7, § 296-22-155, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-160 Palate, uvula. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-160, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-160, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-160, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-160, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-160, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-160, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-160, filed 1/30/74; Order 68-7, § 296-22-160, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-165 Salivary glands and ducts. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-165, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-165, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-22-165, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-165, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-165, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-165, filed 1/30/74; Order 68-7, § 296-22-165, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-170 Pharynx, adenoids and tonsils. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-170, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-170, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-170, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-170, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-170, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-170, filed 1/30/74; Order 68-7, § 296-22-170, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-180 Esophagus. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-180, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-180, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-180, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-180, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-180, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-180, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-180, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-180, filed 1/30/74; Order 68-7, § 296-22-180, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-190 Stomach. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-190, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-190, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-190, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-190, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-190, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-190, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-190, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-190, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-190, filed 1/30/74; Order 68-7, § 296-22-190, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-195 Intestines (except rectum). [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-195, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-195, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-195, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-195, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-195, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-195, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-195, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-195, filed 1/30/74; Order 68-7, § 296-22-195, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-200 Meckel's diverticulum and the mesentery. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-200, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-200, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-200, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-200, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-200, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-200, filed 1/30/74; Order 68-7, § 296-22-200, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-205 Appendix. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-205, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-205, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-205, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-205, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-205, filed 1/30/74; Order 68-7, § 296-22-205, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-210 Rectum. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-210, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-210, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-210, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-210, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-210, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-210, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-210, filed 1/30/74; Order 68-7, § 296-22-210, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-215 Anus. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-215, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-215, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-215, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-215, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-215, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-215, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-215, filed 1/30/74; Order 68-7, § 296-22-215, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-220 Liver. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-220, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-220, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-220, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-220, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-220, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-220, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-220, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-220, filed 1/30/74; Order 68-7, § 296-22-220, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-225 Biliary tract. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-225, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-225, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-225, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-225, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-225, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-225, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-225, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-225, filed 1/30/74; Order 68-7, § 296-22-225, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-230 Pancreas. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-230, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-230, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-230, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-230, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-230, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-230, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-230, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-230, filed 1/30/74; Order 68-7, § 296-22-230, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-235 Abdomen, peritoneum and omentum. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-235, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-235, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-235, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-235, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-235, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-235, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-235, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-235, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-235, filed 1/30/74; Order 68-7, § 296-22-235, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-245 Kidney. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-245, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-245, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-245, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-245, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-245, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-245, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-245, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-245, filed 1/30/74; Order 68-7, § 296-22-245, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-250 Ureter. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-250, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-250, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-250, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-250, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-250, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-250, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-250, filed 1/30/74; Order 68-7, § 296-22-250, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-255 Bladder. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-255, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-255, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-255, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-255, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-255, filed 2/28/86, effective 4/1/86; 83-16-066

(Order 83-23), § 296-22-255, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-255, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-255, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-255, filed 1/30/74; Order 68-7, § 296-22-255, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-260 Urethra. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-260, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-260, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-260, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-260, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-260, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-260, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-260, filed 1/30/74; Order 68-7, § 296-22-260, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-265 Penis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-265, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-265, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-265, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-265, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-265, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-265, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-265 filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-265, filed 1/30/74; Order 68-7, § 296-22-265, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-270 Testis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-270, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-270, filed 3/8/91, effective 5/1/91; 83-16-066 (Order 83-23), § 296-22-270, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-270, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-270, filed 1/30/74; Order 68-7, § 296-22-270, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-275 Epididymis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-275, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-275, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-275, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-275, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-275, filed 1/30/74; Order 68-7, § 296-22-275, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-280 Tunica vaginalis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-280, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-280, filed 3/8/91, effective 5/1/91. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-280, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-280, filed 1/30/74; Order 68-7, § 296-22-280, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-285 Scrotum. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-285, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-285, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-285, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-285, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-285, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-285 filed 1/30/74; Order 68-7, § 296-22-285, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-290 Vas deferens. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-290, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-290, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-290, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-290, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-290, filed 1/30/74; Order 68-7, § 296-22-290, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-295 Spermatic cord. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-295, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-295, filed 3/8/91, effective 5/1/91. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-295, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-295, filed 1/30/74; Order 68-7, § 296-22-295, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-300 Seminal vesicles. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-300, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-300, filed 3/8/91, effective 5/1/91. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-300, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-300, filed 1/30/74; Order 68-7, § 296-22-300, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-305 Prostate. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-305, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-305, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-305, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-305, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-305, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-305, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-305, filed 1/30/74; Order 68-7, § 296-22-305, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-306 Intersex surgery. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-22-306, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(2), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-306, filed 12/3/80, effective 3/1/81.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-307 Perineum. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-307, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-307, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-307, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-307, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-307, filed 1/30/74. Formerly WAC 296-22-335.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-310 Vulva and introitus. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-310, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-310, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-310, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-310, filed 7/23/87; 83-16-066 (Order 83-23), § 296-22-310, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-310, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-310, filed 1/30/74; Order 68-7, § 296-22-310, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-315 Vagina. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-315, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-315, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-315, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-315, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-315, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-315, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-315, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-315, filed 1/30/74; Order 68-7, § 296-22-315, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-325 Cervix uteri. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-325, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-325, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-325, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-325, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-325, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-325, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-325, filed 1/30/74; Order 68-7, § 296-22-325, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-330 Corpus uteri. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-330, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-330, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-330, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-330, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-330, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-330, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-330, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-330, filed 1/30/74; Order 68-7, § 296-22-330, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-333 Oviduct. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-333, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-333, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-333, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-333, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-333, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-333, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-333, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-333, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-337 Ovary. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-337, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-337, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-337, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-337, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-337, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-337, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-337, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-337, filed 1/30/74. Formerly WAC 296-22-320.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-340 Maternity care and delivery. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-340, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-340, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-340, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-340, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-340, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-340, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-340, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-340, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-340, filed 1/30/74; Order 68-7, § 296-22-340, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-350 Thyroid gland. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-350, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-350, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-350, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-350, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-350, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-350, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-350, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-350, filed 1/30/74; Order 68-7, § 296-22-350, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-355 Parathyroid, thymus, adrenal glands and carotid body. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-355, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-355, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-355, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-355, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-355, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-355, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-355, filed 1/30/74; Order 68-7, § 296-22-355, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-365 Skull, meninges, and brain. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-365, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-365, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-365, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-365, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-365, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-365, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-365, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-365, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-365, filed 1/30/74; Order 68-7, § 296-22-365, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-370 Spine and spinal cord. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-370,

filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-370, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-370, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-370, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-370, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-370, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-370, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-370, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-370, filed 1/30/74; Order 68-7, § 296-22-370, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-375 Extracranial nerves, peripheral nerves and autonomic nervous system. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-375, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-375, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-375, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-375, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-375, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-375, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-375, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-375, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-375, filed 1/30/74; Order 68-7, § 296-22-375, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-405 Eyeball. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-405, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-405, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-405, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-405, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-405, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-405, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-405, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-405, filed 1/30/74; Order 68-7, § 296-22-405, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-410 Anterior segment—Cornea. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-410, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-410, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-410, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-410, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-410, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-410, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-410, filed 1/30/74; Order 68-7, § 296-22-410, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-413 Anterior segment—Anterior chamber. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-413, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-413, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-413, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-413, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-413, filed 1/30/74. Formerly WAC 296-22-405 (part) and 296-22-415.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-415 Anterior segment—Anterior sclera. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-415, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-415, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-415, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-415, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-415, filed 1/30/74; Order 68-7, § 296-22-415, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-420 Anterior segment—Iris, ciliary body. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-420, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-420, filed 3/8/91, effective 5/1/91. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-420, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-420, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-420, filed 1/30/74; Order 68-7, § 296-22-420, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-425 Anterior segment—Lens. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-425, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-425, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-425, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-425, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-425, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-425, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-425, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-425, filed 1/30/74; Order 68-7, § 296-22-425, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-427 Posterior segment—Vitreous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-427, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-427, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-427, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-427, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-427, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-427, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-427, filed 1/30/74. Formerly WAC 296-22-425.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-430 Posterior segment—Retinal detachment. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-430, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-430, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-430, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-430, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-430, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-430, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-430, filed 1/30/74; Order 68-7, § 296-22-430, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-435 Ocular adnexa—Extraocular muscles. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-435, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-435, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-435, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-435, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-435, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-435, filed 1/30/74; Order 68-7, § 296-22-435, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed

8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-440 Ocular adnexa—Orbit. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-440, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-440, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-440, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-440, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-440, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-440, filed 1/30/74; Order 68-7, § 296-22-440, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-445 Ocular adnexa—Eyelids. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-445, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-445, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-445, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-445, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-445, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-445, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-445, filed 1/30/74; Order 68-7, § 296-22-445, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-450 Ocular adnexa—Conjunctiva. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-450, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-450, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-22-450, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-450, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-450, filed 1/30/74; Order 68-7, § 296-22-450, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-455 Ocular adnexa—Lacrimal system. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-455, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-455, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-455, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-455, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-455, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-455, filed 1/30/74; Order 68-7, § 296-22-455, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-465 External ear. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-465, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-465, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-465, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-465, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-465, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-465, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-465, filed 1/30/74; Order 68-7, § 296-22-465, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-470 Middle ear. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-470, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-470, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-470, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-22-470, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-470, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-470, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-470, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-470, filed 1/30/74; Order 68-7, § 296-22-470, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-22-475 Inner ear. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-22-475, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-22-475, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-22-475, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-22-475, filed 7/23/87; 86-06-032 (Order 86-19), § 296-22-475, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-475, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-475, filed 1/30/74; Order 68-7, § 296-22-475, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

Chapter 296-25
SAFETY STANDARDS—GENERAL

296-25-005, 296-25-010, 296-25-020, 296-25-030, 296-25-040, 296-25-050, 296-25-060, 296-25-070, 296-25-080, 296-25-090, 296-25-100, 296-25-110, 296-25-120, 296-25-130, 296-25-140, 296-25-200, 296-25-205, 296-25-210, 296-25-215, 296-25-220, 296-25-225, 296-25-230, 296-25-235, 296-25-240, 296-25-245, 296-25-250, 296-25-255, 296-25-260, 296-25-265, 296-25-270, 296-25-275, 296-25-280, 296-25-285, 296-25-290, 296-25-295, 296-25-300, 296-25-305, 296-25-310, 296-25-315, 296-25-320, 296-25-325, 296-25-330, 296-25-335, 296-25-340, 296-25-345, 296-25-350, 296-25-355, 296-25-360, 296-25-365, 296-25-370, 296-25-375, 296-25-380, 296-25-385, 296-25-390, 296-25-395, 296-25-400, 296-25-405, 296-25-410, 296-25-415, 296-25-420, 296-25-425, 296-25-430, 296-25-435, 296-25-440, 296-25-445, 296-25-450, 296-25-455, 296-25-460, 296-25-465, 296-25-470, 296-25-475, 296-25-480, 296-25-485, 296-25-490, 296-25-495, 296-25-500, 296-25-505, 296-25-510, 296-25-515, 296-25-520, 296-25-525, 296-25-530, 296-25-535, 296-25-540, 296-25-545, 296-25-550, 296-25-555, 296-25-560, 296-25-565, 296-25-570, 296-25-575, 296-25-580, 296-25-585, 296-25-590, 296-25-595, 296-25-600, 296-25-605, 296-25-610, 296-25-615, 296-25-620, 296-25-625, 296-25-630, 296-25-635, 296-25-640, 296-25-645, 296-25-650, 296-25-655, 296-25-660, 296-25-665, 296-25-670, 296-25-675, 296-25-680, 296-25-685, 296-25-690, 296-25-695, 296-25-700, 296-25-705, 296-25-710, 296-25-715, 296-25-720, 296-25-725, 296-25-730, 296-25-735, 296-25-740, 296-25-745, 296-25-750, 296-25-755, 296-25-760, 296-25-765, 296-25-770, 296-25-775, 296-25-780, 296-25-785, 296-25-790, 296-25-795, 296-25-800, 296-25-805, 296-25-810, 296-25-815, 296-25-820, 296-25-825, 296-25-830, 296-25-835, 296-25-840, 296-25-845, 296-25-850, 296-25-855, 296-25-860, 296-25-865, 296-25-870, 296-25-875, 296-25-880, 296-25-885, 296-25-890, 296-25-895, 296-25-900, 296-25-905, 296-25-910, 296-25-915, 296-25-920, 296-25-925, 296-25-930, 296-25-935, 296-25-940, 296-25-945, 296-25-950, 296-25-955, 296-25-960, 296-25-965, 296-25-970, 296-25-975. [Standards 1-152, filed 3/23/60.] Repeal of chapter 296-25 WAC was declared by Order 74-27, filed 5/7/74 to be effective upon the effective date of amendments to chapter 296-24 WAC set forth as part of this order. See chapter 296-24 WAC.

Chapter 296-26
LABOR CAMP RULES

296-26-010 Definitions. [Rule .60.010, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-020 Administration. [Rule .60.020, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-030 Water supply. [Rule .60.030, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-040 Sewage and liquid waste disposal—Existing and new construction. [Rule .60.040, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-050 Plumbing—Existing and new construction. [Rule .60.050, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-060 Refuse disposal—Existing and new construction. [Rule .60.060, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-070 Rodent and insect control—Existing and new construction. [Rule .60.070, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-080 Location and maintenance—Existing and new construction. [Rule .60.080, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-090 Construction and maintenance of dwelling units. [Rule .60.090, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-100 Ventilation. [Rule .60.100, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-110 Heating—Existing and new construction. [Rule .60.110, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-120 Lighting. [Rule .60.120, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-130 Toilet, handwashing, bathing, and laundry facilities—Existing and new construction. [Rule .60.130, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-140 Foodhandling facilities—Existing and new construction. [Rule .60.140, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-150 Beds and bedding—Existing and new construction. [Rule .60.150, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-160 Supervision and responsibility. [Rule .60.160, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-170 Communicable disease. [Rule .60.170, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-180 Effective date. [Rule .60.180, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

Chapter 296-38
CULINARY WORKERS SAFETY RULES

296-38-010 General requirements. [Rule 1.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-020 Equipment—Machinery. [Rule 2.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-030 Fire protection and prevention. [Rule 3.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-040 General working conditions. [Rules 4.010-4.040, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-050 Illumination. [Rule 5.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-40
SAFETY STANDARDS—CONSTRUCTION WORK

296-40-010, 296-40-015, 296-40-020, 296-40-030, 296-40-035, 296-40-040, 296-40-045, 296-40-050, 296-40-055, 296-40-060, 296-40-065, 296-40-070, 296-40-075, 296-40-080, 296-40-085, 296-40-090, 296-40-095, 296-40-100, 296-40-105, 296-40-110, 296-40-115, 296-40-120, 296-40-125, 296-40-130, 296-40-135, 296-40-140, 296-40-145, 296-40-150, 296-40-155, 296-40-160, 296-40-165, 296-40-170, 296-40-175, 296-40-180, 296-40-185, 296-40-190, 296-40-195, 296-40-200, 296-40-205, 296-40-210, 296-40-215, 296-40-220, 296-40-225, 296-40-230, 296-40-235, 296-40-240, 296-40-245, 296-40-250, 296-40-255, 296-40-260, 296-40-265, 296-40-270, 296-40-275, 296-40-280, 296-40-285, 296-40-290, 296-40-295, 296-40-300, 296-40-310, 296-40-320, 296-40-330, 296-40-350, 296-40-360, 296-40-365, 296-40-370, 296-40-375, 296-40-380, 296-40-385, 296-40-390, 296-40-395, 296-40-400, 296-40-410, 296-40-415, 296-40-420, 296-40-425, 296-40-430, 296-40-435, 296-40-440, 296-40-450, 296-40-460, 296-40-470, 296-40-480, 296-40-490, 296-40-500, 296-40-510, 296-40-520, 296-40-530, 296-40-540, 296-40-550, 296-40-560, 296-40-570, 296-40-580, 296-40-590, 296-40-600, 296-40-610, 296-40-620, 296-40-630, 296-40-640, 296-40-650, 296-40-660, 296-40-665, 296-40-670, 296-40-675, 296-40-680, 296-40-685, 296-40-690, 296-40-695, 296-40-700, 296-40-705, 296-40-710, 296-40-715, 296-40-720, 296-40-725, 296-40-730, 296-40-735, 296-40-740, 296-40-745, 296-40-750, 296-40-755, 296-40-760, 296-40-765, 296-40-770, 296-40-780, 296-40-790, 296-40-795, 296-40-800, 296-40-810, 296-40-820, 296-40-825, 296-40-830, 296-40-835, 296-40-840, 296-40-845, 296-40-850, 296-40-855, 296-40-860, 296-40-865, 296-40-870, 296-40-875, 296-40-880, 296-40-890, Appendix 1 Traffic control signs; Appendix 2 Sheet piling, shoring and bracing; and Appendix 3 Scaffolds. [Book entitled "Safety Standards for Construction Work" chapter 296-40 WAC, filed 3/23/60.] Repealed by Order 74-26, filed 5/7/74. For later promulgation, see chapter 296-155 WAC.

296-40-412 [Order 74-1, filed 1/8/74.] Repealed by Order 74-26, filed 5/7/74 before codification in the Washington Administrative Code, see chapter 296-155 WAC, Safety standards for construction work adopted by Order 74-26, filed 5/7/74.

Chapter 296-41
LIQUEFIED PETROLEUM GASES

The Standards for the Storage and Handling of Liquefied Petroleum Gases, N.B.F.U. #58. [Filed 3/29/61.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-42
PETROLEUM—REFINING, TRANSPORTATION AND HANDLING

296-42-010 Application, scope and permits for variations from orders. [§ I, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-020 Definitions. [§ 2, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-030 Accident prevention program. [Rules 3.010-3.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-040 First aid. [Rule 4.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-050 Fire and explosions—Smoking, matches, lighters. [Rule 5.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-060 Fire and explosions—Fire protection and fire fighting equipment. [Rule 5.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-070 Fire and explosions—Cleaning oils. [Rule 5.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-080 Fire and explosions—Static electricity. [Rule 5.040, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-090 Fire and explosions—Spontaneous ignition. [Rule 5.050, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-100 Fire and explosions—Fire permits. [Rule 5.060, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-110 Fire and explosions—Surge tanks. [Rule 5.070, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-120 Fire and explosions—Flammable waste gases or vapors. [Rule 5.080, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-130 Fire and explosions—Transfer of light oils by air displacement. [Rule 5.090, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-140 Fire and explosions—Steam hose. [Rule 5.100, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-150 Dangerous exposure. [Rules 6.010 and 6.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-160 Enclosed and confined spaces—Ventilation. [Rule 7.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-170 Enclosed and confined spaces—Confined spaces. [Rule 7.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-180 Escape exits. [Rule 8.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-200 Tanks—Stationary tanks. [Rule 9.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-210 Tanks—Stationary tank maintenance. [Rule 9.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-220 Tanks—Diversion and retaining walls. [Rule 9.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-230 Gas and vapor testing. [Rule 10.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-240 Opening and blinding pipe lines and equipment—Opening pipe lines and equipment. [Rule 11.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-250 Opening and blinding pipe lines and equipment—Blinding of pipe lines and equipment. [Rule 11.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-260 Hazardous commodities—General. [Rule 12.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-270 Hazardous commodities—Corrosives. [Rule 12.020, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-280 Hazardous commodities—Leaded gasoline stationary tanks. [Rule 12.030, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-290 Drainage. [Rule 13.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-300 Agitation and heating of liquids in tanks. [Rule 14.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-310 Process equipment maintenance—General. [Rule 15.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-320 Process equipment maintenance—Condenser and cooling boxes. [Rule 15.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-330 Pumps, pipe lines and valves—Pumps. [Rule 16.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-340 Pumps, pipe lines and valves—Pipe lines and piping. [Rule 16.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-350 Pumps, pipe lines and valves—Valves. [Rule 16.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-360 Equipment leakage and breakage—Leakage control. [Rule 17.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-370 Equipment leakage and breakage—Gage glasses. [Rule 17.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-380 Equipment identification. [Rule 18.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-390 Gas compressors and engines—Gas compressor or gas processing plant protection. [Rule 19.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-400 Gas compressors and engines—Gas compressors. [Rule 19.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-410 Gas compressors and engines—Stationary internal combustion engines. [Rule 19.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-420 Loading and unloading facilities and operations—Loading platforms. [Rule 20.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-430 Loading and unloading facilities and operations—Loading and unloading operations. [Rule 20.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-440 Loading and unloading facilities and operations—Liquefied petroleum gases—Loading and unloading. [Rule 20.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-450 Laboratories and pilot plants. [Rule 21.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-460 Wharves. [Rule 22.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-470 Bulk distributing plants. [Rule 23.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-47
ELECTRICAL WIRING AND APPARATUS

Reviser's note: On March 29, 1961, the department of labor and industries filed with the code reviser's office the November 1959 edition of the N.B.F.U. National Electrical Code #70. On March 31st, the code reviser received a letter from the department stating that such code was adopted by the procedure prescribed by law.

Repealed by 94-01-005, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 19.28.010.

Chapter 296-48
MOBILE HOMES, COMMERCIAL COACHES AND RECREATIONAL VEHICLES

296-48-005 Administrative—Authority for mobile home code. [Order 76-26, § 296-48-005, filed 8/23/76; Order 75-20, § 296-48-005, filed 7/16/75; Order 70-2, § 296-48-005, filed 4/27/70; Order 68-4, § 296-48-005, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-010 Application and scope. [Order 76-26, § 296-48-010, filed 8/23/76; Order 75-40, § 296-48-010, filed 12/4/75; Order 75-20, § 296-48-010, filed 7/16/75; Order 70-10, § 296-48-010, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-010, filed 4/27/70; Order 68-4, § 296-48-010, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-011 Conditions of reciprocity. [Order 74-11, § 296-48-011, filed 4/8/74; Order 73-14, § 296-49-001, filed 7/31/73. Formerly WAC 296-49-001 and 296-49-011.] Repealed by Order 76-26, filed 8/23/76.

296-48-012 Agreements with out-of-state jurisdictions. [Order 73-14, § 296-48-012, filed 7/31/73. Formerly WAC 296-49-012.] Repealed by Order 76-26, filed 8/23/76.

296-48-020 Alteration of mobile homes. [Order 76-26, § 296-48-020, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-050 General. [Order 70-2, § 296-48-050, filed 4/27/70; Order 68-4, § 296-48-050, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-051 Definitions. [Order 76-26, § 296-48-051, filed 8/23/76; Order 75-20, § 296-48-051, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-055 Alteration or conversion. [Order 70-10, § 296-48-055, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-055, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-060 Approved. [Order 68-4, § 296-48-060, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-063 Approved listing agency. [Order 70-10, § 296-48-063, filed 9/17/70, effective 1/1/71.] Repealed by Order 75-20, filed 7/16/75.

296-48-065 Approved testing agency. [Order 70-10, § 296-48-065, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-065, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-066 Camping trailer. [Order 70-2, § 296-48-066, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-070 Dealer. [Order 70-2, § 296-48-070, filed 4/27/70; Order 68-4, § 296-48-070, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-075 Department. [Order 70-2, § 296-48-075, filed 4/27/70; Order 68-4, § 296-48-075, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-080 Equipment. [Order 70-10, § 296-48-080, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-080, filed 4/27/70; Order 68-4, § 296-48-080, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-085 Field technical service. [Order 68-4, § 296-48-085, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-090 Insignia. [Order 70-2, § 296-48-090, filed 4/27/70; Order 68-4, § 296-48-090, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-095 Installations. [Order 70-10, § 296-48-095, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-095, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-100 Labeled. [Order 68-4, § 296-48-100, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-105 Length of vehicles. [Order 68-4, § 296-48-105, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-110 Listed. [Order 68-4, § 296-48-110, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-115 Mobile home. [Order 70-2, § 296-48-115, filed 4/27/70; Order 68-4, § 296-48-115, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-120 Vehicle—Expandable. [Order 68-4, § 296-48-120, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-125 Vehicle—Multiple. [Order 68-4, § 296-48-125, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-130 Model. [Order 70-10, § 296-48-130, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-130, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-135 Model change. [Order 68-4, § 296-48-135, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-140 Model—Group. [Order 68-4, § 296-48-140, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-145 Prohibited sales notice. [Order 68-4, § 296-48-145, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-150 Commercial coach. [Order 70-2, § 296-48-150, filed 4/27/70; Order 68-4, § 296-48-150, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-151 Travel trailer. [Order 68-4, § 296-48-151, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-155 Recreational vehicle. [Order 70-2, § 296-48-155, filed 4/27/70; Order 68-4, § 296-48-155, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-156 Travel trailer. [Order 70-2, § 296-48-156, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-158 Truck camper. [Order 70-2, § 296-48-158, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-160 Vehicle. [Order 70-2, § 296-48-160, filed 4/27/70; Order 68-4, § 296-48-160, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-165 Vehicle—Self contained. [Order 70-2, § 296-48-165, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-200 Air gap. [Order 68-4, § 296-48-200, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-205 Combination compartment. [Order 68-4, § 296-48-205, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-210 Common vent. [Order 68-4, § 296-48-210, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-215 Continuous vent. [Order 68-4, § 296-48-215, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-220 Critical level. [Order 68-4, § 296-48-220, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-225 Diameter. [Order 68-4, § 296-48-225, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-230 Drain coupler. [Order 68-4, § 296-48-230, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-235 Drain outlet. [Order 68-4, § 296-48-235, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-240 Drainage system. [Order 68-4, § 296-48-240, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-245 Flush tank. [Order 68-4, § 296-48-245, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-250 Flush valve. [Order 68-4, § 296-48-250, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-255 Flushometer valve. [Order 68-4, § 296-48-255, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-260 Horizontal pipe. [Order 68-4, § 296-48-260, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-265 Individual vent. [Order 68-4, § 296-48-265, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-270 Longitudinal center. [Order 68-4, § 296-48-270, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-275 Main drain. [Order 68-4, § 296-48-275, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-280 Main vent. [Order 68-4, § 296-48-280, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-285 Plumbing fixture. [Order 68-4, § 296-48-285, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-290 Toilet-mechanical seal. [Order 68-4, § 296-48-290, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-295 Toilet-recirculating chemical. [Order 68-4, § 296-48-295, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-300 Toilet-water flush. [Order 68-4, § 296-48-300, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-305 Trap. [Order 68-4, § 296-48-305, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-310 Trap arm. [Order 68-4, § 296-48-310, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-315 Trap seal. [Order 68-4, § 296-48-315, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-320 Vent system. [Order 68-4, § 296-48-320, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-325 Vertical pipe. [Order 68-4, § 296-48-325, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-330 Waste-holding tank. [Order 68-4, § 296-48-330, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-335 Water distribution system. [Order 68-4, § 296-48-335, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-340 Water supply connection. [Order 68-4, § 296-48-340, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-345 Water storage tank. [Order 68-4, § 296-48-345, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-350 Wet vent. [Order 68-4, § 296-48-350, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-355 Wet-vented drainage system. [Order 68-4, § 296-48-355, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-400 Anti-flooding device. [Order 68-4, § 296-48-400, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-405 Appliance branch piping. [Order 68-4, § 296-48-405, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-410 Appliance compartment. [Order 68-4, § 296-48-410, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-415 Automatic pilot device. [Order 68-4, § 296-48-415, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-420 Automatic pump (oil lifter). [Order 68-4, § 296-48-420, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-425 BTUH. [Order 68-4, § 296-48-425, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-430 Duct. [Order 68-4, § 296-48-430, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-435 Gas appliance connector. [Order 68-4, § 296-48-435, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-440 Gas piping. [Order 68-4, § 296-48-440, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-445 Gas supply connection. [Order 68-4, § 296-48-445, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-450 Gas supply connector. [Order 68-4, § 296-48-450, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-455 Heat-producing appliance. [Order 68-4, § 296-48-455, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-460 Input rating. [Order 68-4, § 296-48-460, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-465 Main gas piping manifold. [Order 68-4, § 296-48-465, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-470 Oil piping system. [Order 68-4, § 296-48-470, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-475 Roof jack. [Order 68-4, § 296-48-475, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-480 Vent connector. [Order 68-4, § 296-48-480, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-485 Water heater. [Order 68-4, § 296-48-485, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-500 A.W.G. [Order 68-4, § 296-48-500, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-501 Accessible (as applied to wiring methods). [Order 70-2, § 296-48-501, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-505 Battery circuit. [Order 70-2, § 296-48-505, filed 4/27/70; Order 68-4, § 296-48-505, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-510 Branch circuit panelboard. [Order 70-2, § 296-48-510, filed 4/27/70; Order 68-4, § 296-48-510, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-515 Low-voltage power circuit. [Order 70-2, § 296-48-515, filed 4/27/70; Order 68-4, § 296-48-515, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-520 National Electrical Code (N.E.C.). [Order 70-2, § 296-48-520, filed 4/27/70; Order 68-4, § 296-48-520, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-525 Power supply assembly. [Order 70-2, § 296-48-525, filed 4/27/70; Order 68-4, § 296-48-525, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-526 Concealed. [Order 70-2, § 296-48-526, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-528 Converter. [Order 70-2, § 296-48-528, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-530 D.C. current. [Order 70-2, § 296-48-530, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-535 Dual supply source. [Order 70-2, § 296-48-535, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-540 Laundry area. [Order 70-2, § 296-48-540, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-545 Transformer. [Order 70-2, § 296-48-545, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-550 Ceiling height. [Order 70-10, § 296-48-550, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-551 Definitions. [Order 73-17, § 296-48-551, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

296-48-555 Construction. [Order 70-10, § 296-48-555, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-560 Dead load. [Order 70-10, § 296-48-560, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-562 Dormitory. [Order 70-10, § 296-48-562, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-565 Dwelling unit. [Order 70-10, § 296-48-565, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-568 Exit. [Order 70-10, § 296-48-568, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-570 Fire safety. [Order 70-10, § 296-48-570, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-572 Superficial floor area. [Order 70-10, § 296-48-572, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-574 Guest room. [Order 70-10, § 296-48-574, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-576 Habitable room. [Order 70-10, § 296-48-576, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-577 Interior finish. [Order 70-10, § 296-48-577, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-578 Kitchen. [Order 70-10, § 296-48-578, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-580 Live load. [Order 70-10, § 296-48-580, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-582 Multiple dwelling unit. [Order 70-10, § 296-48-582, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-584 Occupancy. [Order 70-10, § 296-48-584, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-588 Wall—Bearing. [Order 70-10, § 296-48-588, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-590 Wall—Exterior. [Order 70-10, § 296-48-590, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-592 Wall—Nonbearing. [Order 70-10, § 296-48-592, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-594 Wall—Parapet. [Order 70-10, § 296-48-594, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-596 Wind load. [Order 70-10, § 296-48-596, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-598 Window. [Order 70-10, § 296-48-598, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-600 Enforcement. [Order 76-26, § 296-48-600, filed 8/23/76; Order 75-20, § 296-48-600, filed 7/16/75; Order 70-10, § 296-48-600, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-600, filed 4/27/70; Order 68-4, § 296-48-600, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-602 State enforcement of federal rules and regulations. [Order 76-26, § 296-48-602, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-604 Limited application of remaining sections. [Order 76-26, § 296-48-604, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-605 Equipment and installations. [Order 75-20, § 296-48-605, filed 7/16/75; Order 70-10, § 296-48-605, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-605, filed 4/27/70; Order 68-4, § 296-48-605, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-610 Department disapproval of listed or labeled equipment and installations. [Order 75-20, § 296-48-610, filed 7/16/75; Order 68-4, § 296-48-610, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-615 Approval of alternates and equivalents. [Order 75-20, § 296-48-615, filed 7/16/75; Order 70-10, § 296-48-615, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-615, filed 4/27/70; Order 68-4, § 296-48-615, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-620 Manufacturer's approval. [Order 75-20, § 296-48-620, filed 7/16/75; Order 68-4, § 296-48-620, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-625 Required inspection. [Order 75-20, § 296-48-625, filed 7/16/75; Order 70-2, § 296-48-625, filed 4/27/70; Order 68-4, § 296-48-625, filed 5/31/68, effective 7/1/68.]

Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-630 Inspection approval. [Order 75-20, § 296-48-630, filed 7/16/75; Order 70-10, § 296-48-630, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-630, filed 4/27/70; Order 68-4, § 296-48-630, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-635 Notice of violations. [Order 75-20, § 296-48-635, filed 7/16/75; Order 68-4, § 296-48-635, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-636 Complaint investigation. [Order 75-20, § 296-48-636, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-640 Action after requested inspection. [Order 68-4, § 296-48-640, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-645 Field technical service. [Order 75-20, § 296-48-645, filed 7/16/75; Order 68-4, § 296-48-645, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-700 Application for plan approval. [Order 68-4, § 296-48-700, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-701 Application for structural system approval. [Order 75-20, § 296-48-701, filed 7/16/75; Order 70-10, § 296-48-701, filed 9/17/70, effective 1/1/71.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-702 Application for electrical, mechanical and plumbing system approval. [Order 75-20, § 296-48-702, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-703 Application for model plan approval. [Order 75-20, § 296-48-703, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-704 Application for in-plant quality control manual approval. [Order 75-20, § 296-48-704, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-705 Plan and specification requirements. [Order 70-10, § 296-48-705, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-705, filed 4/27/70; Order 68-4, § 296-48-705, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-706 Calculations and test procedure. [Order 75-20, § 296-48-706, filed 7/16/75; Order 70-10, § 296-48-706, filed 9/17/70, effective 1/1/71.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-710 Model manufactured in more than one location. [Order 75-20, § 296-48-710, filed 7/16/75; Order 68-4, § 296-48-710, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-715 Out-of-state applicant. [Order 75-20, § 296-48-715, filed 7/16/75; Order 68-4, § 296-48-715, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-720 Nonconforming application and plans. [Order 70-2, § 296-48-720, filed 4/27/70; Order 68-4, § 296-48-720, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-725 Evidence of department's approval. [Order 75-20, § 296-48-725, filed 7/16/75; Order 68-4, § 296-48-725, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-730 Plan approval expiration. [Order 75-20, § 296-48-730, filed 7/16/75; Order 71-11, § 296-48-730, filed 10/8/71; Order 70-2, § 296-48-730, filed 4/27/70; Order 68-4, § 296-48-730, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-735 In-plant quality control. [Order 75-20, § 296-48-735, filed 7/16/75; Order 70-10, § 296-48-735, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-735, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-740 Changes to approved plans. [Order 75-20, § 296-48-740, filed 7/16/75; Order 70-10, § 296-48-740, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-740, filed 4/27/70; Order 68-4, § 296-48-740, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-745 Change of ownership. [Order 68-4, § 296-48-745, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-750 Change of name or address. [Order 68-4, § 296-48-750, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-755 Discontinuance of manufacture. [Order 68-4, § 296-48-755, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-760 Vehicle identification. [Order 75-20, § 296-48-760, filed 7/16/75; Order 70-2, § 296-48-760, filed 4/27/70; Order 68-4, § 296-48-760, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-761 Labels for exterior locations. [Order 75-20, § 296-48-761, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-765 Insignia required. [Order 75-20, § 296-48-765, filed 7/16/75; Order 68-4, § 296-48-765, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-770 Insignia not required. [Order 75-20, § 296-48-770, filed 7/16/75; Order 68-4, § 296-48-770, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-775 Application for insignia pursuant to plan approval. [Order 75-20, § 296-48-775, filed 7/16/75; Order 70-2, § 296-48-775, filed 4/27/70; Order 68-4, § 296-48-775, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-776 Application for insignia pursuant to requested inspection. [Order 75-20, § 296-48-776, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-780 Alteration or conversion. [Order 75-20, § 296-48-780, filed 7/16/75; Order 70-10, § 296-48-780, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-780, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-781 Not applicable. [Order 75-20, § 296-48-781, filed 7/16/75; Order 68-4, § 296-48-781, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-782 Application requirements. [Order 75-20, § 296-48-782, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-785 Denial of insignia. [Order 68-4, § 296-48-785, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-790 Insignia removal. [Order 75-20, § 296-48-790, filed 7/16/75; Order 68-4, § 296-48-790, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-795 Lost or damaged insignia. [Order 75-20, § 296-48-795, filed 7/16/75; Order 68-4, § 296-48-795, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-800 Fees. [Order 77-5, § 296-48-800, filed 4/6/77; Order 76-26, § 296-48-800, filed 8/23/76; Order 75-20, § 296-48-800, filed 7/16/75; Order 70-10, § 296-48-800, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-800, filed 4/27/70; Order 68-4, § 296-48-800, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-825 Public hearing. [Order 68-4, § 296-48-825, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-830 Aggrievance hearing request. [Order 68-4, § 296-48-830, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-890 Appendix—ANSI A119.1—Copies. [Order 76-26, Appendix (codified as WAC 296-48-890), filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-905 Minimum standards. [Order 70-2, § 296-48-905, filed 4/27/70; Order 68-4, § 296-48-905, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-910 Rodent proofing. [Order 68-4, § 296-48-910, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-915 Prohibited fittings and practices. [Order 68-4, § 296-48-915, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-920 Alignment of fittings. [Order 68-4, § 296-48-920, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-930 Standards for equipment and installations. [Order 70-2, § 296-48-930, filed 4/27/70; Order 68-4, § 296-48-930, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-940 Strains and stresses. [Order 68-4, § 296-48-940, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-950 Tightness. [Order 68-4, § 296-48-950, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-955 Threaded joints. [Order 68-4, § 296-48-955, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-960 Solder joints. [Order 68-4, § 296-48-960, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-965 Plastic pipe and fittings. [Order 68-4, § 296-48-965, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1005 Pipe. [Order 68-4, § 296-48-1005, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1011 Fittings. [Order 68-4, § 296-48-1010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1011.] Repealed by Order 76-26, filed 8/23/76.

296-48-1021 Location. [Order 70-2, § 296-48-1021, filed 4/27/70; Order 68-4, § 296-48-1020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1021.] Repealed by Order 76-26, filed 8/23/76.

296-48-1025 Cap or plug. [Order 68-4, § 296-48-1025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1031 Clearance from drain outlet. [Order 68-4, § 296-48-1030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1031.] Repealed by Order 76-26, filed 8/23/76.

296-48-1035 Drain couplers and caps. [Order 68-4, § 296-48-1035, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1041 Drain outlet size. [Order 70-2, § 296-48-1041, filed 4/27/70; Order 68-4, § 296-48-1040, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1041.] Repealed by Order 76-26, filed 8/23/76.

296-48-1051 Fixture load. [Order 68-4, § 296-48-1050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1051.] Repealed by Order 76-26, filed 8/23/76.

296-48-1055 Wet-vented drainage system. [Order 70-2, § 296-48-1055, filed 4/27/70; Order 68-4, § 296-48-1055, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1061 Side-vent drainage system. [Order 70-2, § 296-48-1061, filed 4/27/70; Order 68-4, § 296-48-1060, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1061.] Repealed by Order 75-20, filed 7/16/75.

296-48-1071 Changes in direction. [Order 68-4, § 296-48-1070, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1071.] Repealed by Order 76-26, filed 8/23/76.

296-48-1075 Grade of horizontal drainage piping. [Order 68-4, § 296-48-1075, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1081 Waste holding tank. [Order 70-2, § 296-48-1081, filed 4/27/70; Order 68-4, § 296-48-1080, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1081.] Repealed by Order 75-20, filed 7/16/75.

296-48-1082 Detachable waste holding system. [Order 71-11, § 296-48-1082, filed 10/8/71.] Repealed by Order 75-20, filed 7/16/75.

296-48-1101 Traps required. [Order 68-4, § 296-48-1100, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1101.] Repealed by Order 76-26, filed 8/23/76.

296-48-1105 Dual fixtures. [Order 70-2, § 296-48-1105, filed 4/27/70; Order 68-4, § 296-48-1105, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1111 Prohibited traps. [Order 68-4, § 296-48-1110, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1111.] Repealed by Order 76-26, filed 8/23/76.

296-48-1115 Material and design. [Order 68-4, § 296-48-1115, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1121 Trap seal. [Order 68-4, § 296-48-1120, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1121.] Repealed by Order 76-26, filed 8/23/76.

296-48-1125 Size. [Order 68-4, § 296-48-1125, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1131 Location. [Order 68-4, § 296-48-1130, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1131.] Repealed by Order 76-26, filed 8/23/76.

296-48-1135 Distance from trap to vent. [Order 68-4, § 296-48-1135, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1141 Length of tailpiece. [Order 68-4, § 296-48-1140, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1141.] Repealed by Order 76-26, filed 8/23/76.

296-48-1151 Grade of trap arm. [Order 68-4, § 296-48-1150, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1151.] Repealed by Order 76-26, filed 8/23/76.

296-48-1155 Trap arm offset. [Order 68-4, § 296-48-1155, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1161 Concealed traps. [Order 68-4, § 296-48-1160, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1161.] Repealed by Order 76-26, filed 8/23/76.

296-48-1165 Protection. [Order 68-4, § 296-48-1165, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1175 Location of cleanout fittings. [Order 68-4, § 296-48-1175, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1181 Access to cleanouts. [Order 68-4, § 296-48-1180, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1181.] Repealed by Order 76-26, filed 8/23/76.

296-48-1185 Material. [Order 68-4, § 296-48-1185, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1191 Design. [Order 68-4, § 296-48-1190, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1191.] Repealed by Order 76-26, filed 8/23/76.

296-48-1201 General. [Order 68-4, § 296-48-1200, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1201.] Repealed by Order 76-26, filed 8/23/76.

296-48-1205 Pipe. [Order 68-4, § 296-48-1205, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1211 Fittings. [Order 68-4, § 296-48-1210, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1211.] Repealed by Order 76-26, filed 8/23/76.

296-48-1215 Main vent. [Order 68-4, § 296-48-1215, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1221 Combination compartment. [Order 68-4, § 296-48-1220, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1221.] Repealed by Order 75-20, filed 7/16/75.

296-48-1225 Individual vents. [Order 70-2, § 296-48-1225, filed 4/27/70; Order 68-4, § 296-48-1225, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1231 Common vent. [Order 68-4, § 296-48-1230, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1231.] Repealed by Order 76-26, filed 8/23/76.

296-48-1235 Intersecting vents. [Order 68-4, § 296-48-1235, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1241 Horizontal vents. [Order 68-4, § 296-48-1240, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1241.] Repealed by Order 76-26, filed 8/23/76.

296-48-1245 Grade. [Order 68-4, § 296-48-1245, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1251 Roof extension. [Order 68-4, § 296-48-1250, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1251.] Repealed by Order 76-26, filed 8/23/76.

296-48-1255 Flashing. [Order 68-4, § 296-48-1255, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1305 Piping material. [Order 68-4, § 296-48-1305, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1311 Fittings. [Order 68-4, § 296-48-1310, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1311.] Repealed by Order 76-26, filed 8/23/76.

296-48-1315 Prohibited materials. [Order 68-4, § 296-48-1315, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1325 Screw pipe. [Order 68-4, § 296-48-1325, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1331 Solder fittings. [Order 68-4, § 296-48-1330, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1331.] Repealed by Order 76-26, filed 8/23/76.

296-48-1335 Flared fittings. [Order 68-4, § 296-48-1335, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1341 Water supply piping. [Order 68-4, § 296-48-1340, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1341.] Repealed by Order 76-26, filed 8/23/76.

296-48-1345 Minimum sizes. [Order 70-2, § 296-48-1345, filed 4/27/70; Order 68-4, § 296-48-1345, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1351 Sizing procedure. [Order 68-4, § 296-48-1350, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1351.] Repealed by Order 76-26, filed 8/23/76.

296-48-1355 Valves. [Order 68-4, § 296-48-1355, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1361 Location. [Order 70-2, § 296-48-1361, filed 4/27/70; Order 68-4, § 296-48-1360, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1361.] Repealed by Order 76-26, filed 8/23/76.

296-48-1365 Prohibited connections. [Order 68-4, § 296-48-1365, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1371 Supply outlets. [Order 68-4, § 296-48-1370, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1371.] Repealed by Order 76-26, filed 8/23/76.

296-48-1375 Appliance connections. [Order 68-4, § 296-48-1375, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1381 Flushometer valves or manually-operated flush valves. [Order 68-4, § 296-48-1380, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1381.] Repealed by Order 76-26, filed 8/23/76.

296-48-1385 Flush tanks. [Order 68-4, § 296-48-1385, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1391 Backflow preventer. [Order 68-4, § 296-48-1390, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1391.] Repealed by Order 75-20, filed 7/16/75.

296-48-1395 Mechanical seal toilet valves. [Order 68-4, § 296-48-1395, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-1405 Relief valves. [Order 70-2, § 296-48-1405, filed 4/27/70; Order 68-4, § 296-48-1405, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1411 Water tanks. [Order 68-4, § 296-48-1410, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1411.] Repealed by Order 76-26, filed 8/23/76.

296-48-1451 Quality of fixtures. [Order 68-4, § 296-48-1450, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1451.] Repealed by Order 76-26, filed 8/23/76.

296-48-1455 Strainers. [Order 68-4, § 296-48-1455, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1461 Fixture connections. [Order 70-2, § 296-48-1461, filed 4/27/70; Order 68-4, § 296-48-1460, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1461.] Repealed by Order 76-26, filed 8/23/76.

296-48-1465 Drain connections. [Order 68-4, § 296-48-1465, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1471 Concealed connections. [Order 68-4, § 296-48-1470, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1471.] Repealed by Order 76-26, filed 8/23/76.

296-48-1475 Directional fitting. [Order 68-4, § 296-48-1475, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1481 Toilet. [Order 68-4, § 296-48-1480, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1481.] Repealed by Order 76-26, filed 8/23/76.

296-48-1485 Toilet connection. [Order 70-2, § 296-48-1485, filed 4/27/70; Order 68-4, § 296-48-1485, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1491 Shower stalls. [Order 68-4, § 296-48-1490, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1491.] Repealed by Order 76-26, filed 8/23/76.

296-48-1495 Shower and tub enclosures. [Order 68-4, § 296-48-1495, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1501 Dishwashing machines. [Order 68-4, § 296-48-1500, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1501.] Repealed by Order 76-26, filed 8/23/76.

296-48-1505 Clotheswashing machines. [Order 71-11, § 296-48-1505, filed 10/8/71; Order 68-4, § 296-48-1505, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1511 Access. [Order 68-4, § 296-48-1510, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1511.] Repealed by Order 76-26, filed 8/23/76.

296-48-1515 Alignment. [Order 68-4, § 296-48-1515, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1521 Brackets. [Order 68-4, § 296-48-1520, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1521.] Repealed by Order 76-26, filed 8/23/76.

296-48-1551 Water piping system. [Order 68-4, § 296-48-1550, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1551.] Repealed by Order 76-26, filed 8/23/76.

296-48-1555 Drainage and vent system. [Order 68-4, § 296-48-1555, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1561 Fixtures. [Order 68-4, § 296-48-1560, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1561.] Repealed by Order 76-26, filed 8/23/76.

296-48-1601 Standards for appliances and equipment. [Order 68-4, § 296-48-1600, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1601.] Repealed by Order 76-26, filed 8/23/76.

296-48-1605 Capacity of containers. [Order 70-2, § 296-48-1605, filed 4/27/70; Order 68-4, § 296-48-1605, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1611 Construction of containers. [Order 68-4, § 296-48-1610, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1611.] Repealed by Order 76-26, filed 8/23/76.

296-48-1615 Marking of containers. [Order 68-4, § 296-48-1615, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1621 Location and enclosure of containers and systems. [Order 68-4, § 296-48-1620, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1621.] Repealed by Order 76-26, filed 8/23/76.

296-48-1625 Valves, connectors and accessories. [Order 68-4, § 296-48-1625, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1631 Safety devices. [Order 68-4, § 296-48-1630, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1631.] Repealed by Order 76-26, filed 8/23/76.

296-48-1635 Container mounting. [Order 68-4, § 296-48-1635, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1641 System design and service line pressure. [Order 68-4, § 296-48-1640, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1641.] Repealed by Order 76-26, filed 8/23/76.

296-48-1681 General. [Order 70-2, § 296-48-1681, filed 4/27/70; Order 68-4, § 296-48-1680, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1681.] Repealed by Order 76-26, filed 8/23/76.

296-48-1685 Materials. [Order 68-4, § 296-48-1685, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1691 Piping design. [Order 68-4, § 296-48-1690, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1691.] Repealed by Order 76-26, filed 8/23/76.

296-48-1695 Expandable or multiple vehicles. [Order 68-4, § 296-48-1695, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1701 Gas pipe sizing. [Order 68-4, § 296-48-1700, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1701.] Repealed by Order 76-26, filed 8/23/76.

296-48-1705 Joints for gas piping. [Order 68-4, § 296-48-1705, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1711 Joints for tubing. [Order 68-4, § 296-48-1710, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1711.] Repealed by Order 76-26, filed 8/23/76.

296-48-1715 Pipe joint compound. [Order 68-4, § 296-48-1715, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1721 Concealed tubing. [Order 68-4, § 296-48-1720, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1721.] Repealed by Order 76-26, filed 8/23/76.

296-48-1725 Concealed joints. [Order 68-4, § 296-48-1725, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1731 Location of gas supply connection. [Order 70-2, § 296-48-1731, filed 4/27/70; Order 68-4, § 296-48-1730, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1731.] Repealed by Order 76-26, filed 8/23/76.

296-48-1735 Identification of gas supply connections. [Order 68-4, § 296-48-1735, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1741 Gas supply connectors. [Order 68-4, § 296-48-1740, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1741.] Repealed by Order 76-26, filed 8/23/76.

296-48-1745 Appliance connections. [Order 68-4, § 296-48-1745, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1746 Exterior appliance connection. [Order 68-4, § 296-48-1746, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1751 Valves. [Order 68-4, § 296-48-1750, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1751.] Repealed by Order 76-26, filed 8/23/76.

296-48-1755 Gas supply connection cap. [Order 68-4, § 296-48-1755, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1761 Electrical ground. [Order 68-4, § 296-48-1760, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1761.] Repealed by Order 76-26, filed 8/23/76.

296-48-1765 Couplings. [Order 68-4, § 296-48-1765, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1771 Hangers and supports. [Order 68-4, § 296-48-1770, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1771.] Repealed by Order 76-26, filed 8/23/76.

296-48-1775 Testing. [Order 68-4, § 296-48-1775, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1781 Leaks. [Order 68-4, § 296-48-1780, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1781.] Repealed by Order 76-26, filed 8/23/76.

296-48-1801 General. [Order 68-4, § 296-48-1800, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1801.] Repealed by Order 76-26, filed 8/23/76.

296-48-1805 Expandable or multiple vehicles. [Order 68-4, § 296-48-1805, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1811 Materials. [Order 68-4, § 296-48-1810, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1811.] Repealed by Order 76-26, filed 8/23/76.

296-48-1815 Size of oil piping. [Order 68-4, § 296-48-1815, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1821 Joints for oil piping. [Order 68-4, § 296-48-1820, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1821.] Repealed by Order 76-26, filed 8/23/76.

296-48-1825 Pipe joint compound. [Order 68-4, § 296-48-1825, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1831 Couplings. [Order 68-4, § 296-48-1830, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1831.] Repealed by Order 76-26, filed 8/23/76.

296-48-1835 Oil tanks—Installation. [Order 68-4, § 296-48-1835, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1841 Auxiliary oil storage tanks. [Order 68-4, § 296-48-1840, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1841.] Repealed by Order 76-26, filed 8/23/76.

296-48-1845 Tank compartment. [Order 68-4, § 296-48-1845, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1851 Shutoff valve. [Order 68-4, § 296-48-1850, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1851.] Repealed by Order 76-26, filed 8/23/76.

296-48-1855 Fuel oil filter. [Order 68-4, § 296-48-1855, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1901 General. [Order 71-11, § 296-48-1901, filed 10/8/71; Order 68-4, § 296-48-1900, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1901.] Repealed by Order 76-26, filed 8/23/76.

296-48-1902 Gas clothes dryers. [Order 71-11, § 296-48-1902, filed 10/8/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-1905 Vented wall furnace installation. [Order 68-4, § 296-48-1905, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1911 Type of fuel. [Order 68-4, § 296-48-1910, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1911.] Repealed by Order 76-26, filed 8/23/76.

296-48-1921 Vents and venting. [Order 68-4, § 296-48-1920, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1921.] Repealed by Order 76-26, filed 8/23/76.

296-48-1925 Cooking area ventilation. [Order 68-4, § 296-48-1925, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1931 Safety devices—Appliances—Types. [Order 70-2, § 296-48-1931, filed 4/27/70; Order 68-4, § 296-48-1930, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1931.] Repealed by Order 76-26, filed 8/23/76.

296-48-1935 Installation—Appliances—General. [Order 68-4, § 296-48-1935, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1941 Location. [Order 68-4, § 296-48-1940, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1941.] Repealed by Order 76-26, filed 8/23/76.

296-48-1945 Accessibility. [Order 70-2, § 296-48-1945, filed 4/27/70; Order 68-4, § 296-48-1945, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1951 Operating instructions. [Order 68-4, § 296-48-1950, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1951.] Repealed by Order 76-26, filed 8/23/76.

296-48-1955 Clearances—General. [Order 68-4, § 296-48-1955, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1961 Clearances—Ranges. [Order 68-4, § 296-48-1960, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1961.] Repealed by Order 76-26, filed 8/23/76.

296-48-1985 Material. [Order 68-4, § 296-48-1985, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1991 Construction and installation. [Order 68-4, § 296-48-1990, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1991.] Repealed by Order 76-26, filed 8/23/76.

296-48-1995 Expandable or multiple vehicles. [Order 68-4, § 296-48-1995, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2001 Sizing of ducts. [Order 68-4, § 296-48-2000, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2001.] Repealed by Order 76-26, filed 8/23/76.

296-48-2011 Airtightness of supply duct system. [Order 68-4, § 296-48-2010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2011.] Repealed by Order 76-26, filed 8/23/76.

296-48-2015 Test equipment. [Order 68-4, § 296-48-2015, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2021 Required air. [Order 68-4, § 296-48-2020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2021.] Repealed by Order 76-26, filed 8/23/76.

296-48-2025 Fresh air openings. [Order 68-4, § 296-48-2025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2031 Location of openings. [Order 68-4, § 296-48-2030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2031.] Repealed by Order 76-26, filed 8/23/76.

296-48-2041 Return air openings. [Order 68-4, § 296-48-2040, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2041.] Repealed by Order 76-26, filed 8/23/76.

296-48-2045 Return air ducts. [Order 68-4, § 296-48-2045, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2051 Permanent openings. [Order 68-4, § 296-48-2050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2051.] Repealed by Order 76-26, filed 8/23/76.

296-48-3001 General. [Order 70-2, § 296-48-3001, filed 4/27/70; Order 68-4, § 296-48-3000, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3001.] Repealed by Order 76-26, filed 8/23/76.

296-48-3011 Battery circuits. [Order 70-2, § 296-48-3011, filed 4/27/70; Order 68-4, § 296-48-3010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3011.] Repealed by Order 75-20, filed 7/16/75.

296-48-3015 Wiring materials for low-voltage circuits for recreational vehicles. [Order 70-2, § 296-48-3015, filed 4/27/70; Order 68-4, § 296-48-3015, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3019 Wiring methods. [Order 70-2, § 296-48-3019, filed 4/27/70; Order 68-4, § 296-48-3020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3019.] Repealed by Order 75-20, filed 7/16/75.

296-48-3021 Generator installations. [Order 70-2, § 296-48-3021, filed 4/27/70; Order 68-4, § 296-48-3021, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3025 Overcurrent protection. [Order 70-2, § 296-48-3025, filed 4/27/70; Order 68-4, § 296-48-3025, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3031 Combination electrical systems. [Order 70-2, § 296-48-3031, filed 4/27/70; Order 68-4, § 296-48-3030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3031.] Repealed by Order 75-20, filed 7/16/75.

296-48-3041 Separation. [Order 68-4, § 296-48-3040, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3041.] Repealed by Order 75-20, filed 7/16/75.

296-48-3045 Protection and insulation. [Order 68-4, § 296-48-3045, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3051 Overcurrent protection and mounting. [Order 68-4, § 296-48-3050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3051.] Repealed by Order 75-20, filed 7/16/75.

296-48-3055 Identification. [Order 70-2, § 296-48-3055, filed 4/27/70; Order 68-4, § 296-48-3055, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3065 Application. [Order 70-2, § 296-48-3065, filed 4/27/70; Order 68-4, § 296-48-3065, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3066 Materials and equipment. [Order 70-2, § 296-48-3066, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-3071 Receptacle outlets required. [Order 70-2, § 296-48-3071, filed 4/27/70; Order 68-4, § 296-48-3070, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3071.] Repealed by Order 76-26, filed 8/23/76.

296-48-3072 Ground-fault circuit protection. [Order 75-4, § 296-48-3072, filed 3/5/75.] Repealed by Order 76-26, filed 8/23/76.

296-48-3075 Branch circuits required. [Order 71-11, § 296-48-3075, filed 10/8/71; Order 70-2, § 296-48-3075, filed 4/27/70; Order 68-4, § 296-48-3075, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3081 Calculations for lighting and appliance load. [Order 70-2, § 296-48-3081, filed 4/27/70; Order 68-4, § 296-48-3080, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3081.] Repealed by Order 76-26, filed 8/23/76.

296-48-3085 Branch circuit panelboard. [Order 70-2, § 296-48-3085, filed 4/27/70; Order 68-4, § 296-48-3085, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3091 Identification. [Order 68-4, § 296-48-3090, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3091.] Repealed by Order 76-26, filed 8/23/76.

296-48-3095 Circuit breakers and fuses. [Order 68-4, § 296-48-3095, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3098 Conductors in outlet boxes. [Order 70-2, § 296-48-3098, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4001 General. [Order 68-4, § 296-48-4000, filed 5/3/68, effective 7/1/68. Codified as WAC 296-48-4001.] Repealed by Order 76-26, filed 8/23/76.

296-48-4005 Power supply assembly. [Order 70-2, § 296-48-4005, filed 4/27/70; Order 68-4, § 296-48-4005, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4011 Attachment-plug cap. [Order 70-2, § 296-48-4011, filed 4/27/70; Order 68-4, § 296-48-4010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4011.] Repealed by Order 76-26, filed 8/23/76.

296-48-4015 Overhead and undervehicle feeder assemblies. [Order 70-2, § 296-48-4015, filed 4/27/70; Order 68-4, § 296-48-4015, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4021 Identification of power supply connection. [Order 70-2, § 296-48-4021, filed 4/27/70; Order 68-4, § 296-48-4020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4021.] Repealed by Order 76-26, filed 8/23/76.

296-48-4025 Location power supply assembly. [Order 70-2, § 296-48-4025, filed 4/27/70; Order 68-4, § 296-48-4025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4031 Location—Permanent wiring method. [Order 68-4, § 296-48-4030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4031.] Repealed by Order 76-26, filed 8/23/76.

296-48-4051 Protection and installation. [Order 70-2, § 296-48-4051, filed 4/27/70; Order 68-4, § 296-48-4050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4051.] Repealed by Order 76-26, filed 8/23/76.

296-48-4055 Expandable or multiple vehicles. [Order 70-2, § 296-48-4055, filed 4/27/70; Order 68-4, § 296-48-4055, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4061 Under chassis wiring (exposed to weather). [Order 70-2, § 296-48-4061, filed 4/27/70; Order 68-4, § 296-48-4060, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4061.] Repealed by Order 76-26, filed 8/23/76.

296-48-4062 Conductors and outlet boxes. [Order 70-2, § 296-48-4062, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4063 Painting of wiring. [Order 70-2, § 296-48-4063, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4064 Connection of terminals and splices. [Order 70-2, § 296-48-4064, filed 4/27/70; Order 68-4, § 296-48-4065, filed 5/31/68, effective 7/1/68. Formerly WAC 296-48-4065

relating to splices in grounding. Conductor now codified as WAC 296-48-4064 (part).] Repealed by Order 76-26, filed 8/23/76.

296-48-4065 Wall switches. [Order 70-2, § 296-48-4065, filed 4/27/70. Formerly WAC 296-48-4065 relating to splices in grounding conductor see WAC 296-48-4064.] Repealed by Order 76-26, filed 8/23/76.

296-48-4066 Receptacles. [Order 70-2, § 296-48-4066, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4075 Lighting fixtures. [Order 68-4, § 296-48-4075, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4081 Shower fixtures. [Order 70-2, § 296-48-4081, filed 4/27/70; Order 68-4, § 296-48-4080, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4081.] Repealed by Order 76-26, filed 8/23/76.

296-48-4085 Equipment mounting. [Order 68-4, § 296-48-4085, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4091 Outdoor fixtures and equipment. [Order 68-4, § 296-48-4090, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4091.] Repealed by Order 76-26, filed 8/23/76.

296-48-5001 Panelboard grounding. [Order 70-2, § 296-48-5001, filed 4/27/70; Order 68-4, § 296-48-5000, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5001.] Repealed by Order 76-26, filed 8/23/76.

296-48-5005 Grounded conductor (neutral). [Order 68-4, § 296-48-5005, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-5011 Appliance grounding. [Order 68-4, § 296-48-5010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5011.] Repealed by Order 76-26, filed 8/23/76.

296-48-5015 Interior grounding. [Order 68-4, § 296-48-5015, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-5021 Grounding of noncurrent-carrying metal parts. [Order 68-4, § 296-48-5020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5021.] Repealed by Order 76-26, filed 8/23/76.

296-48-5025 120-volt or 120/240-volt. [Order 70-2, § 296-48-5025, filed 4/27/70; Order 68-4, § 296-48-5025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-5031 Battery and low voltage circuits. [Order 70-2, § 296-48-5031, filed 4/27/70; Order 68-4, § 296-48-5030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5031.] Repealed by Order 75-20, filed 7/16/75.

296-48-6001 Examination of equipment for safety. [Order 70-2, § 296-48-6001, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-6101 Minimum requirements. [Order 70-10, § 296-48-6101, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6111 Structural analysis. [Order 70-10, § 296-48-6111, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6115 Standards for equipment installations. [Order 70-10, § 296-48-6115, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6121 Structural requirements. [Order 70-10, § 296-48-6121, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6125 Design loads. [Order 70-10, § 296-48-6125, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6131 Wind loads. [Order 70-10, § 296-48-6131, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6135 Roof loads. [Order 70-10, § 296-48-6135, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6141 Walls. [Order 70-10, § 296-48-6141, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6145 Firestopping. [Order 70-10, § 296-48-6145, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6151 Interior partition. [Order 70-10, § 296-48-6151, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6155 Floors. [Order 70-10, § 296-48-6155, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6161 Design load deflections. [Order 70-10, § 296-48-6161, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6165 Ultimate load tests. [Order 70-10, § 296-48-6165, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6171 Chassis assembly. [Order 70-10, § 296-48-6171, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6175 Basic structural integrity. [Order 70-10, § 296-48-6175, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6181 Roof rafter or truss test procedure. [Order 70-10, § 296-48-6181, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6185 Weather resistance. [Order 70-10, § 296-48-6185, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6191 Interior walls, partitions and ceilings. [Order 73-17, § 296-48-6191, filed 10/12/73; Order 70-10, § 296-48-6191, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6195 Rodent resistance. [Order 70-10, § 296-48-6195, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6201 Heat loss. [Order 73-17, § 296-48-6201, filed 10/12/73; Order 70-10, § 296-48-6201, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6205 Room and hallway sizes. [Order 73-17, § 296-48-6205, filed 10/12/73; Order 70-10, § 296-48-6205, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6211 Ceiling height. [Order 73-17, § 296-48-6211, filed 10/12/73; Order 70-10, § 296-48-6211, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6215 Light and ventilation. [Order 73-17, § 296-48-6215, filed 10/12/73; Order 71-11, § 296-48-6215, filed 10/8/71; Order 70-10, § 296-48-6215, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6221 Exit facilities. [Order 73-17, § 296-48-6221, filed 10/12/73; Order 71-11, § 296-48-6221, filed 10/8/71; Order 70-10, § 296-48-6221, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6222 Interior privacy. [Order 73-17, § 296-48-6222, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

296-48-6223 Interior passage. [Order 73-17, § 296-48-6223, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

296-48-6225 Windows. [Order 73-17, § 296-48-6225, filed 10/12/73; Order 70-10, § 296-48-6225, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6226 Mobile home fire warning equipment. [Order 73-17, § 296-48-6226, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

Appendix A Flexural rigidity chart. Figures 1, 2, 3, and 4. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

Table 1 Accepted engineering practice standards. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

Appendix B Heat loss. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

Appendix C Table 1 maximum allowable areas of glass table 2 adjustment factors relative resistance to wind loads table 3 glass dimensional tolerances table 4 glazing relative to specific hazardous locations. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

Chapter 296-48A
STANDARDS FOR RECREATIONAL VEHICLES

296-48A-001 Standards for recreational vehicles. [Order 75-21, § 296-48A-001, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-200 Individual vents. [Order 75-21, § 296-48A-200, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-400 Sizing and capacity of gas piping. [Order 75-21, § 296-48A-400, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-405 Description of tables. [Order 75-21, § 296-48A-405, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-410 Use of capacity tables. [Order 75-21, § 296-48A-410, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-600 Low-voltage wiring materials. [Order 75-21, § 296-48A-600, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-605 Power-supply assembly. [Order 75-21, § 296-48A-605, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-610 Ground-fault circuit protection. [Order 75-21, § 296-48A-610, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-615 Labeling at the electrical entrance. [Order 75-21, § 296-48A-615, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-700 Administrative—Authority for recreational vehicle code. [Order 76-26, § 296-48A-700, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-750 Conditions of reciprocity. [Order 76-26, § 296-48A-750, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-755 Agreements with out-of-state jurisdictions. [Order 76-26, § 296-48A-755, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-770 Definitions. [Order 76-26, § 296-48A-770, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-780 Enforcement. [Order 76-26, § 296-48A-780, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-800 Approvals, inspections, quality control, identification. [Order 76-26, § 296-48A-800, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-990 Appendix. [Order 75-21, Appendix (codified as WAC 296-48A-990), filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

Chapter 296-48B
STANDARDS FOR COMMERCIAL COACHES

296-48B-001 Administrative authority for commercial coach code. [Order 76-26, § 296-48B-001, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-002 Administrative authority for commercial coach code—Enforcement. [Order 76-26, § 296-48B-002, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-005 General. [Order 75-40, § 296-48B-005, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-006 Approvals, inspections, quality control, identification. [Order 76-26, § 296-48B-006, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-009 Definitions incorporated by reference. [Order 76-26, § 296-48B-009, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-010 Definitions. [Order 76-26, § 296-48B-010, filed 8/23/76; Order 75-40, § 296-48B-010, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-015 Minimum requirements. [Order 75-40, § 296-48B-015, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-020 Structural analysis. [Order 75-40, § 296-48B-020, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-025 Standards for equipment and installations. [Order 76-26, § 296-48B-025, filed 8/23/76; Order 75-40, § 296-48B-025, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-030 Structural design—Requirements. [Order 75-40, § 296-48B-030, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-032 New materials and methods. [Order 75-40, § 296-48B-032, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-035 Design dead loads. [Order 75-40, § 296-48B-035, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-040 Design live loads. [Order 76-26, § 296-48B-040, filed 8/23/76; Order 75-40, § 296-48B-040, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-050 Standard wind. [Order 75-40, § 296-48B-050, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-055 Roof loads. [Order 75-40, § 296-48B-055, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-060 Snow loads. [Order 75-40, § 296-48B-060, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-065 Posting design loads. [Order 75-40, § 296-48B-065, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-068 Design load deflection. [Order 75-40, § 296-48B-068, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-070 Fastening of structural systems. [Order 75-40, § 296-48B-070, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-075 Instructions. [Order 75-40, § 296-48B-075, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-080 Walls. [Order 75-40, § 296-48B-080, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-085 Drilling or notching of wood wall structural members. [Order 75-40, § 296-48B-085, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-090 Firestopping. [Order 76-26, § 296-48B-090, filed 8/23/76; Order 75-40, § 296-48B-090, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-095 Interior walls and partitions. [Order 75-40, § 296-48B-095, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-100 Floors. [Order 76-26, § 296-48B-100, filed 8/23/76; Order 75-40, § 296-48B-100, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-105 Drilling or notching of wood joist structural members. [Order 75-40, § 296-48B-105, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-115 Roof trusses. [Order 75-40, § 296-48B-115, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-120 Structural load test. [Order 75-40, § 296-48B-120, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-125 Roof coverings. [Order 76-26, § 296-48B-125, filed 8/23/76; Order 75-40, § 296-48B-125, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-140 Flame-spread limitations and combustibility. [Order 76-26, § 296-48B-140, filed 8/23/76; Order 75-40, § 296-48B-140, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-142 Kitchen cabinet protection. [Order 75-40, § 296-48B-142, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-143 Carpeting. [Order 75-40, § 296-48B-143, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-145 Undervehicle closure material. [Order 75-40, § 296-48B-145, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-150 Heat loss. [Order 75-40, § 296-48B-150, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-160 Bathroom. [Order 75-40, § 296-48B-160, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-165 Glass and glazed openings. [Order 75-40, § 296-48B-165, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-175 Fire warning equipment—Automatic smoke detectors. [Order 75-40, § 296-48B-175, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-177 Room and hallway sizes. [Order 76-26, § 296-48B-177, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-178 Ceiling height. [Order 76-26, § 296-48B-178, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-179 Light and ventilation. [Order 76-26, § 296-48B-179, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-180 Exit facilities. [Order 76-26, § 296-48B-180, filed 8/23/76; Order 75-40, § 296-48B-180, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-185 Weather resistance. [Order 76-26, § 296-48B-185, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-190 Windstorm protection. [Order 76-26, § 296-48B-190, filed 8/23/76; Order 75-40, § 296-48B-190, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19001 Table—Ties required per side of single wide (1) commercial coach. [Order 76-26, Table (codified as WAC 296-48B-19001), filed 8/23/76; Order 75-40, Table, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19002 Table I—Appendix CC—Accepted engineering practice standards. [Order 75-40, Table I—Appendix CC (codified as WAC 296-48B-19002), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19003 Table II—Appendix CC—Glazing in hazardous locations. [Order 75-40, Table II—Appendix CC (codified as WAC 296-48B-19003), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19004 Table III—Appendix CC—Minimum uniformly distributed live loads. [Order 75-40, Table III—Appendix CC (codified as WAC 296-48B-19004), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19005 Table IV—Appendix CC—Concentrated live loads. [Order 75-40, Table IV—Appendix CC (codified as WAC 296-48B-19005), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-193 Interior privacy. [Order 76-26, § 296-48B-193, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-196 Interior passage. [Order 76-26, § 296-48B-196, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-200 Electrical—General. [Order 75-40, § 296-48B-200, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-210 Definitions. [Order 75-40, § 296-48B-210, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-215 Low-voltage systems—Low-voltage circuits. [Order 75-40, § 296-48B-215, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-220 Wiring materials—Combination electrical systems. [Order 75-40, § 296-48B-220, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-225 Generator installations—Mounting. [Order 75-40, § 296-48B-225, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-230 Calculations—Branch circuit and feeder calculations. [Order 75-40, § 296-48B-230, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-235 Disconnecting means and branch-circuit protective equipment—General. [Order 75-40, § 296-48B-235, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-245 Power supply—Feeder assembly equipment. [Order 75-40, § 296-48B-245, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-250 Identification of feeder assembly connection. [Order 75-40, § 296-48B-250, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-255 Wiring methods—Wiring of expandable or multiple units. [Order 75-40, § 296-48B-255, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-260 Under-chassis wiring. [Order 75-40, § 296-48B-260, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-265 Rodent resistance. [Order 75-40, § 296-48B-265, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-270 Electrical equipment—Lighting fixtures. [Order 75-40, § 296-48B-270, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-275 Equipment mounting. [Order 75-40, § 296-48B-275, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-280 Outdoor outlets, fixtures, air cooling equipment, etc. [Order 75-40, § 296-48B-280, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-285 Grounding—General. [Order 75-40, § 296-48B-285, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-290 Switch and receptacle plates. [Order 75-40, § 296-48B-290, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-295 Testing—Dielectric strength test. [Order 75-40, § 296-48B-295, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-400 Mechanical—General. [Order 75-40, § 296-48B-400, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-405 Mechanical—Definitions. [Order 75-40, § 296-48B-405, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-410 LPG equipment and installations—Construction of containers. [Order 75-40, § 296-48B-410, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-415 Location of LP-Gas containers and systems. [Order 75-40, § 296-48B-415, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-420 LP-Gas container valves and accessories. [Order 75-40, § 296-48B-420, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-425 LP-Gas safety devices. [Order 75-40, § 296-48B-425, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-430 LP-Gas system enclosure and mounting. [Order 75-40, § 296-48B-430, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-435 LP-Gas system design and service line pressure. [Order 75-40, § 296-48B-435, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-440 Electrical equipment. [Order 75-40, § 296-48B-440, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-445 Gas piping systems—General. [Order 75-40, § 296-48B-445, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-450 Piping design. [Order 75-40, § 296-48B-450, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-455 Materials. [Order 75-40, § 296-48B-455, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-460 Expandable or multiple commercial coaches. [Order 75-40, § 296-48B-460, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-465 System sizing—Gas pipe sizing. [Order 75-40, § 296-48B-465, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-467 Sizing and capacity of gas piping. [Order 75-40, § 296-48B-467, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-468 Description of tables. [Order 75-40, § 296-48B-468, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-469 Use of capacity tables. [Order 75-40, § 296-48B-469, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-46901 Table H-2—Part I and Part II. [Order 75-40, Table H-2—Part I and Part II (codified as WAC 296-48B-46901), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-470 Joints and installation—Joints for gas pipe. [Order 75-40, § 296-48B-470, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-475 Tubing joints. [Order 75-40, § 296-48B-475, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-480 Concealed tubing. [Order 75-40, § 296-48B-480, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-485 Pipe-joint compound. [Order 75-40, § 296-48B-485, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-490 Concealed joints. [Order 75-40, § 296-48B-490, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-500 Hangers and supports. [Order 75-40, § 296-48B-500, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-505 Electrical ground. [Order 75-40, § 296-48B-505, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-510 Identification of gas supply connections. [Order 75-40, § 296-48B-510, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-515 Gas piping system openings. [Order 75-40, § 296-48B-515, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-520 Appliance connections. [Order 75-40, § 296-48B-520, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-525 Valves. [Order 75-40, § 296-48B-525, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-530 Testing for leakage—Before appliances are connected. [Order 75-40, § 296-48B-530, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-535 After appliances are connected. [Order 75-40, § 296-48B-535, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-540 Rodent resistance. [Order 75-40, § 296-48B-540, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-550 Oil piping systems—General. [Order 75-40, § 296-48B-550, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-555 Oil piping systems—Expandable or multiple commercial coaches. [Order 75-40, § 296-48B-555, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-560 Oil piping systems—Materials. [Order 75-40, § 296-48B-560, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-565 Oil piping systems—Size of oil piping. [Order 75-40, § 296-48B-565, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-570 Oil piping systems—Joints for oil piping. [Order 75-40, § 296-48B-570, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-575 Oil piping systems—Tubing joints. [Order 75-40, § 296-48B-575, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-580 Oil piping systems—Pipe-joint compound. [Order 75-40, § 296-48B-580, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-585 Oil piping systems—Couplings. [Order 75-40, § 296-48B-585, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-590 Oil piping systems—Grade of piping. [Order 75-40, § 296-48B-590, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-595 Oil piping systems—Strap hangers. [Order 75-40, § 296-48B-595, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-598 Oil piping systems—Testing for leakage. [Order 75-40, § 296-48B-598, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-600 Appliances—Heat-producing. [Order 75-40, § 296-48B-600, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-610 Appliances—Installation. [Order 75-40, § 296-48B-610, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-615 Appliances—Venting, ventilation and combustion air. [Order 75-40, § 296-48B-615, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-620 Appliances—Clearance-general. [Order 75-40, § 296-48B-620, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-675 Safety devices—Water heater relief valves. [Order 75-40, § 296-48B-675, filed 12/4/75.] Repealed by 82-04-060

(Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-680 Air ducts—Duct material for circulating air supply system. [Order 75-40, § 296-48B-680, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-685 Air ducts—Sizing of ducts. [Order 75-40, § 296-48B-685, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-690 Air ducts—Airtightness of supply duct systems. [Order 75-40, § 296-48B-690, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-695 Air ducts—Expandable or multiple commercial coach connections. [Order 75-40, § 296-48B-695, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-720 Air ducts—Return air systems. [Order 75-40, § 296-48B-720, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-725 Air ducts—Joints and seams. [Order 75-40, § 296-48B-725, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-730 Air ducts—Supports. [Order 75-40, § 296-48B-730, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-735 Air ducts—Registers or grills. [Order 75-40, § 296-48B-735, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-740 Air ducts—Duct and plenum insulation. [Order 75-40, § 296-48B-740, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-800 Plumbing—Definitions. [Order 75-40, § 296-48B-800, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-805 Plumbing—General. [Order 75-40, § 296-48B-805, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-810 Plumbing—Location of water-supply connections. [Order 75-40, § 296-48B-810, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-815 Plumbing—Tub and shower enclosures. [Order 75-40, § 296-48B-815, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-820 Drainage—Location of drain outlets. [Order 75-40, § 296-48B-820, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-825 Drainage—Cap or plug. [Order 75-40, § 296-48B-825, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-830 Drainage—Clearance from drain outlet. [Order 75-40, § 296-48B-830, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-835 Drainage—Drainage systems materials. [Order 75-40, § 296-48B-835, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

Chapter 296-51
AMMONIUM NITRATE PRECAUTIONS

296-51-010 Storage and handling of ammonium nitrate—Posting of caution placards. [Rule 1.010, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-020 Storage and handling of ammonium nitrate—General precautions. [Rule 1.020, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-030 Storage and handling of ammonium nitrate—Storage of bags. [Rule 1.030, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-040 Storage and handling of ammonium nitrate—Storage in noncombustible type buildings. [Rule 1.040, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-050 Storage and handling of ammonium nitrate—Open lights or flame. [Rule 1.050, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-060 Storage and handling of ammonium nitrate—Bag handling. [Rule 1.060, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-070 Storage and handling of ammonium nitrate—Loosening of caked ammonium nitrate. [Rule 1.070, effective 11/1/62; § 2, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-100 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Mixing with sensitizing materials. [Rule 2.010, effective 11/1/62; § 6f1, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-110 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Marking of bags or containers. [Rule 2.020, effective 11/1/62; § 6f2, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-120 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Storage of raw ammonium nitrate. [Rule 2.030, effective 11/1/62; § 1b, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-130 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Open drains and piping—Warehouse floors. [Rule 2.040, effective 11/1/62; § 3a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-140 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Floors in processing plant. [Rule 2.050, effective 11/1/62; § 3b, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-150 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Fuel storage. [Rule 2.060, effective 11/1/62; § 1c and 3b, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-160 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Heat. [Rule 2.070, effective 11/1/62; § 3d, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-170 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Smoking. [Rule 2.080, effective 11/1/62; § 3j, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-180 Processing plant for sensitizing ammonium nitrate operation and storage requirements—One day's production. [Rule 2.090, effective 11/1/62; § 3f, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-200 General provisions—Unusual compositions. [Rule 3.010, effective 11/1/62; § 3e, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-210 General provisions—Mixing for above ground use at jobsite. [Rule 3.020, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-220 General provisions—Ammonium nitrate bag accumulation prohibited. [Rule 3.030, effective 11/1/62; § 3k, filed 8/8/60 and 5/1/62; § 6e(3a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-230 General provisions—Cleanliness. [Rule 3.040, effective 11/1/62; Rule 3l, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-240 General provisions—Proper stacking. [Rule 3.050, effective 11/1/62; § 3m, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-250 General provisions—Mobile equipment. [Rule 3.060, effective 11/1/62; § 4a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-260 General provisions—Volatile fuels. [Rule 3.070, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-270 General provisions—Crude oil and crankcase oil prohibited. [Rule 3.080, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-280 General provisions—Misfires (other than underground). [Rule 3.090, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-300 General storage requirements—Standard magazine construction. [Rule 4.010, effective 11/1/62; § 3h, filed

8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-310 General storage requirements—Calculation of distance limitations. [Rule 4.020, effective 11/1/62; § 1a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-320 General storage requirements—Storage of processed compositions. [Rule 4.030, effective 11/1/62; § 1d, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-330 General storage requirements—Ventilation of storage areas. [Rule 4.040, effective 11/1/62; § 3c, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-340 General storage requirements—Storage in vans. [Rule 4.050, effective 11/1/62; § 3g, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-350 General storage requirements—Storage van requirements. [Rule 4.060, effective 11/1/62; § 3i, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-360 General storage requirements—Limitation of amount of fuel sensitized ammonium nite at blasting site. [Rule 4.070, effective 11/1/62; § 5a, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-400 Underground blasting operations—Permit required—Must be renewed annually—Posted on premises. [Rule 5.010, effective 11/1/62; § 6e, filed 8/8/60; § 6e, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-410 Underground blasting operations—Rating of blasting agents. [Rule 5.020, effective 11/1/62; § 6f, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-420 Underground blasting operations—Loading of holes. [Rule 5.030, effective 11/1/62; § 6e(1a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-430 Underground blasting operations—Priming. [Rule 5.040, effective 11/1/62; § 6a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-440 Underground blasting operations—Grounding. [Rule 5.050, effective 11/1/62; § 6e(2a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-450 Underground blasting operations—Firing. [Rule 5.060, effective 11/1/62; § 6e(5a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-460 Underground blasting operations—Misfire. [Rule 5.070, effective 11/1/62; § 6b & 6c, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-470 Underground blasting operations—Fumes. [Rule 5.080, effective 11/1/62; § 6d, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-480 Underground blasting operations—Wet holes. [Rule 5.090, effective 11/1/62; § 6e(4a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-490 Underground blasting operations—Liners prohibited. [Rule 5.100, effective 11/1/62; § 6e(4a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-53
SAFETY REQUIREMENTS FOR EXPLOSIVE-ACTUATED FASTENING TOOLS

296-53-010, 296-53-020, 296-53-030, 296-53-040, 296-53-050, 296-53-060, 296-53-070, 296-53-080, 296-53-090, 296-53-100, 296-53-110. [Paragraphs I through XI, effective 8/1/52, filed 3/23/60.] Repealed by Order 68-6, filed 10/24/68, effective 12/1/68.

296-53-200 Scope. [Order 68-6, § 296-53-200, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-210 Purpose. [Order 68-6, § 296-53-210, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-220 Exception. [Order 68-6, § 296-53-220, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-230 References to other codes. [Order 68-6, § 296-53-230, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-240 Effective date. [Order 68-6, § 296-53-240, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-250 Definitions. [Order 68-6, § 296-53-250, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-260 Design requirements—High velocity tools. [Order 68-6, § 296-53-260, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-270 Low velocity piston tools. [Order 68-6, § 296-53-270, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-280 Hammer-operated piston tools—Low velocity type. [Order 68-6, § 296-53-280, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-290 Requirements for loads and fasteners. [Order 68-6, § 296-53-290, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-300 Approvals. [Order 68-6, § 296-53-300, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-310 Operation. [Order 68-6, § 296-53-310, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-320 Servicing. [Order 68-6, § 296-53-320, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-330 Qualification and certification of operators. [Order 68-6, § 296-53-330, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-340 Storage of explosive-actuated tools, instruction books, cleaning kits, and tools. [Order 68-6, § 296-53-340, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-350 Use low velocity tools when possible. [Order 68-6, § 296-53-350, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

Chapter 296-58
SAFETY STANDARDS—METALS INDUSTRY

296-58-001 Foreword. [Foreword, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-004 Practical application of standards. [Practical application paragraphs, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-010 Safe place standards. [Standard 1, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-015 Safe practice standards. [Standard 2, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-020 Standard safeguard defined. [Standard 3, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-025 Approved. [Standard 4, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-030 Substantial. [Standard 5, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-035 Exposed to contact. [Standard 6, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-040 Warning placards. [Standard 7, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-045 Wooden guards. [Standard 8, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-050 Metal guards—Framework. [Standard 9, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-055 Standard railings. [Standard 10, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-060 Fillers. [Standard 11, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-065 Filling material for metal guards. [Standard 12, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-070 Safeguards must not admit rod or pipes. [Standard 13, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7,

filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-075 Lighting and illumination. [Standard 14, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-080 Diffusion and distribution of artificial and natural light. [Standard 15, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-085 Foundations. [Standard 16, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-090 Housekeeping. [Standard 17, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-095 Plant location. [Standard 18, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-100 Power transmission equipment and machine parts. [Standard 19, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-105 Saw guarding (metal and wood). [Standard 20, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-110 Machine power control. [Standard 21, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-115 Loose pulleys and cone pulleys. [Standard 22, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-120 Exposure to harmful atmospheric conditions and exposure to harmful materials. [Standard 23, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-125 Nontoxic dusts. [Standard 24, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-130 Methods of control. [Standard 25, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-135 Minimum general requirements for electrical safety. [Standard 26, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-140 Helpers around machines shall receive instructions. [Standard 27, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-145 Machines shall be stopped in making repairs. [Standard 28, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-150 Torn and loose clothing. [Standard 29, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-155 Personal protective equipment and clothing. [Standard 30, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-160 Sterilization of equipment. [Standard 31, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-165 Caps or other head covering. [Standard 32, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-170 Prevention of industrial disease. [Standard 33, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-175 Carbon monoxide gas. [Standard 34, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-180 Acids and chemicals. [Standard 35, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-185 Steam pipes. [Standard 36, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-190 Hot liquid vats—Location of. [Standard 37, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-195 Vats and tanks guarded. [Standard 38, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-200 Building—Floors. [Standard 39, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-205 Stairways. [Standard 40, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-210 Fire escapes. [Standard 41, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-215 Swinging doors—Windows required. [Standard 42, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-220 Doorways near railroad tracks and roadways. [Standard 43, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-225 Platforms and runways. [Standard 44, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-230 Floor openings. [Standard 45, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-235 Trestles and walks in industrial plants. [Standard 46, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-240 Hoistways. [Standard 47, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-245 Elevators. [Standard 48, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-250 Conveyors. [Standard 49, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-255 Revolving drums and cylinders. [Standard 50, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-260 Means to prevent slipping. [Standard 51, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-265 Polishing and buffing wheels. [Standard 52, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-270 Cranes and hoists definitions. [Standard 53, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-275 All cranes—Construction. [Standard 54, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-280 All cranes—Electrical equipment. [Standard 55, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-285 All cranes—Chains and wire rope. [Standard 56, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-290 All cranes—Floor operated cranes. [Standard 57, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-295 All cranes—Operators. [Standard 58, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-300 All cranes—Signalmen. [Standard 59, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-305 All cranes—Repairmen. [Standard 60, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-310 All cranes—Construction requirements. [Standard 61, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-315 All cranes—Platforms and footwalks. [Standard 62, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-320 All cranes—Cages. [Standard 63, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-325 All cranes—Rail stops, bumpers and fenders. [Standard 64, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-330 Special requirements for gantry cranes. [Standard 65, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-335 Requirements for A-frames, mobile cranes and excavation equipment, loaders, and locomotive cranes and equipment. [Standard 66, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-340 Construction, operation and maintenance—Chain and electric hoists. [Standard 67, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-345 Construction, operation and maintenance—Monorail hoists. [Standard 68, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-350 Construction, operation and maintenance—Air hoists. [Standard 69, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-355 Jib, pillar, and portable floor cranes, crabs and winches. [Standard 70, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-360 Fibre rope. [Standard 71, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-365 Wire rope clamps—Thimbles—Sheaves. [Standard 72, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-370 Wire rope slings, hooks. [Standard 73, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-375 Ladles and crucibles. [Standard 74, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-380 Molding and casting areas. [Standard 75, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-385 Drop guarding. [Standard 76, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-390 Wet materials. [Standard 77, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-395 Explosive materials. [Standard 78, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-400 Material storage. [Standard 79, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-405 Shears. [Standard 80, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-410 Power vehicles. [Standard 81, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-415 Sanitation. [Standard 82, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-420 Washroom and locker. [Standard 83, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-425 Grinding wheels. [Standard 84, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-430 Spray rooms, spray booths, etc. [Standard 85, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-435 Care and use of ladders. [Standard 86, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-440 Fixed ladders. [Standard 87, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-445 Ladder cage. [Standard 88, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-450 Landings. [Standard 89, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-455 Machine, forging and metalworking shops. [Standard 90, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-460 Power presses and drop hammers. [Standard 91, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

Chapter 296-60
SAFETY STANDARDS—METALLIC AND NONMETALLIC MINES

296-60-010, 296-60-015, 296-60-020, 296-60-025, 296-60-030, 296-60-035, 296-60-040, 296-60-045, 296-60-050, 296-60-055, 296-60-060, 296-60-065, 296-60-070, 296-60-075, 296-60-080, 296-60-085, 296-60-090, 296-60-095, 296-60-100, 296-60-105, 296-60-110, 296-60-115, 296-60-120, 296-60-125, 296-60-130, 296-60-135, 296-60-140, 296-60-145, 296-60-150, 296-60-155, 296-60-160, 296-60-165, 296-60-166, 296-60-170, 296-60-175, 296-60-180, 296-60-185, 296-60-190, 296-60-195, 296-60-200, 296-60-205, 296-60-210, 296-60-215, 296-60-220, 296-60-225, 296-60-230, 296-60-235, 296-60-240, 296-60-245, 296-60-250, 296-60-255, 296-60-260, 296-60-265, 296-60-268, 296-60-270, 296-60-275, 296-60-280, 296-60-285, 296-60-290, 296-60-295, 296-60-300, 296-60-305, 296-60-310, 296-60-315, 296-60-320, 296-60-325, 296-60-330, 296-60-335, 296-60-340, 296-60-345, 296-60-350, 296-60-355, 296-60-358, 296-60-360, 296-60-365, 296-60-370, 296-60-375, 296-60-380, 296-60-385. [Rules, filed 3/23/60, effective 5/1/48.] Repealed by Order 72-1, filed 2/25/72, effective 4/1/72.

Chapter 296-64
SAFETY STANDARDS—OCCUPATIONAL DISEASES

296-64-001 Preface. [Preface, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-002 Introduction. [Introduction, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-005 Foreword. [Foreword, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-010 Safety standards relating to dusts, fumes, vapors and gases in industry—Application. [Standard 1, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-020 Definitions. [Standard 2, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-030 Control of atmospheric contaminants. [Standard 3, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-031 Threshold limit values. [Appendix 1, filed 3/23/60.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-040 Specifications of air requirements per worker in industrial plants. [Standard 4, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-050 Local exhaust ventilation. [Standard 5, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-060 Personal protective equipment. [Standard 6, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-070 Substitution of nonhazardous equipment, material or process. [Standard 7, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-080 Dust allaying media. [Standard 8, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-090 Isolation of hazardous operations. [Standard 9, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-100 Sanitation and cleanliness. [Standard 10, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-110 Rubber boots. [Standard 11, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-120 Applying paint by the spray method in fixed finishing shops. [Spray paint in fixed finishing shops rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-130 Galvanizing. [Galvanizing rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-140 Workmen exposed to silicosis. [Exposure to silicosis rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-150 Plywood manufacturing—Men handling glue (core) sections. [Plywood-glue (core) section rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-160 Auto repair and internal combustion engine adjusting plants. [Auto repair and internal combustion engine adjusting plant rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-170 Applying paint by the method of the spray, other than in fixed finishing shops. [Spray paint rules (other than in fixed finishing shops), effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-180 Wool weaving. [Wool weaving rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-190 Sea foods—Fresh and canning industry employees. [Sea food rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-200 Paint and kalsomine manufacturing and handling. [Paint and kalsomine manufacturing and handling rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-210 Handling and emptying of sacks or barrels containing dry kalsomine, cement, sand-blasting sand and other like material except in manufacturing plants. [Paint and kalsomine sack and barrel rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-220 Shingle manufacturing. [Shingle manufacturing rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-230 Compressed air chambers, hard rock workers—Soft earth tunnels and open cuts. [Compressed air, hard rock, soft earth tunnels, and open cut rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-240 Electric and gas torch workers. [Electric and gas torch rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-250 Battery manufacturing and rebuilding. [Battery manufacturing and rebuilding rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-260 Power propelled trucks operated within buildings. [Power propelled truck rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-270 Polishing, grinding and buffing machine operators. [Polishing, grinding, and buffing rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-280 Plating and removal of plating, including acid dips. [Plating and stripping rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-290 Dry cleaning by use of any solvent, producing fumes, gasses or vapors injurious to health, including, but not limiting the same to, carbon tetrachloride, trichloroethylene, perchloroethylene and their sequel. [Dry cleaning rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-300 Lumber and timber treated with arsenic compounds and the handling thereof. [Arsenic treated lumber rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-400 Purpose and scope. [Standard I, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-405 Definitions. [Standard II, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-410 General requirements. [Standard III, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-415 General labeling requirements and attached appendices. [Standard IV, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-420 Container handling and storage. [Standard V, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-425 Exemptions. [Standard VI, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

Chapter 296-66
SAFETY STANDARDS—PAINTING AND DECORATING INDUSTRY

296-66-005 Foreword. [Foreword, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-010 Safety educational standards—Introduction. [§ A-1, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-015 Safety educational standards—Management's responsibility. [§ A-2, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-020 Safety educational standards—Employee's responsibility. [§ A-3, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-025 Safety educational standards—Safety inspector plan. [§ A-4, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-030 Safety educational standards—Settlement of disputes. [§ A-5, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-035 Safety educational standards—Safety committee plan. [§ A-6, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-040 Safety educational standards—Settlement of disputes. [§ A-7, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

Chapter 296-68
SAFETY STANDARDS—POWER PROPELLED TRUCKS

296-68-030 State inspector. [Rules E-1 and E-2, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-035 Safety meetings. [Rules F-1 through F-4, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-040 First-aid instruction and treatment of injured. [Rules G-1 through G-3, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-045 Safety standards—Relating to the use of power-propelled trucks used principally in warehouses and docks (housed)—Construction of equipment and operation thereof. [Rules 1 through 16, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

Chapter 296-70
TUNNELS, SHAFTS AND SUBWAYS—SAFETY STANDARDS

296-70-010 Definitions. [Part I, Definitions, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-020 Safety miner. [§ A, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-030 Minimum first-aid requirements. [§ B, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-040 Fire protection. [§ C, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-050 Safe practice standards. [Subsections D-1—D-30, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-060 Personal protective equipment and clothing. [Subsections D-31—D-34, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-070 Rock dust. [§ E, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-080 Ventilation. [§ F, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-090 Protection against atmospheric containments. [§ G, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-100 Shaft protection. [§ H, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-110 Ladders and stairways. [§ I, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-120 Hoisting engineer. [§ J, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-130 Hoisting. [§ K, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-140 Hoisting ropes. [§ L, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-150 Signals and means of communication. [§ M, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-160 Blasting. [§ N, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-170 Timbering. [§ O, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-180 Lighting. [§ P, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-190 Electrical equipment. [§ Q, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-200 Use of fuel burning equipment in underground work and other enclosed areas. [§ R, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-210 Sumps. [§ S, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-220 Sanitation. [§ T, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

Chapter 296-74
ANHYDROUS AMMONIA

296-74-010 Tanks. [Rules (part), filed 3/29/61.] Repealed by Order 75-9, filed 4/4/75.

296-74-020 Electrical. [Rules (part), filed 3/29/61.] Repealed by Order 75-9, filed 4/4/75.

296-74-030 Personnel protection. [Rules (part), filed 3/29/61.] Repealed by Order 75-9, filed 4/4/75.

Chapter 296-76
SAFETY STANDARDS—QUARRY OPERATIONS

296-76-005, 296-76-010, 296-76-015, 296-76-020, 296-76-025, 296-76-030, 296-76-035, 296-76-040, 296-76-045, 296-76-050, 296-76-055, 296-76-060, 296-76-065, 296-76-070, 296-76-075, 296-76-080, 296-76-085, 296-76-090, 296-76-095, 296-76-100, 296-76-105, 296-76-110, 296-76-115, 296-76-120, 296-76-125. [Rules, filed 3/29/61, effective 8/1/42.] Repealed by Order 72-1, filed 2/25/72, effective 4/1/72.

Chapter 296-80
SAFETY RULES GOVERNING THE CONSTRUCTION, OPERATION, MAINTENANCE AND INSPECTION OF INCLINED PASSENGER LIFTS

296-80-010 Scope. [Order 71-16, § 296-80-010, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-020 Definitions. [Order 71-16, § 296-80-020, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-030 Approval of plans and specifications. [Order 71-16, § 296-80-030, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-040 Runway enclosures. [Order 71-16, § 296-80-040, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-050 Landing enclosure. [Order 71-16, § 296-80-050, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-060 Enclosure clearances. [Order 71-16, § 296-80-060, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-070 Machine rooms. [Order 71-16, § 296-80-070, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-080 Machine supports and factors of safety. [Order 71-16, § 296-80-080, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-090 Car clearances. [Order 71-16, § 296-80-090, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-100 Counterweights when used. [Order 71-16, § 296-80-100, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-110 Landing doors or gates. [Order 71-16, § 296-80-110, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-120 Landing sills. [Order 71-16, § 296-80-120, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-130 Guide rails. [Order 71-16, § 296-80-130, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-140 Car enclosure. [Order 71-16, § 296-80-140, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-150 Safeties. [Order 71-16, § 296-80-150, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-160 Car speed governors. [Order 71-16, § 296-80-160, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-170 Machines. [Order 71-16, § 296-80-170, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-180 Terminal stopping and safety devices. [Order 71-16, § 296-80-180, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-190 Operation and control. [Order 71-16, § 296-80-190, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-200 Limits of speed. [Order 71-16, § 296-80-200, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-210 Ropes. [Order 71-16, § 296-80-210, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-220 Fastening car and counterweight ends of ropes. [Order 71-16, § 296-80-220, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-230 Rope tags. [Order 71-16, § 296-80-230, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-240 Buffers. [Order 71-16, § 296-80-240, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-250 Electrical equipment. [Order 71-16, § 296-80-250, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-260 Inspections and tests. [Order 71-16, § 296-80-260, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-270 Maintenance. [Order 71-16, § 296-80-270, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-280 Rack and pinion drive. [Order 71-16, § 296-80-280, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-290 Variances from requirements—How granted. [Order 71-16, § 296-80-290, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

Chapter 296-83
ELECTRIC MANLIFTS

296-83-010 Scope and application. [Rules (part), effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-015 Waiver and variance. [Rules (part), effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-020 Hoistway enclosures and landings. [§ I, Rule 1.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-025 Hoistway gates. [§ II, Rules 2.010-2.030, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-030 Elevator car. [§ III, Rules 3.010-3.020, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-035 Elevator doors. [§ IV, Rule 4.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-040 Counterweight, enclosures and fastenings. [§ V, Rule 5.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-045 Guide rails. [§ VI, Rule 6.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-050 Hoisting ropes. [§ VII, Rule 7.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-055 Space under hoistway. [§ VIII, Rule 8.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-060 Car safeties. [§ IX, Rule 9.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-065 Brakes. [§ X, Rule 10.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-070 Car controls and safety devices. [§ XI, Rules 11.010-11.060, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-075 Hoisting machine mechanisms. [§ XII, Rules 12.010-12.040, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-080 Elevator car and counterweight buffers. [§ XIII, Rules 13.010-13.020, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-085 General requirements. [§ XIV, Rules 14.010-14.030, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

Chapter 296-88
SAFETY RULES FOR GRAIN ELEVATOR OPERATIONS

296-88-001 Foreword. [Foreword, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-010 Scope and application. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-020 Purpose. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-030 General requirements. [§ I, Rules 1.010—1.110, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-040 Entering storage type bins. [§ II, Rule 2.010, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-050 Entering silo type bins. [§ III, Rules 3.010—3.030, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-060 Inspection of shovel equipment. [§ IV, Rules 4.010—4.030, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-070 Railroad car safety. [§ V, Rules 5.010—5.080, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-080 Manlifts. [§ VI, Rule 6.010, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-090 Fumigation. [§ VII, Rules 7.010—7.110, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-100 Insecticides and disinfectants. [§ VIII, Rules 8.010 and 8.020, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-110 Structural requirements and safeguards. [§ IX, Rules 9.010—9.070, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-120 Reference material. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-130 Glossary. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

Chapter 296-90
SAFETY REQUIREMENTS FOR CANTILEVER HOISTS

296-90-010 Material hoist platforms. [Order 71-7, § 296-90-010, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-020 Guard rails. [Order 71-7, § 296-90-020, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-030 Tower construction. [Order 71-7, § 296-90-030, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-040 Hoisting machines. [Order 71-7, § 296-90-040, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-050 Car platform enclosure. [Order 71-7, § 296-90-050, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-060 Landing platforms. [Order 71-7, § 296-90-060, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-070 No rider posting. [Order 71-7, § 296-90-070, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-080 Maintenance, inspection and test periods. [Order 71-7, § 296-90-080, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-090 Compliance with codes. [Order 71-7, § 296-90-090, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-100 Annual fee. [Order 71-7, § 296-90-100, filed 6/17/71.] Repealed by Order 74-36, filed 10/1/74.

Chapter 296-92
SAFETY RULES GOVERNING WHEELCHAIR LIFTING DEVICES

296-92-010 Definitions. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-010, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-020 Location, travel and speed. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-020, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-030 Guards and ramps. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-030, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-040 Supports. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-040, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-050 Frames, platforms and capacity. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-050, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-060 Controls and electrical equipment. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-060, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-070 Public assembly and institutional installations. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-070, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-080 Nonskid surfacing. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-080, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-090 Installation permits and acceptance inspections. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-090, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-100 Submission of plans for installation. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-100, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-110 Operation and maintenance manuals. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-110, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

Chapter 296-132
PUBLIC EMPLOYEES' COLLECTIVE BARGAINING RULES

296-132-005 Purpose. [Order 70-1, § 296-132-005, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-010 Policy. [Order 70-1, § 296-132-010, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-015 Construction. [Order 70-1, § 296-132-015, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-050 General. [Order 70-1, § 296-132-050, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-055 Petitioner. [Order 70-1, § 296-132-055, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-060 Authorized agent. [Order 70-1, § 296-132-060, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-065 Labor organization, lawful organization. [Order 70-1, § 296-132-065, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-070 Supervisor. [Order 70-1, § 296-132-070, filed 3/10/70.] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-075 Rule temporary. [Order 70-1, § 296-132-075, filed 3/10/70] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-100 Initiation. [Order 73-26, § 296-132-100, filed 12/10/73; Order 70-1, § 296-132-100, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-105 Filing of petition. [Order 73-26, § 296-132-105, filed 12/10/73; Order 70-1, § 296-132-105, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-110 Contents of petition—General. [Order 70-1, § 296-132-110, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-115 Contents of petition—Filed by public employees. [Order 73-26, § 296-132-115, filed 12/10/73; Order 70-1, § 296-132-115, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-120 Contents of petition—Filed by public employer. [Order 73-26, § 296-132-120, filed 12/10/73; Permanent and Emergency Order 70-13, § 296-132-120, filed 12/1/70, effective 1/1/71; Order 70-1, § 296-132-120, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-125 Intervention. [Order 73-26, § 296-132-125, filed 12/10/73; Order 70-1, § 296-132-125, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-130 Initial action. [Order 70-1, § 296-132-130, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-135 Petition—Amendments or withdrawal. [Order 70-1, § 296-132-135, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-140 Decertification. [Order 73-26, § 296-132-140, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-145 Severance. [Order 73-26, § 296-132-145, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-150 Determination of nature and scope. [Permanent and Emergency Order 70-13, § 296-132-150, filed 12/1/70, effective 1/1/71; Order 70-1, § 296-132-150, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-151 Unit clarification. [Order 73-26, § 296-132-151, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-152 Union membership. [Order 73-26, § 296-132-152, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-155 Special election. [Order 70-1, § 296-132-155, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-160 List of employees. [Order 73-26, § 296-132-160, filed 12/10/73; Order 70-1, § 296-132-160, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-165 Rule temporary. [Order 70-1, § 296-132-165, filed 3/10/70.] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-200 Selection of representation method. [Order 70-1, § 296-132-200, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-205 Two or more organizations. [Order 70-1, § 296-132-205, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-210 Examination of membership rolls. [Order 70-1, § 296-132-210, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-215 Use of authorization cards. [Order 70-1, § 296-132-215, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-220 Authorization cards—Acceptability. [Order 70-1, § 296-132-220, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-225 Conduct of election. [Order 73-26, § 296-132-225, filed 12/10/73; Order 70-1, § 296-132-225, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-226 Central filing—Arbitration and fact-finding. [Order 73-26, § 296-132-226, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-250 Certification. [Order 70-1, § 296-132-250, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-255 Noncertification. [Order 70-1, § 296-132-255, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-260 Time extensions. [Order 73-26, § 296-132-260, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-265 Bypass of steps. [Order 73-26, § 296-132-265, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-300 Unfair labor practice—Who may file. [Order 70-1, § 296-132-300, filed 3/10/70.]

296-132-301 Unfair labor practices—Who may file. [Order 73-26, § 296-132-301, filed 12/10/73; Permanent and Emergency Order 70-13, § 296-132-301, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-302 Unfair labor practice presumed—Change of conditions during bargaining. [Order 73-26, § 296-132-302, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-305 Filing of charges. [Order 70-1, § 296-132-305, filed 3/10/70.]

296-132-306 Filing of charges. [Permanent and Emergency Order 70-13, § 296-132-306, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-310 Investigation. [Order 70-1, § 296-132-310, filed 3/10/70.]

296-132-311 Investigation. [Permanent and Emergency Order 70-13, § 296-132-311, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-315 Remedies. [Order 70-1, § 296-132-315, filed 3/10/70.]

296-132-316 Remedies. [Permanent and Emergency Order 70-13, § 296-132-316, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-320 Rules temporary. [Order 70-1, § 296-132-320, filed 3/10/70.] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-350 Appeal procedure. [Order 73-26, § 296-132-350, filed 12/10/73; Order 70-1, § 296-132-350, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-360 Appeal briefs. [Order 73-26, § 296-132-360, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-370 Appeal briefs—Contents. [Order 73-26, § 296-132-370, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-380 Record on appeal. [Order 73-26, § 296-132-380, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

Chapter 296-150
FACTORY BUILT HOUSING AND GOVERNOR'S ADVISORY BOARD ADMINISTRATIVE RULES

296-150-010 Administration—Authority for factory-built housing code. [Order 73-25, § 296-150-010, filed 12/3/73; Order 71-1, § 296-150-010, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-015 Application and scope. [Order 73-25, § 296-150-015, filed 12/3/73; Order 71-1, § 296-150-015, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-020 Department services. [Order 73-25, § 296-150-020, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-025 Conditions of reciprocity. [Order 74-10, § 296-150-025, filed 4/8/74; Order 73-13, § 296-150-025, filed 7/31/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-026 Agreements with out-of-state jurisdictions. [Order 73-25, § 296-150-026, filed 12/3/73; Order 73-13, § 296-150-026, filed 7/31/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-027 Educational. [Order 73-25, § 296-150-027, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-050 Definitions—General. [Order 73-25, § 296-150-050, filed 12/3/73; Order 71-1, § 296-150-050, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-055 Definitions—A. Agency inspection. [Order 71-1, § 296-150-055, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-060 Definitions—Agency, listing. [Order 71-1, § 296-150-060, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-065 Definitions—Agency, testing. [Order 71-1, § 296-150-065, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-070 Definitions—Alteration or conversion. [Order 71-1, § 296-150-070, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-075 Definitions—Approved. [Order 71-1, § 296-150-075, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-080 Definitions—B. Building site. [Order 71-1, § 296-150-080, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-085 Definitions—C. Custom building. [Order 71-1, § 296-150-085, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-090 Definitions—D. Department. [Order 71-1, § 296-150-090, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-095 Definitions—Dwelling units. [Order 71-1, § 296-150-095, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-100 Definitions—E. Equipment. [Order 71-1, § 296-150-100, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-105 Definitions—F. Factory built housing (F.B.H.). [Order 71-1, § 296-150-105, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-110 Definitions—Field technical service. [Order 71-1, § 296-150-110, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-115 Definitions—First user. [Order 71-1, § 296-150-115, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-120 Definitions—G. No definition. [Order 71-1, § 296-150-120, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-130 Definitions—H. Habitable room. [Order 71-1, § 296-150-130, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-140 Definitions—I. Insignia. [Order 71-1, § 296-150-140, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-145 Definitions—Install. [Order 71-1, § 296-150-145, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-150 Definitions—J. No definition. [Order 71-1, § 296-150-150, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-160 Definitions—K. No definition. [Order 71-1, § 296-150-160, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-170 Definitions—L. Labeled. [Order 71-1, § 296-150-170, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-175 Definitions—Listed. [Order 71-1, § 296-150-175, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-180 Definitions—Local enforcement agency. [Order 71-1, § 296-150-180, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-185 Definitions—M. Manufacture. [Order 71-1, § 296-150-185, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-190 Definitions—N. No definition. [Order 71-1, § 296-150-190, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-200 Definitions—O. No definition. [Order 71-1, § 296-150-200, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-210 Definitions—P. No definition. [Order 71-1, § 296-150-210, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-220 Definitions—Q. No definition. [Order 71-1, § 296-150-220, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-230 Definitions—R. Residential building. [Order 71-1, § 296-150-230, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-240 Definitions—S. Substantially prefabricated or assembled. [Order 71-1, § 296-150-240, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-245 Definitions—System. [Order 71-1, § 296-150-245, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-250 Definitions—T. No definition. [Order 71-1, § 296-150-250, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-260 Definitions—U. No definition. [Order 71-1, § 296-150-260, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-270 Definitions—V. No definition. [Order 71-1, § 296-150-270, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-280 Definitions—W. No definition. [Order 71-1, § 296-150-280, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-290 Definitions—X. No definition. [Order 71-1, § 296-150-290, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-300 Definitions—Y. No definition. [Order 71-1, § 296-150-300, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-310 Definitions—Z. No definition. [Order 71-1, § 296-150-310, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-315 Construction requirements. [Order 73-25, § 296-150-315, filed 12/3/73; Order 71-1, § 296-150-315, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-320 Electrical requirements. [Order 75-5, § 296-150-320, filed 3/5/75; Order 73-25, § 296-150-320, filed 12/3/73; Order 71-1, § 296-150-320, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-325 Mechanical requirements. [Order 73-25, § 296-150-325, filed 12/3/73; Order 71-1, § 296-150-325, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-330 Plumbing requirements. [Order 73-25, § 296-150-330, filed 12/3/73; Order 71-1, § 296-150-330, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-335 Code research and materials evaluation service. [Order 73-25, § 296-150-335, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-400 Enforcement and administration—Enforcement. [Order 71-1, § 296-150-400, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-405 Enforcement and administration—Equipment and systems. [Order 71-1, § 296-150-405, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-410 Enforcement and administration—Department disapproval of listed or labeled equipment and systems. [Order 71-1, § 296-150-410, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-415 Alternates and equivalents. [Order 73-25, § 296-150-415, filed 12/3/73; Order 71-1, § 296-150-415, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-420 Inspections. [Order 73-25, § 296-150-420, filed 12/3/73; Order 71-1, § 296-150-420, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-423 Compliance control programs (CC). [Order 73-25, § 296-150-423, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-424 Factory-built housing—Compliance control (FBH-CC). [Order 73-25, § 296-150-424, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-425 Local enforcement agency—Compliance control (LEA-CC). [Order 73-25, § 296-150-425, filed 12/3/73; Order 71-1, § 296-150-425, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-430 Local enforcement agency application. [Order 73-25, § 296-150-430, filed 12/3/73; Order 71-1, § 296-150-430, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-435 Rights of local enforcement agency. [Order 73-25, § 296-150-435, filed 12/3/73; Order 71-1, § 296-150-435, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-440 The local enforcement agency responsibility. [Order 73-25, § 296-150-440, filed 12/3/73; Order 71-1, § 296-150-440, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-445 Manufacturer compliance control (M-CC). [Order 73-25, § 296-150-445, filed 12/3/73; Order 71-1, § 296-150-445, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-450 Independent inspection agency compliance control (IIA-CC). [Order 73-25, § 296-150-450, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-500 Design plan approval—General. [Order 73-25, § 296-150-500, filed 12/3/73; Order 71-1, § 296-150-500, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-505 Design plan approval application. [Order 73-25, § 296-150-505, filed 12/3/73; Order 71-1, § 296-150-505, filed

2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-506 Design plan types and descriptions. [Order 73-25, § 296-150-506, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-510 Engineering and test procedures. [Order 73-25, § 296-150-510, filed 12/3/73; Order 71-1, § 296-150-510, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-515 Design plan requirements. [Order 73-25, § 296-150-515, filed 12/3/73; Order 71-1, § 296-150-515, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-516 Technical report. [Order 73-25, § 296-150-516, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-520 Technical report—Live loads. [Order 71-1, § 296-150-520, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-525 Manufacturing in more than one location. [Order 73-25, § 296-150-525, filed 12/3/73; Order 71-1, § 296-150-525, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-530 Out-of-state applicant. [Order 73-25, § 296-150-530, filed 12/3/73; Order 71-1, § 296-150-530, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-535 Out-of-state applicant—Nonconforming application and plans. [Order 71-1, § 296-150-535, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-540 Manufacturers evidence of department approval. [Order 73-25, § 296-150-540, filed 12/3/73; Order 71-1, § 296-150-540, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-545 Design plan approval expiration. [Order 73-25, § 296-150-545, filed 12/3/73; Order 71-1, § 296-150-545, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-550 Revocation of approval. [Order 73-25, § 296-150-550, filed 12/3/73; Order 71-1, § 296-150-550, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-555 Changes to approved plans. [Order 73-25, § 296-150-555, filed 12/3/73; Order 71-1, § 296-150-555, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-560 Transfer of approvals. [Order 73-25, § 296-150-560, filed 12/3/73; Order 71-1, § 296-150-560, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-565 Change of name and address. [Order 73-25, § 296-150-565, filed 12/3/73; Order 71-1, § 296-150-565, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-570 Discontinuance of manufacture. [Order 73-25, § 296-150-570, filed 12/3/73; Order 71-1, § 296-150-570, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-575 Existing approvals. [Order 73-25, § 296-150-575, filed 12/3/73; Order 71-1, § 296-150-575, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-580 Compliance. [Order 73-25, § 296-150-580, filed 12/3/73; Order 71-1, § 296-150-580, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-585 Design plan approval—Custom building. [Order 71-1, § 296-150-585, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-590 Field erection. [Order 73-25, § 296-150-590, filed 12/3/73; Order 71-1, § 296-150-590, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-595 Proprietary material. [Order 73-25, § 296-150-595, filed 12/3/73; Order 71-1, § 296-150-595, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-600 Insignia—Insignia required. [Order 71-1, § 296-150-600, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-605 Application for insignia. [Order 73-25, § 296-150-605, filed 12/3/73; Order 71-1, § 296-150-605, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-606 Agreement of work completion (AWC). [Order 73-25, § 296-150-606, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-610 Alteration or conversion. [Order 73-25, § 296-150-610, filed 12/3/73; Order 71-1, § 296-150-610, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-615 Alteration or conversion—Denial of insignia. [Order 71-1, § 296-150-615, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-620 Alteration or conversion—Insignia removal. [Order 71-1, § 296-150-620, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-625 Lost or damaged insignia. [Order 73-25, § 296-150-625, filed 12/3/73; Order 71-1, § 296-150-625, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-630 Custom building. [Order 73-25, § 296-150-630, filed 12/3/73; Order 71-1, § 296-150-630, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-640 Unauthorized use. [Order 73-25, § 296-150-640, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-650 Unit identification. [Order 73-25, § 296-150-650, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-675 Components. [Order 73-25, § 296-150-675, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-680 Components application. [Order 73-25, § 296-150-680, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-685 Components approval. [Order 73-25, § 296-150-685, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-690 Components testing. [Order 73-25, § 296-150-690, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-695 Components fees and production reports. [Order 73-25, § 296-150-695, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-700 Fee schedule. [Order 73-25, § 296-150-700, filed 12/3/73; Order 71-1, § 296-150-700, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-800 Hearings—Public hearing. [Order 71-1, § 296-150-800, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-805 Hearings—Board of appeals. [Order 71-1, § 296-150-805, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-815 Foreword. [Order 73-25, § 296-150-815, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-820 Definitions. [Order 73-25, § 296-150-820, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-825 Officers. [Order 73-25, § 296-150-825, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-830 Internal management. [Order 73-25, § 296-150-830, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-835 Duties. [Order 73-25, § 296-150-835, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-840 Hearings. [Order 73-25, § 296-150-840, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-845 Appearance and practice before the board. [Order 73-25, § 296-150-845, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-850 Solicitation of business unethical. [Order 73-25, § 296-150-850, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-855 Standards of ethical conduct. [Order 73-25, § 296-150-855, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-860 Appearance by former employee. [Order 73-25, § 296-150-860, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-865 Former employee as expert witness. [Order 73-25, § 296-150-865, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-870 Computation of time. [Order 73-25, § 296-150-870, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-875 Administrative Procedure Act. [Order 73-25, § 296-150-875, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

Chapter 296-04 WAC
INTERNAL RULES—STATE APPRENTICESHIP AND TRAINING COUNCIL

AFFIRMATIVE ACTION PLAN OF THE WASHINGTON STATE APPRENTICESHIP COUNCIL TO PROMOTE EQUAL EMPLOYMENT OPPORTUNITY IN APPRENTICESHIP AND TRAINING

WAC

INTERNAL RULES

AFFIRMATIVE ACTION PLAN

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-04-020 Special meetings. [§ II, filed 3/23/60.] See WAC 296-04-030(1). This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-030 Executive meetings. [§§ III and IV, filed 10/11/65; §§ III and IV, filed 2/12/65; § II A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-040.

296-04-050 Minutes of meetings. [§ VI, filed 10/11/65; § VI, filed 2/12/65; § IV, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-060.

296-04-070 Ex officio members. [§ VIII, filed 10/11/65; § VIII, filed 2/12/65; § V A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-060.

296-04-080 Agencies consulted. [§ IX, filed 10/11/65; § IX, filed 2/12/65; § V B, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-060.

296-04-100 Official action. [§ XI, filed 10/11/65; § XI, filed 2/12/65; § VI A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71.

296-04-110 Interim action. [§ VI B, filed 3/23/60.] This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-120 Duration of and change of policies. [§ VII, filed 3/23/60.] This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-130 Submission of petitions and requests. [§ XIV; filed 10/11/65; § XIV, filed 2/12/65; § VIII, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-040.

296-04-140 Where matters sent. [§ XV, filed 10/11/65; § XV, filed 2/12/65; § VIII A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-045.

296-04-150 Delegation to director of apprenticeship. [§ IX, filed 3/23/60.] This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-170 Program deviation from approved standards. [§ XVII, filed 10/11/65; § XVII, filed 2/12/65; § X B; filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-180 Program cancellation. [§ XVIII, filed 10/11/65; § XVIII, filed 2/12/65; § X C, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-190 Effect of program cancellation. [§ XIX, filed 10/11/65; § XIX, filed 2/12/65; § X D, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-195 Proposed programs must conform to council standards. [§ XX, filed 10/11/65; § XX, filed 2/12/65.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-200 Certificates of completion. [§ XXI, filed 10/11/65; § XXI, filed 2/12/65; § XI, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-210 Construction limit of rules. [§ XII, filed 3/23/60.] This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-220 Director may obtain consultants. [§ XIII, filed 3/23/60.] This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-225 Consultants. [§ XXII, filed 10/11/65; § XXII, filed 2/12/65.] Repealed by Order 71-3, filed 3/25/71.

296-04-230 Role of consultants. [§ XIV A, filed 3/23/60.] This section has been decodified as it was omitted from "The rules and regulations of the Washington state apprenticeship council," filed 2/12/65 and 10/11/65.

296-04-240 Dissemination of information by consultants limited. [§ XXIII, filed 10/11/65; § XXIII, filed 2/12/65; § XIV B, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71.

296-04-250 Signatures accepted. [§ XXIV, filed 10/11/65; § XXIV, filed 2/12/65.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-160.

296-04-290 Appeal procedure. [Order 76-4, § 296-04-290, filed 2/20/76; Order 72-18, § 296-04-290, filed 11/8/72; Order 71-3, § 296-04-290, filed 3/25/71.] Repealed by 79-09-003 (Order 79-13), filed 8/2/79. Statutory Authority: RCW 49.04.010.

296-04-490 Appeal. [Order 71-13, § 296-04-490, filed 10/28/71.] Repealed by 80-03-004 (Order 80-2), filed 2/8/80. Statutory Authority: RCW 49.04.010.

296-04-500 Registration fees for apprenticeship and training agreements and standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-500, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

296-04-501 Registration fees for apprenticeship and training agreements. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-501, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

296-04-502 Registration fees for apprenticeship and training standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-502, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

296-04-503 Registration fees for apprenticeship and training standards—Limitation on fees. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-503, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

296-04-504 Registration fees—Application to existing apprenticeship and training agreements and standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-504, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

296-04-505 Registration fees for apprenticeship and training agreements and standards—Effect of failure to make timely payment. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-505, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

296-04-506 Registration fees for apprenticeship and training agreements and standards—Mailing address. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-506, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

INTERNAL RULES

WAC 296-04-001 Foreword. The Washington State Apprenticeship and Training Act, RCW 49.04.010 - 49.04.910, establishes the council and its administrative arm, the apprenticeship and training division of the department of labor and industries. The intention of the council and department in promulgating and adopting these rules is to establish a uniform procedure to be followed by state and local apprenticeship and training committees in presenting matters to the state apprenticeship and training council and further to establish standards by which the council can operate to effectuate its statutory obligations set forth in the apprenticeship act.

The Washington state apprenticeship and training council recognizes the importance of quality apprenticeship programs to meet the growing needs of employers and employees for high quality training. The council also recognizes that rapid changes in our state's economy and technological change necessitates skilled workers who meet industry-wide standards in order to compete successfully in the changing marketplace. Employers will benefit by knowing that skilled workers who have graduated from a state recognized apprenticeship program have been trained to industry-wide standards and not exclusively in response to the needs of an individual employer or group of employers.

The council also recognizes that the delivery and regulation of apprenticeship programs should be conducted in a manner which avoids needless duplication on the part of the department of labor and industries, community colleges, and vocational-technical institutes. It is important that approved apprenticeship programs be structured to maximize the protection of the apprentice by providing a meaningful process which allows the apprentice to ensure that his or her rights as an apprentice are protected throughout the term of the apprenticeship.

The council further recognizes that the number of apprentices in a trade or group of trades in any geographic area must be sufficient to meet the needs of all employers and not be so large as to create an oversupply of apprentices. Because quality apprenticeship training requires reasonably continuous on-the-job training, an oversupply of apprentices in any geographic area is to be avoided, if possible, in an effort to maintain ongoing quality training.

The council further recognizes that the attainment of quality apprenticeship training and the planning of numbers of new apprentices in a trade or group of trades will be accomplished best by the establishment of one joint apprenticeship and training committee serving the entire trade or group of trades in a specified geographic area. A single committee is best able to train to industry-wide standards which will enable workers to move between firms when economic necessity requires. A single committee is best able to determine the number of apprentices needed in an entire trade or group of trades in a specified geographic area.

The council also recognizes the benefit apprentices gain in having the widest range of employers and their apprentices represented in the related and supplemental training classes. The intermingling of apprentices representing the widest array of firms possible, in related and supplemental training classes, exposes apprentices to the widest possible range of work experiences. This sharing of work experiences increases the quality of training, benefiting both apprentices and employers.

The council intends that apprenticeship programs be available to meet the training needs of all employers in the state of Washington. These programs are open to all employers on an equal and nondiscriminatory basis. The need for continued quality training, equal treatment of apprentices, and efficient delivery of training suggest that these training needs are best met through existing programs.

As provided in WAC 296-04-160, committees approved by the council shall offer training opportunities on an equal basis to all employers. Existing committees are expected to provide apprenticeship and training opportunities for employers not currently participating in the program:

(1) At a reasonable cost that is equivalent to the cost incurred by employers and apprentices currently participating;

(2) With equal treatment and opportunity for all apprentices; and

(3) With reasonable working and training conditions that apply to all apprentices uniformly and equally;

(4) An employer shall not be required to sign a collective bargaining agreement in order to participate in an apprenticeship program.

All policies and rules of the council are designed to strengthen apprenticeship and training in the state of Washington, as well as to explain related factors established under existing state and federal laws. The council, as the responsible legislative organ governing apprenticeship and training, requests the cooperation and assistance of all interested persons, organizations, and agencies functioning within the framework of the rules and regulations.

[Statutory Authority: RCW 49.04.010 and 49.04.040. 90-21-118, § 296-04-001, filed 10/22/90, effective 11/22/90; Order 71-3, § 296-04-001, filed 3/25/71; Foreword, filed 10/11/65, filed 2/12/65, filed 3/23/60.]

WAC 296-04-005 Apprenticeship and training agreements—Proposed standards. The Washington state apprenticeship and training council is the body responsible for matters concerning apprenticeship and training in the state of Washington. The principal function of the council is to approve and register apprenticeship and training agreements. Persons or organizations desiring to institute an apprenticeship or training program must first prepare proposed standards which conform to these rules and to RCW 49.04.050. The standards must also include the composition of and general rules for the committee which will administer the program. The supervisor, or Washington state apprenticeship coordinators, are available to give assistance in this task.

These standards, which will be either a plant program or committee program as defined herein, must then be presented to the supervisor at least 45 days before the regular meeting at which the council will be requested to consider such proposed standards. The standards proposed will then be discussed by the council and approved, disapproved, or approved subject to enumerated changes. The council, at its meetings, will allow changes made for clerical errors and additions of standard approved language deleted from the proposed standard if authorized representatives of all concerned are present and authorized to accept changes. The council will not accept changes at its meetings in the format or language not deemed standard by the council.

The committee thus set up then begins functioning. Its duties are to run the day to day operations of the apprenticeship and training program. It is charged with operating the program in accordance with the standards as approved by the council. It is charged with accepting or rejecting applicants for apprenticeship or training, registering accepted applicants as apprentices or trainees with the supervisor of apprenticeship and training, removing apprentices or trainees from the program in accordance with the standards and informing the supervisor of any matters which affect the standing of individuals as apprentices or trainees. Persons not registered with the supervisor as apprentices or trainees cannot be recognized as apprentices or trainees by the council.

The supervisor and his staff may be consulted on any matters concerning apprenticeship and training, and they will provide any information concerning apprenticeship training which is available to them. They are also required to investigate any discrepancies between the actual and required operation of any program and conduct systematic reviews of the operation of all programs. The supervisor may recommend cancellation of any program which is not operated in accordance with its approved standards after notice of violation is given in accordance with the provisions of WAC 296-04-270(3).

The supervisor and the council will act to assist in the resolution of any complaints against local committees, or other organizations administering apprenticeship agreements, by any apprentices who have completed their probationary period, as provided in WAC 296-04-295.

[Statutory Authority: Chapter 49.04 RCW. 85-22-035 (Order 85-31), § 296-04-005, filed 11/1/85. Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-005, filed 2/8/80; Order 71-3, § 296-04-005, filed 3/25/71.]

WAC 296-04-010 Regular meetings. The council shall hold regular (quarterly) business meetings at such locations and times within the state, that will best serve apprenticeship. Notice of meetings, when called by the chairman, shall be sent to all council members, ex officio members, approved joint apprenticeship committees, and may be sent to such other person, persons, organizations or agency whose presence is desired, thirty days prior to such meetings.

[§ II, filed 10/11/65; § II, filed 2/12/65; § 1, filed 3/23/60.]

WAC 296-04-015 Definitions. Whenever in these rules and regulations, the following words shall have these meanings:

(1) "Council" shall mean the Washington state apprenticeship and training council established pursuant to RCW 49.04.010.

(2) The words "apprenticeship committee" shall mean a state or local joint apprenticeship committee established pursuant to RCW 49.04.040 and/or a committee administering a plant program.

(3) The words "regular meeting" shall mean a public meeting of the council as described in WAC 296-04-040(1).

(4) The term "special meeting" shall mean a public meeting of the council as described in WAC 296-04-040(2).

(5) The word "supervisor" shall mean the supervisor of apprenticeship and training appointed pursuant to RCW 49.04.030.

(6) The term "agreement" shall mean an apprenticeship agreement and/or training agreement.

(7) The term "plant program" is defined in WAC 296-04-050.

(8) The term "individual agreement" shall mean a written agreement between an apprentice and/or trainee and either his employer or an apprenticeship committee acting as agent for the employer.

(9) The term "committee program" shall mean an apprenticeship agreement described in WAC 296-04-270 (1)(a).

(10) The term "on-the-job training program" shall mean a program described in WAC 296-04-280.

(11) The term "trainee" shall mean a person registered with the supervisor pursuant to WAC 296-04-270 or 296-04-280.

(12) The term "apprentice" shall mean a person registered with the supervisor pursuant to an apprenticeship training program pursuant to WAC 296-04-270 for purposes of chapter 49.04 RCW and these rules.

(13) The term "standards" shall mean a written agreement setting forth a plan containing all terms and conditions for the qualifications, recruitment, selection, employment, and training of apprentices, as further defined in RCW 49.04.050.

(14) The term "registration" shall mean the maintenance of records of apprenticeship and training agreements and of apprenticeship and training standards.

(15) The term "sponsor" shall mean any plant, firm, facility, association, committee, or organization operating an apprenticeship and training program and in whose name the program is registered or is to be registered.

(16) The term "department" shall mean the department of labor and industries.

[Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-015, filed 10/29/82. Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-015, filed 2/8/80; Order 76-4, § 296-04-015, filed 2/20/76; Order 71-13, § 296-04-015, filed 10/28/71; Order 71-3, § 296-04-015, filed 3/25/71; § I, filed 10/11/65; § I, filed 2/12/65.]

WAC 296-04-040 Council meetings—When held—Notice—Who may attend—Quorum. Council meetings shall be of two kinds—regular and special meetings.

(1) **Regular meetings.** Regular meetings of the council shall be held at least quarterly during each year beginning on the third Thursday of the months of January, April, July and October. Such regular meetings shall be held at such locations within the state of Washington which in the opinion of the council will best promote the purposes of the Washington State Apprenticeship and Training Act. All meetings of the council shall be open to the general public, and all actions, transaction of official business of the council, collective decision, commitment or promise, and all collective discussion, acquisition and exchange of facts in the course of deliberation prior to any action of the council shall only be made in meetings open to the public consistent with the provisions of the Open Public Meetings Act of 1971 (chapter 250, Laws of 1971 1st ex. sess.) and chapter 34.05 RCW. No member of the general public will be required as a condition upon attending any council meeting to register his name or give any other information or to fulfill any condition precedent to his attendance at council meetings. Notice of such meetings shall be given to all approved committees and may be given to any persons, organizations, or agencies at the direction of the council, or any member thereof, and in addition shall be given to any newspaper, news service, television or radio station which has requested to be notified of council meetings. Committee programs, plant programs, or amendments thereto, may be approved or disapproved only at regular meetings.

(2) **Special meetings.** Special meetings of the council may be called by the chairman or by majority of the council members by delivering personally or by mail written notice to each member of the council and all approved joint apprenticeship and training committees and to each newspaper of general circulation, television or radio station which has on file with the council or the supervisor a request to be notified of such special meeting of the council, which shall be ineffective unless it sets forth the date, time and location of the meeting and specifies the business to be transacted by the council at such special meeting. Final disposition may not be made of any matter at such special meeting other than specified in the notice of such special meeting. Special meetings shall be open to the general public to the same extent as the quarterly regular meetings of the council. Notice of special meetings must be delivered personally or by mail at least twenty-four hours before the time specified in the notice of such special meeting, except in the case of rule changes pursuant to chapter 34.05 RCW which must be at least twenty days before the time specified in the notice.

(3) **Notice of council meetings.** Notice of each quarterly regular meeting of the council shall be given to all council members by the supervisor at least twenty days before the date set for the meeting and in addition shall give notice to such other persons and organizations as specified in subsection (1) of this section.

(4) **Notice of special meetings of the apprenticeship council.** Notice of special meetings of the council may be given by the supervisor at the request of the chairman or the majority of the members of the council in the manner and form specified in subsection (2) of this section. If such notices are not given, no action taken by the council shall be effective at such meetings unless each regular council member at such meeting, or prior thereto, gives a written waiver of notice of such meeting to be filed by the supervisor and the notice shall be deemed to be waived by any member who is present at the meeting at the time it convenes. *Provided,* That rule change may not be made at such special meeting unless the requirements of chapter 34.05 RCW have been complied with.

(5) **Submission of petitions or requests.** The council will not act upon any petition or request which is addressed to the council unless such a petition or request is submitted in writing to the supervisor at least forty-five days prior to the date of such quarterly regular meeting, and any petitions or requests not submitted forty-five days prior to such quarterly meeting shall be deferred to the next quarterly regular meeting of the council and the petitioner shall be so notified by the supervisor.

(6) Correspondence other than that referenced in WAC 296-04-005 and 296-04-040 (1), (2) and (5), shall be submitted in writing to the supervisor of apprenticeship at least fifteen working days before the quarterly meeting at which the council's consideration is requested. However, the supervisor of apprenticeship may consider such correspondence submitted less than fifteen working days before the meeting if the council determines the correspondence is crucial to deliberations regarding approval or disapproval of any given apprenticeship agreement. Noncrucial correspondence submitted less than fifteen working days before the quarterly meeting shall be considered by the council at the following quarterly meeting.

(7) **Quorum.** Two-thirds of the council members entitled to vote shall be considered a quorum.

[Statutory Authority: RCW 49.04.010. 90-10-021, § 296-04-040, filed 4/23/90, effective 5/24/90. Statutory Authority: Chapter 49.04 RCW. 85-22-035 (Order 85-31), § 296-04-040, filed 11/1/85. Statutory Authority: RCW 49.04.010. 79-03-023 (Order 79-3), § 296-04-040, filed 2/22/79; Order 72-8, § 296-04-040, filed 6/8/72; Order 71-3, § 296-04-040, filed 3/25/71; § V, filed 10/11/65; § V, filed 2/12/65; § III, filed 3/23/60.]

WAC 296-04-042 Voting. The council chair shall establish a standing committee to be known as the tie-breaker committee, comprised of an employer representative, an employee representative, and the public member. In case of a tie vote on proposed standards at any meeting of the council, the tie-breaker committee shall meet or confer, review the record, and render a decision on the proposal within thirty days. The supervisor or a designee of the supervisor shall act as secretary to the committee and furnish all information necessary for a decision.

[Statutory Authority: RCW 49.04.010. 90-16-031, § 296-04-042, filed 7/23/90, effective 8/23/90.]

WAC 296-04-045 Supervisor-administrator of council. The supervisor shall be the administrator of the council. He shall perform the duties listed in RCW 49.04.030 and, in addition, he shall register all agreements conforming to WAC 296-04-270 in his office, review programs and their operation, and recommend cancellation of any committee program, or plant program previously registered which is not operated in conformity with its agreement. All documents concerning apprenticeship or training agreements, their revision or any other matters affecting apprenticeship or training shall be sent to him. Such documents may be addressed to: Supervisor of Apprenticeship and Training, Department of Labor and Industries, Olympia, Washington.

[Order 71-3, § 296-04-045, filed 3/25/71.]

WAC 296-04-05001 Plant program defined. For the purpose of these rules a "plant program," over which the council will assume jurisdiction and serve as a joint apprenticeship and training committee, pursuant to the authority of RCW 49.04.040, means: An apprenticeship agreement or agreements with an employer which conforms in form and substance with the applicable provisions of these rules and chapter 49.04 RCW in an apprenticeable trade, craft or occupation in which a major portion of the work to be performed by the apprentice for such employer is within a geographical area not served by an approved local joint apprenticeship and training committee. The apprenticeship agreement must specify the number of required hours for completion of apprenticeship, which must equal or exceed the average number of hours for such trade, craft or occupation within this state, which in any event shall not be less than 2,000 hours of reasonably continuous employment.

[Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-050 (codified as WAC 296-04-05001), filed 1/8/80; Order 72-18, § 296-04-050, filed 11/8/72.]

WAC 296-04-060 Officers, appointment, duties—Ex officio members. The officers of the council shall be a chairman, vice chairman, and secretary.

(1) Chairman and vice chairman.

(a) The chairman and vice chairman shall be elected by majority vote of the council members present and voting at the quarterly business meeting nearest to the month of June in each odd-numbered year. They shall hold office for a term of two years and until their successors are elected, or until their death or resignation.

(b) The chairman shall preside over all meetings, conducting them in accordance with *Robert's Rules of Order* as modified by these rules and regulations. He may vote in all matters before the council as a regular member and may participate in discussion of all matters before the council. He shall have such other powers and duties as are now or hereafter provided in these rules and regulations and as are usual or necessary to chairmen, as provided in *Robert's Rules of Order.*

(c) The vice chairman shall preside over all council meetings in the absence of the chairman. He shall have all of the powers and duties of chairman when he is so presiding.

(2) Secretary:

(a) The supervisor shall be the secretary of the council. He shall hold the office of secretary during his tenure as supervisor.

(b) The secretary shall, with the assistance of a recording secretary, keep minutes of all special and regular meetings. He shall keep a copy of the minutes of all regular and special meetings on file in his office as supervisor. He shall forward copies of minutes of all meetings to all regular and ex officio members of the council and shall make copies of the minutes of all meetings available to the public upon written request. He shall have other powers and duties as are provided in these rules and regulations and as are usually or necessarily concomitant with the office of secretary.

(3) Ex officio members of the council shall have the full right to participate in discussion of any matters before the council. They shall have no vote.

[Statutory Authority: Chapter 49.04 RCW. 85-22-035 (Order 85-31), § 296-04-060, filed 11/1/85; Order 76-4, § 296-04-060, filed 2/20/76; Order 71-3, § 296-04-060, filed 3/25/71; § VII, filed 10/11/65; § VII, filed 2/12/65; § V, filed 3/23/60.]

WAC 296-04-090 Rules of order. *Robert's Rules of Order* shall prevail at all meetings unless otherwise provided for by these rules.

[§ X, filed 10/11/65; § X, filed 2/12/65; § VI, filed 3/23/60.]

WAC 296-04-105 Retroactivity. The council may make any action or decision which it takes retroactive to the date of the previous business session.

[Order 71-3, § 296-04-105, filed 3/25/71; § XII, filed 10/11/65; § XII, filed 2/12/65.]

WAC 296-04-115 Amendment. These rules and regulations may be amended by a two-thirds majority of regular council members. All council members, the supervisor, the committees and any other interested persons shall be promptly notified of any changes in writing. Such amendments shall be promulgated in accordance with the Administrative Procedure Act, Title 34 RCW.

[Order 71-3, § 296-04-115, filed 3/25/71; § XIII, filed 10/11/65; § XIII, filed 2/12/65.]

WAC 296-04-125 Rule change-procedures and forms. The procedure and form for petitions requesting the making, amendment, or repeal of a rule are set forth in WAC 296-08-540, 296-08-550, 296-08-560, 296-08-570 and 296-08-590(2). The procedure and form for requests for

declaratory rulings are set forth in WAC 296-08-580, 296-08-590(1). Such petitions and requests shall be addressed to the Washington state apprenticeship and training council and mailed to the supervisor of apprenticeship and training at his address hereinbefore in WAC 296-04-045 stated.

[Order 71-3, § 296-04-125, filed 3/25/71.]

WAC 296-04-160 Apprenticeship committees. (1) Apprenticeship committees shall be appointed in accordance with the provisions of RCW 49.04.040. Such committees shall have the duties prescribed by statute, these rules and the approved standards under which they operate. Committees shall function, administrate or relinquish authority only with the consent of the council. On any petition addressed to the council or the supervisor, only the signature of the elected chairman and secretary of the committee shall be accepted unless the apprenticeship committee has petitioned the council to recognize and accept the signature of another person. Such a petition must be signed by a quorum of the members of the petitioning apprenticeship committee.

(2) Committees approved by the council shall offer training opportunities on an equal basis to all employers and apprentices including all rights, appeals, and services available in the existing apprenticeship program. If an existing committee refuses to provide access to apprenticeship and training opportunities to all employers, the council shall take action as necessary to remove all restrictions to access. Council action may include, but is not limited to, the decertification of the existing committee and recognition of a new committee in order to carry out the intent of chapter 49.04 RCW and the rules adopted under its authority.

(3) It is the council's view that joint apprenticeship and training committees are not state agencies but rather only quasi-public entities performing services jointly for management and labor by assistance to the apprenticeship program.

[Statutory Authority: RCW 49.04.010 and 49.04.040. 90-21-118, § 296-04-160, filed 10/22/90, effective 11/22/90. Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-160, filed 11/14/78; Order 76-4, § 296-04-160, filed 2/20/76; Order 72-8, § 296-04-160, filed 6/8/72; Order 71-3, § 296-04-160, filed 3/25/71; § XVI, filed 10/11/65; § XVI, filed 2/12/65; § X A, filed 3/23/60.]

WAC 296-04-165 Union waiver. (1) Under a program proposed for registration by an employer or employers' association, and where the standards, collective bargaining agreement or other instrument, provides for participation by a union in any manner in the operation of the substantive matters of the apprenticeship program, and such participation is exercised, written acknowledgement of union agreement or "no objection" to the registration is required. Where no such participation is evidenced and practiced, the employer or employers' association shall simultaneously furnish to the union, if any, which is the collective bargaining agent of the employees to be trained, a copy of its application for registration and of the apprenticeship program. The registration agency shall provide a reasonable time period of not less than 30 days nor more than 60 days for receipt of union comments, if any, before final action on the application for registration and/or approval.

(2) Where the employees to be trained have no collective bargaining agent, an apprenticeship program may be proposed for registration by an employer or group of employers.

[Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-165, filed 11/14/78.]

WAC 296-04-260 Merit awards. The supervisor, with the approval of the council, may issue awards for meritorious service to persons who have given at least five years of continuous service to the apprenticeship and training program of this state.

[Order 71-3, § 296-04-260, filed 3/25/71; § XXV, filed 10/11/65; § XXV, filed 2/12/65.]

WAC 296-04-270 Apprenticeship agreements—Types—Standards—Registration, review, cancellation, reregistration—Certificate of completion. (1) The following apprenticeship agreements shall be recognized pursuant to RCW 49.04.060:

(a) A written agreement between an association of employers and an organization of employees describing the conditions of training for apprentices.

(b) A written statement of an employer or a written agreement between an employer and an employee organization describing the conditions of training apprentices. The former agreement shall be recognized only if there is no bona fide employee organization in the plant affected by the agreement.

(c) A written agreement between an employer and an individual apprentice describing the conditions of apprenticeship.

(2) Apprenticeship agreements shall conform to the following standards:

(a) Committee programs, plant programs, and on-the-job training programs must contain the provisions required by RCW 49.04.050 and, in addition, shall contain:

(i) Provision for nondiscrimination in the selection of apprentices in substantially the following form:

Each sponsor of an apprenticeship program shall include in its standards the following equal opportunity pledge: "The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington state apprenticeship and training council and Title 29, Part 30 of the Code of Federal Regulations."

(ii) Provision that there shall be no discrimination on the basis of race, color, creed, sex, or national origin after selection during all phases of employment during apprenticeship.

(iii) Provision that adequate records of the selection process must be kept for a period of at least five years and will be made available to the council or its designated representative on request. Such records must include a brief summary of any interviews and the conclusions reached on each of the specific factors which are part of the total judgment concerning each applicant.

(iv) Provision for local committee rules and regulations consistent with these rules and the applicable apprenticeship agreement.

(b) Any proposed standards for apprenticeship must be consistent with any standards for apprenticeship already approved by the council for the industry, craft or trade in question to the end that there is general statewide uniformity of such standards in each industry, trade or craft. Proposed standards shall be considered consistent if they are designed to achieve the same levels of skills as existing standards within the state for that industry, trade, or craft.

(c) Shall contain a statement of the progressively increasing scale of wages.

(d) A sample apprenticeship agreement which the council approves is available on request from the supervisor.

(3) Registration, review, cancellation, reregistration.

(a) All individual agreements shall be registered with the supervisor and subject to his approval.

(b) The supervisor and his staff, in the performance of their field work, shall conduct a systematic review of all plant and committee programs and shall take appropriate action, including recommendation of cancellation, when they find that any program is not being operated according to these rules and regulations or according to its applicable standards.

(c) When any program is found to be operating in a manner inconsistent with or contrary to these rules and regulations or its established plant or committee program, the supervisor shall notify the offending committee, person, firm or agency of the violation. If the supervisor does not receive notice, within 60 days, of action taken to correct such violations, the supervisor may take whatever action he deems necessary, including recommendation of cancellation of the apprenticeship or training program and agreement to the council.

(d) If the supervisor deems it necessary to recommend cancellation of an apprenticeship or training program, he shall do so in writing to each council member, stating in detail the reasons for his recommendation. A copy of said recommendation shall be mailed to the last known address of each member of the committee administering said program, or to those persons responsible for said program, together with notice that the council shall consider the recommendation at its next regularly scheduled meeting more than 30 days subsequent to the date of the recommendation and that all interested persons may present evidence or testimony regarding said recommendation. The council shall decide the question before it upon majority vote of the members present and voting and shall notify all interested parties of its decision, together with the reasons for it, in writing.

(e) The cancellation of any program or agreement shall automatically effect a cancellation of any agreement registered thereunder, provided that any organization or firm not responsible for the violations causing the cancellation may petition the council for approval of such cancelled agreement or program as a new program.

(f) Certificates of completion shall be issued at the request of the appropriate committee. An affidavit of the secretary of the committee concerned shall accompany the request, which affidavit shall state that the apprentice has successfully completed the apprenticeship program of that committee, and that he has been an active, registered participant of that committee's program for at least six months.

[Statutory Authority: RCW 49.04.010. 93-04-100, § 296-04-270, filed 2/2/93, effective 3/5/93. Statutory Authority: RCW 49.04.010 and 49.04.050. 90-10-020, § 296-04-270, filed 4/23/90, effective 5/24/90. Statutory Authority: RCW 49.04.050. 87-01-046 (Order 86-43), § 296-04-270, filed 12/15/86. Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-270, filed 2/8/80; Order 76-4, § 296-04-270, filed 2/20/76; Order 71-3, § 296-04-270, filed 3/25/71; § XXVI, filed 10/11/65; § XXVI, filed 2/12/65.]

WAC 296-04-275 Reciprocity. Apprenticeship programs and standards of employers and unions in other than the building and construction industry, which jointly form a sponsoring entity on a multistate basis and are registered pursuant to all requirements of Title 29 Code of Federal Regulations, Part 29, as adopted February 15, 1977 by any recognized state apprenticeship agency/council or by the bureau of apprenticeship and training, U.S. Department of Labor, shall be accorded approval reciprocity by the Washington state apprenticeship and training council, if such reciprocity is requested by the sponsoring entity.

[Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-275, filed 11/14/78; 78-09-056 (Order 78-13), § 296-04-275, filed 8/22/78.]

WAC 296-04-280 On-the-job training programs. (1) Training programs may be set up in the same manner as apprenticeship programs, with any exceptions authorized by the council provided that no on-the-job training program shall be established or authorized where there is a parallel apprenticeship program in existence. A training program shall be any program which requires 2,000 or less hours of employment for completion. All of these rules shall apply to them as to apprenticeship agreements and programs, except that they will be approved by the supervisor subject to the review of the council.

(2) A pattern standard for an on-the-job training program is available from the supervisor on request.

[Statutory Authority: RCW 49.04.010. 93-04-100, § 296-04-280, filed 2/2/93, effective 3/5/93; Order 76-4, § 296-04-280, filed 2/20/76; Order 71-3, § 296-04-280, filed 3/25/71.]

WAC 296-04-295 Complaint review procedure. (1) Any controversy or difference that cannot be resolved to the satisfaction of the parties by the local committee or other organization administering the agreement may be submitted by any apprentice who has completed his or her probationary period to the apprenticeship division for resolution.

(a) The apprentice shall request the local committee or other organization to reconsider any action that is the basis for the complaint within 30 days of the action. The local committee or other organization shall, within 30 days, provide a written notification of its decision on the request for reconsideration to the apprentice and this notification shall be considered the final action of the committee. The apprentice shall submit a written complaint describing the controversy to the supervisor of the apprenticeship division within 30 days of the final action taken on the matter by the local committee or other organization.

(b) The written complaint shall set out the specific matter(s) complained of and the facts and circumstances relevant to the complaint. Any documents or correspondence relevant to the complaint shall be attached to the complaint.

The apprentice shall send a copy of the complaint to the interested local committee or other organization.

(c) Any controversy that involves matters covered by a collective bargaining agreement are not subject to the complaint review procedure established by this rule.

(2) Upon receipt of a complaint from an apprentice, the supervisor of the apprenticeship division shall investigate the controversy.

(a) The supervisor shall have 30 working days within which to complete the investigation. During the investigation, the supervisor shall attempt to effect a settlement of the controversy between the parties. If the controversy is not settled during the investigation, the supervisor, at the conclusion of the investigation shall issue a written decision resolving the controversy.

(b) The apprentice and the local committee or other organization shall fully cooperate with the supervisor during the investigation by providing any information or documents requested by the supervisor.

(c) The supervisor may, in his or her discretion, delegate the investigation of a complaint by an apprentice to any employee of the apprenticeship division.

(3) If the apprentice, local committee or other organization is dissatisfied with the decision of the supervisor, the dissatisfied party may request the apprenticeship council to review the decision.

(a) The request shall be made to the council in writing within 30 days of the issuance of the supervisor's decision and shall specify the reasons that the review is requested. The party requesting review shall provide a copy of the request to the other parties to the controversy.

(b) The council shall conduct an informal hearing to consider the request for review of the supervisor's decision. The hearing shall be held in conjunction with the council's regular quarterly meeting unless special circumstances require a hearing at a different time.

(i) At the informal hearing, the council shall review the decision issued by the supervisor and all records of the investigation. The council may also accept testimony or documents from any person, including the supervisor and his or her staff, who has knowledge relating to the controversy.

(ii) Parties at the informal hearing may be represented by counsel and may, at the council's discretion, present argument concerning the controversy. The council shall not apply formal rules of evidence.

(iii) After the informal hearing, the council shall issue a written decision resolving the controversy within 30 days. The decision of the council may be to affirm the decision of the supervisor and in that case the decision of the supervisor becomes the decision of the council. All parties to the informal hearing shall be sent a copy of the council's decision. The chairman may sign the decision for the council.

(4) The investigation or review of any controversy under this rule by the supervisor or the council shall not suspend any action taken or decision made by the local committee or other organization pending the issuance of a decision resolving the matter.

[Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-295, filed 2/8/80; 79-09-003 (Order 79-13), § 296-04-295, filed 8/2/79.]

AFFIRMATIVE ACTION PLAN

WAC 296-04-300 Promulgation. WAC 296-04-300 through 296-04-480 of this chapter sets forth the affirmative action plan of the Washington state apprenticeship and training council and establishes the policies and procedures to promote equality of opportunity in apprenticeship programs approved by the Washington state apprenticeship and training council and are adopted in accordance with the provisions of Title 29, Part 30 of the Code of Federal Regulations as amended and promulgated by the United States Department of Labor. These policies and procedures apply to the recruitment and selection of apprentices, and to all conditions of employment and training during apprenticeship; and the procedures established provide for review of apprenticeship programs, for registering apprenticeship programs, for processing complaints, and for deregistering noncomplying apprenticeship programs. These policies and procedures also provide for continued or withdrawal of recognition of apprenticeship programs. The purpose of the following sections is to promote equality of opportunity in apprenticeship by prohibiting discrimination based on race, color, religion, national origin, or sex in apprenticeship programs, by requiring affirmative action to provide equal opportunity in such apprenticeship programs, and by coordinating these policies and procedures with other equal opportunity programs.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-300, filed 11/14/78; Order 77-3, § 296-04-300, filed 1/25/77; Order 71-13, § 296-04-300, filed 10/28/71.]

WAC 296-04-310 Authority. The authority for the implementation and adoption of these rules and policies and procedures hereinafter set forth affecting the approval and registration of an apprenticeship program is vested in the Washington state apprenticeship council in accordance with the provisions of RCW 49.04.010 through 49.04.910.

[Order 71-13, § 296-04-310, filed 10/28/71.]

WAC 296-04-320 Definitions. For the purpose of the interpretation of WAC 296-04-300 through 296-04-480, the following terms shall have the following meanings:

(1) "Council" shall mean the Washington state apprenticeship and training council established pursuant to RCW 49.04.010.

(2) "Department" shall mean the United States Department of Labor.

(3) "Supervisor" shall mean the supervisor of apprenticeship and training appointed pursuant to RCW 49.04.030.

(4) "Employer" means any person or organization employing an apprentice whether or not the apprentice is enrolled with such person or organization or with some other person or organization.

(5) "Apprenticeship program" means a program registered and approved by the Washington state apprenticeship council as meeting the standards of the council for apprenticeship.

(6) "Sponsor" means any person or organization operating an apprenticeship program irrespective of whether such person or organization is an employer.

[Order 71-13, § 296-04-320, filed 10/28/71.]

WAC 296-04-330 Equal opportunity standards. Obligations of sponsors. Each sponsor of an apprenticeship program shall:

(1) Recruit, select, employ and train apprentices during their apprenticeship, without discrimination because of race, color, religion, national origin, or sex; and

(2) Uniformly apply rules and regulations concerning apprentices, including but not limited to, equality of wages, periodic advancement, promotion, assignment of work, job performance, rotation among all work processes of the trade, imposition of penalties or other disciplinary action, and all other aspects of the apprenticeship program administered by the program sponsors; and

(3) Take affirmative action to provide equal opportunity in apprenticeship, including adoption of an affirmative action plan as required by the provisions of WAC 296-04-340.

(4) **Equal opportunity pledge.** Each sponsor of an apprenticeship program shall include in its standards the following equal opportunity pledge: "The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington state apprenticeship and training council and Title 29, Part 30 of the Code of Federal Regulations."

(5) **Programs presently registered.** Each sponsor of a program registered with the council as of the effective date of these rules shall within 90 days following that effective date take the following action:

(a) Include in the standards of its apprenticeship program the equal opportunity pledge prescribed by subsection (4) of this section; and

(b) Adopt an affirmative action plan as required by WAC 296-04-340; and

(c) Adopt a selection procedure as required by WAC 296-04-350. A sponsor adopting a selection method under WAC 296-04-350 (2), (3) or (4), shall prepare and have available for submission upon request, copies of its amended standards, affirmative action plans, and selection procedure. A sponsor adopting a selection method under WAC 296-04-350(5) shall submit to the council copies of its standards, affirmative action plan, and selection procedure in accordance with the requirements of WAC 296-04-350 (5)(a).

(6) **Sponsors seeking new registration.** A sponsor of a program seeking new registration and approval of the council shall submit copies of its proposed standards, affirmative action plan, selection procedures, and such other information as may be required. The program shall be registered and approved [and] [if] such standards, affirmative action plan, and selection procedure meet the requirements of these rules.

(7) **Programs subject to approved equal employment opportunity programs.** A sponsor shall not be required to adopt an affirmative action plan under WAC 296-04-340, or a selection procedure under WAC 296-04-350, if it submits to the council satisfactory evidence that it is in compliance with an equal employment opportunity program providing for the selection of apprentices and for affirmative action in apprenticeship including goals and timetables for women and minorities which has been approved as meeting the requirements of Title VII of the Civil Rights Act of 1964, as amended, (42 U.S.C. 2000e, et seq.) and its implementing regulations published in Title 29 of the Code of Federal Regulations, Chapter XIV, or Executive Order 11246, as amended, and its implementing regulations at Title 41 of the Code of Federal Regulations, Chapter 60: *Provided,* That programs approved, modified or renewed subsequent to the effective date of this amendment will qualify for this exception only if the goals and timetables for minorities and women for the selection of apprentices provided for in such programs are equal to or greater than the goals required under this part.

(8) **Program with fewer than five apprentices.** A sponsor of a program in which fewer than five apprentices are indentured shall not be required to adopt an affirmative action plan under WAC 296-04-340, or a selection procedure under WAC 296-04-350: *Provided,* That such program was not adopted to circumvent the requirements of this part.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-330, filed 11/14/78; Order 71-13, § 296-04-330, filed 10/28/71.]

Reviser's note: RCW 34.05.395 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-340 Affirmative action plans. (1) Adoption of a sponsor's commitment to equal opportunity in recruitment, selection, employment, and training of apprentices shall include the adoption of a written affirmative action plan.

(2) Definition of affirmative action. Affirmative action is not mere passive nondiscrimination. It includes procedures, methods and programs for the identification, positive recruitment, training, and motivation of present and potential minority and female (minority and nonminority) apprentices including the establishment of goals and timetables. It is action which will equalize opportunity in apprenticeship so as to allow full utilization of the work potential of minorities and women. The overall result to be sought is equal opportunity in apprenticeship for all individuals participating in or seeking entrance to the labor force of this state.

(3) Outreach and positive recruitment. An acceptable affirmative action plan must also include adequate provisions for outreach and positive recruitment that would reasonably be expected to increase minority and female participation in apprenticeship by expanding the opportunity of minorities and women to become eligible for apprenticeship selection. In order to achieve these objectives, sponsors shall undertake activities such as those listed below. It is not contemplated that each sponsor necessarily will include all of the listed activities in its affirmative action program. The scope of the affirmative action program will depend on all the circumstances including the size and type of the program and its resources. However, the sponsor will be required to undertake a significant number of appropriate activities in order to enable it to meet its obligations under these rules. The affirmative action plan shall set forth the specific steps the sponsor intends to take in the areas listed below. Whenever special circumstances warrant, the council may provide from any funds made available to it for such purpose, such finan-

cial or other assistance it deems necessary to implement the requirements of this paragraph.

(a) Dissemination of information concerning the nature of apprenticeship, requirements for admission to apprenticeship, availability of apprenticeship opportunities, sources of apprenticeship applications, and the equal opportunity policy of the sponsor. For programs accepting applications only at specified intervals, such information shall be disseminated at least thirty days in advance of the earliest date for application at each interval. For programs customarily receiving applications throughout the year, such information shall be regularly disseminated, but not less than semiannually. Such information shall be given to the council, local schools, employment service offices, women's centers, outreach programs and community organizations which can effectively reach minorities and women and shall be published in newspapers which are circulated in the minority community and among women as well as the general areas in which the program sponsor operates.

(b) Participate in any workshops conducted by employment service agencies for the purpose of familiarizing school, employment service and other appropriate personnel with the apprenticeship system and current opportunities therein.

(c) Cooperation with the local school boards and vocational education systems to develop programs for preparing students to meet the standards and criteria required to qualify for entry into apprenticeship programs.

(d) Internal communication of the sponsor's equal opportunity policy in such a manner as to foster understanding, acceptance, and support among the sponsor's various officers, supervisors, employees, and members and to encourage such persons to take the necessary action to aid the sponsor in meeting its obligations under these rules.

(e) Engaging in such programs as outreach for the positive recruitment and preparation of potential applicants for apprenticeship; where appropriate and feasible, such programs shall provide for pretesting experience and training. If no programs are in existence, the sponsor shall seek to initiate these programs, or, when available, to obtain financial assistance from the council. In initiating and conducting these programs, the sponsor may be required to work with other sponsors and appropriate community organizations. The sponsor shall also initiate programs to prepare women and encourage women to enter traditionally male programs.

(f) To encourage the establishment and utilization of programs of preapprenticeship, preparatory trade training, or others designed to afford related work experience or to prepare candidates for apprenticeship, a sponsor shall make appropriate provision in its affirmative action plan to assure that those who complete such programs are afforded full and equal opportunity for admission into the apprenticeship program.

(g) Utilization of journeymen to assist in the implementation of the sponsor's affirmative action program.

(h) Granting advance standing or credit on the basis of previously acquired experience, training, skills, or aptitude for all applicants equally.

(i) Admitting to apprenticeship persons whose age exceeds the maximum age for admission to the program, where such action is necessary to assist the sponsor in achieving its affirmative action obligations.

(j) Appropriate action as to ensure that the recruitment, selection, employment, and training of apprentices during apprenticeship, shall be without discrimination because of race, color, religion, national origin, or sex; such as: General publication of apprenticeship opportunities and advantages in advertisements, industry reports, articles, etc.; use of present minority and female apprentices and journeymen as recruiters; career counseling; periodic auditing of affirmative action programs and activities; and development of reasonable procedures between the sponsor and the employers of apprentices to ensure that equal employment opportunity is being granted including reporting systems, on site reviews, briefing sessions, etc. The affirmative action programs shall set forth the specific steps the sponsors intend to take in the above areas under this subsection (3). Whenever special circumstances warrant, the council may provide such financial or other assistance from funds available to it for that purpose, as it deems necessary to implement the above requirements.

(4) Goals and timetables.

(a) A sponsor adopting a selection method under WAC 296-04-350 (2) or (3), which determines on the basis of analysis described in subdivision (e) that it has deficiencies in terms of underutilization of minorities and/or women (minority and nonminority) in the craft or crafts represented by the program shall include in its affirmative action plan percentage goals and timetables for the admission of minority and/or female (minority and nonminority) applicants into the eligibility pool.

(b) A sponsor adopting a selection method under WAC 296-04-350 (4) or (5), which determines on the basis of the analysis described in subdivision (e) that it has deficiencies in terms of the underutilization of the minorities and/or women in the craft or crafts represented by the program shall include in its affirmative action plan percentage goals and timetables for the selection of minority and female (minority and nonminority) applicants for the apprenticeship program.

(c) "Underutilization" as used in this subsection refers to the situation where there are fewer minorities and/or women (minority and nonminority) in the particular craft or crafts represented by the program than would reasonably be expected in view of an analysis of the specific factors in subdivision (e) of this section. Where, on the basis of the analysis, the sponsor determines that it has no deficiencies, no goals and timetables need be established. However, where no goals and timetables are established, the affirmative action plan shall include a detailed explanation why no goals and timetables have been established.

(d) Where the sponsor fails to submit goals and timetables as part of its affirmative action plan or submits goals or timetables which are unacceptable, and the council determines that the sponsor has deficiencies in terms of underutilization of minorities or women (minority and nonminority) within the meaning of this section, the council shall establish goals and timetables applicable to the sponsor for the admission of minority and female (minority and nonminority) applicants into the eligibility pool for selection of apprentices, as appropriate. The sponsor shall make good faith efforts to obtain these goals and timetables in accordance with the requirements of this section.

(e) Analysis to determine if deficiencies exist. The sponsor's determination as to whether goals and timetables shall be established shall be based on an analysis of at least the following factors, which analysis shall be set forth in writing as part of the affirmative action plan.

(i) The percentage of the working age minority and female (minority and nonminority) population in the program sponsor's labor market area;

(ii) The percentage of the minority and female (minority and nonminority) labor force in the program sponsor's labor market area;

(iii) The percentage of the minority and female (minority and nonminority) participation as apprentices in the particular craft as compared with the percentage of minorities and women (minority and nonminority) in the labor force in the program sponsor's labor market area;

(iv) The percentage of minority and female (minority and nonminority) participation as journeymen employed by the employer or employers participating in the program as compared with the percentage of minorities and women (minority and nonminority) in the sponsor's labor market area and the extent to which the sponsor should be expected to correct any deficiencies through the achievement of goals and timetables for the selection of apprentices;

(v) The general availability of minorities and women (minority and nonminority) with present or potential capacity for apprenticeship in the program sponsor's labor market area.

In calculating the percentage of minority and female labor force or populations in the program sponsor's labor market in (e)(i) through (v) of this subsection or in calculating any other factors which are included in the analysis set forth in this section, the numerator shall be the number of women or minorities in that particular classification who are in the labor force or population; the denominator shall be the total labor force or population.

(f) Establishment and attainment of goals and timetables. The goals and timetables shall be established on the basis of the sponsor's analysis of its underutilization of minorities and women and its entire affirmative action program. A single goal for minorities and a separate single goal for women is acceptable unless a particular group is employed in a substantially disparate manner in which case separate goals shall be established for such group. Such separate goals would be required, for example, if a specific minority group of women were underutilized even though the sponsor had achieved its standards for women generally. In establishing the goals, the sponsor should consider the results which could be reasonably expected from its good faith efforts to make its overall affirmative action program work. Compliance with these requirements shall be determined by whether the sponsor has met its goals within its timetable, or failing that, whether it has made good faith efforts to meet its goals and timetables. Its "good faith efforts" shall be judged by whether it is following its affirmative action program and attempting to make it work, including evaluation and changes in its program where necessary to attain the maximum effectiveness toward the attainment of its goals. However, in order to deal fairly with program sponsors, and with women who are entitled to protection under the goals and timetables requirements, during the first twelve months after the effective date of these regulations, the program sponsor would generally be expected to set a goal for women for the entering year class at a rate which is not less than fifty percent of the proportion women are of the workforce in the program sponsor's labor market area and set a percentage goal for women in each class beyond the entering class which is not less than the participation rate of women currently in the preceding class. At the end of the first twelve months after the effective date of these regulations, sponsors are expected to make appropriate adjustments in goal levels. See WAC 296-04-370(2).

(g) Data and information. The supervisor shall make available to program sponsors data and information on minority and female (minority and nonminority) labor force characteristics provided by the employment security department or the office of financial management for each standard metropolitan statistical area, and for other special areas as appropriate.

The data to be used in calculating percentages of apprentices and journeymen as required by (e)(ii) and (iii) of this subsection shall be derived from records maintained by apprenticeship committees.

[Statutory Authority: RCW 49.04.010 and 49.04.100 - 49.04.130. 90-10-019, § 296-04-340, filed 4/23/90, effective 5/24/90. Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-340, filed 11/14/78; Order 77-3, § 296-04-340, filed 1/25/77; Order 71-13, § 296-04-340, filed 10/28/71.]

WAC 296-04-350 Selection of apprentices. (1) **Obligations of sponsors.** In addition to development of a written affirmative action plan to ensure that minorities and women have an equal opportunity for selection as apprentices and otherwise ensure the prompt achievement of full and equal opportunity in apprenticeship, each sponsor shall further provide in its affirmative action program that the selection of apprentices shall be made under one of the methods specified in the following subsections (2) through (5) of this section.

(2) **Selection methods.** The sponsor shall adopt one of the following methods of selecting apprentices:

(a) Selection on basis of rank from pool of eligible applicants. A sponsor may select apprentices from a pool of eligible applicants created in accordance with the requirements of subdivision (c) of this subsection on the basis of the rank order of scores of applicants on one or more qualification standards where there is a significant statistical relationship between rank order of scores and performance in the apprenticeship program. In demonstrating such relationship, the sponsor shall follow the procedure set forth in guidelines on employee selection procedures published at 41 CFR Part 60-3.

(b) Requirements. The sponsor adopting this method of selecting apprentices shall meet the requirements of subdivisions (c) through (g) of this subsection.

(c) Creation of pool of eligibles. A pool of eligibles shall be created from applicants who meet the qualifications of minimum legal working age and the sponsor's minimum physical requirements; or from applicants who meet qualification standards in addition to minimum legal working age: *Provided,* That any additional qualification standards conform with the following requirements:

(i) Qualification standards. The qualification standards and the procedures for determining such qualification stan-

dards shall be stated in detail and shall provide criteria for the specific factors and attributes to be considered in evaluating applicants for admission to the pool. The score required under each qualification standard for admission to the pool shall also be specified. All qualification standards, and the score required on any standard for admission to the pool, shall be directly related to job performance, as shown by a significant statistical relationship between the score required for admission to the pool, and performance in the apprenticeship program. In demonstrating such relationship, the sponsor shall follow the procedures set forth in 41 CFR Part 60-3. Qualifications shall be considered as separately required so that the failure of an applicant to obtain the specified score under a single qualification standard shall disqualify the applicant from admission to the pool.

(ii) Aptitude tests. Any qualification standard for admission to the pool consisting of aptitude test scores shall be directly related to job performance, as shown by significant statistical relationships between the score on the aptitude tests required for admission to the pool, and performance in the apprenticeship program. In determining such relationship, the sponsor shall follow the procedures set forth in 41 CFR Part 60-3. The requirements of this item (ii) shall also be applicable to aptitude tests utilized by a program sponsor which are administered by a state employment agency, or any other person, agency or organization engaged in the selection or evaluation of personnel. A national test developed and administered by a national joint apprenticeship committee will not be approved by the United States Department of Labor unless such test meets the requirements of this subdivision.

(iii) Educational attainments. All educational attainments or achievements as qualifications for admission to the pool shall be directly related to job performance, as shown by a significant statistical relationship between the score required for admission to the pool and performance in the apprenticeship program. In demonstrating such relationship the sponsor shall meet the requirements of 41 CFR Part 60-3. School records or a passing grade on the general educational development tests recognized by the state or local public instruction authority shall be evidence of educational achievement. Education requirements shall be applied uniformly to all applicants.

(d) Oral interviews. Oral interviews shall not be used as a qualification standard for admission into an eligibility pool. However, once an applicant is placed in the eligibility pool, and prior to selection for apprenticeship from the pool, he or she may be required to submit to an oral interview. Oral interviews shall be limited to such objective questions as may be required to determine the fitness of applicants to enter the apprenticeship program, but shall not include questions relating to qualifications previously determined in gaining entrance to the eligibility pool. When an oral interview is used, each interviewer shall record the questions and the general nature of the applicant's answers, and shall prepare a summary of any conclusions. Each applicant rejected from the pool of eligibles on the basis of an oral interview shall be given a written statement of such rejection, the reasons therefor, and the appeal rights available to the applicant.

(e) Notification of applicants. All applicants who meet the requirements for admission shall be notified and placed in the eligibility pool. The program sponsors shall give each rejected applicant who is not selected for the pool or the program notice of his or her rejection, including the reason for the rejection, the requirements for admission to the pool of [the] eligibles, and the appeal rights available to the applicant.

(f) Goals and timetables. The sponsor shall establish, where required by WAC 296-04-340(4), percentage goals and timetables for the admission of minorities and women (minority and nonminority) into the pool of eligibles in accordance with the provisions of WAC 296-04-340 (4)(a) through (f).

(g) Compliance. A sponsor shall be deemed to be in compliance with its commitments under subdivision (f) of this subsection (2) if it meets its goals or timetables or if it makes a good faith effort to meet these goals and timetables. In the event of the failure of the sponsor to meet its goals and timetables, it shall be given an opportunity to demonstrate that it has made every "good faith effort" to meet its commitments (see WAC 296-04-340 (4)(f)). All the actions for the sponsor shall be reviewed and evaluated in determining whether such good faith efforts have been made.

(3) **Random selection from pool of eligible applicants.**

(a) Selection. A sponsor may select apprentices from a pool of eligible applicants on a random basis. The method of random selection is subject to approval by the council. Supervision of the random selection process shall be by an impartial person or persons selected by the sponsor, but not associated with the administration of the apprenticeship program. The time and place of the selection, and the number of apprentices to be selected, shall be announced. The place of the selection shall be open to all applicants and the public. The names of apprentices drawn by this method shall be posted immediately following the selection at the program sponsor's place of business.

(b) Requirements. The sponsor adopting this method of selecting apprentices shall meet the requirements of subdivisions (c) through (e) of subsection (2) of this section relating to the creation of a pool of eligibles, oral interviews and notification of applicants.

(c) Goals and timetables. The sponsor shall establish where required by WAC 296-04-340(4), percentage goals and timetables for the admission of minorities and women (minority and nonminority) into the pool of eligibles in accordance with the provisions of WAC 296-04-340 (4)(d) through (f).

(d) Compliance. Determinations as to the sponsor's compliance with its obligations under these rules shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section.

(4) **Selection from pool of current employees.**

(a) Selection. A sponsor may select apprentices from an eligibility pool of the workers already employed by the program sponsor in a manner prescribed by a collective bargaining agreement where such exists, or by the sponsor's established promotion policy. The sponsor adopting this method of selecting apprentices shall establish goals and timetables for the selection of minority and female apprentices, unless the sponsor concludes, in accordance with the provisions of WAC 296-04-340 (4)(d) through (f), that it does not have deficiencies in terms of underutilization of minorities and/or women (minority and nonminority) in the

apprenticeship of journeymen crafts represented by the program.

(b) Compliance. The determination as to the sponsor's compliance with its obligations under these regulations shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section.

(5) **Alternative selection methods.** Selection. The sponsor may select apprentices by means of any other method, including its present selection method: *Provided,* That the sponsor meets the following requirements:

(a) Selection method and goals and timetables. Within ninety days of the effective date of these rules, the sponsor shall submit to the council, through its supervisor, the revised selection method it proposes to use along with the rest of its written affirmative action program including, where required by WAC 296-04-340(4), its percentage goals and timetables for the selection of minority and/or female (minority and nonminority) applicants for apprenticeship and its written analysis, upon which such goals and timetables, or lack thereof, are based. The establishment of goals and timetables shall be in accordance with the provisions of WAC 296-04-340 (4)(d) through (f). The sponsor may not implement any such [selection] method [until the council has approved the selection method] as meeting the requirements of subdivision (b) of this subsection (5) and has approved the remainder of its affirmative action program including its goals and timetables. If the council fails to act upon the selection method and the affirmative action program within thirty days of its submission, the sponsor then may implement the selection method until acted upon by the council.

(b) Qualification standards. Apprentices shall be selected on the basis of objective and specific qualification standards. Examples of such standards are fair aptitude tests, school diplomas or equivalent, occupationally essential health requirements, fair interviews, school grades, and previous work experience. Where interviews are used, adequate records shall be kept including a brief summary of each interview and the conclusions on each of the specific factors, e.g., motivation, ambition, and willingness to accept direction which are part of the total judgment. In applying any such standards, the sponsor shall meet the requirements of 41 CFR Part 60-3.

(6) **Compliance.** Determination as to the sponsor's compliance with its obligations under these regulations shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section. Where a sponsor, despite its good faith efforts, fails to meet its goals and timetables within a reasonable period of time, the sponsor may be required to make appropriate changes in its affirmative action program to the extent necessary to obtain maximum effectiveness toward the attainment of its goals. The sponsor may also be required to develop and adopt an alternative selection method, including a method prescribed by the council where it is determined that the failure of the sponsor to meet its goals is attributable in substantial part to the selection method. Where the sponsor's failure to meet its goals is attributable in substantial part to its use of the qualification standard which has adversely affected the opportunities of minorities and/or women (minority and nonminority) for apprenticeship, the sponsor may be required to demonstrate that such qualification standard is directly related to job performance, in accordance with the provisions of subsection (2), subdivision (c), item (i), of this section.

[Statutory Authority: RCW 49.04.010 and 49.04.100 - 49.04.130. 90-10-019, § 296-04-350, filed 4/23/90, effective 5/24/90. Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-350, filed 11/14/78; Order 71-13, § 296-04-350, filed 10/28/71.]

WAC 296-04-351 Employer's responsibility. In affirmative action programs under WAC 296-04-350(5) alternate selection methods where the employer does the selecting, the employer shall sign an agreement assuming responsibility for adherence to the council's affirmative action plan contained in these regulations and 29 CFR Part 30.

[Order 76-4, § 296-04-351, filed 2/20/76.]

WAC 296-04-360 Existing lists of eligibles and public notice. A sponsor adopting a selection method under WAC 296-04-350 (2) or (3), and a sponsor adopting a selection method under WAC 296-04-350(5), who determines that there are [few] [fewer] minorities and/or women (minority and nonminority) on its existing list of eligibles than would be reasonably expected in view of the analysis described in WAC 296-04-340 (4)(e), shall discard all existing eligibility lists upon adoption of the selection methods required by these rules. New eligibility pools shall be established and lists of eligibility pools shall be posted at the sponsor's place of business. Sponsors shall establish a reasonable period of not less than two weeks for accepting applications for admission to the apprenticeship program. There shall be at least 30 days of public notice in advance of the earliest date for application for admission to the apprenticeship program (see WAC 296-04-340(3) on affirmative action with respect to dissemination of information). Applicants who have been placed in a pool of eligibles shall be retained on lists of eligibles subject to selection for a period of two years. Applicants may be removed from the list at an earlier date by their request or following their failure to respond to [an] apprentice job opportunity given by certified mail, return receipt requested. Applicants who have been accepted in the program shall be afforded a reasonable period of time in light of the customs and practices of the industry for reporting for work. All applicants shall be treated equally in determining such period of time. It shall be the responsibility of the applicant to keep the sponsor informed of his or her current mailing address. Upon request, a sponsor may restore to the list of eligibles applicants who have been removed from the list or who have failed to respond to an apprenticeship job opportunity.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-360, filed 11/14/78; Order 71-13, § 296-04-360, filed 10/28/71.]

Reviser's note: RCW 34.05.395 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-370 Records. Obligations of sponsors. (1) Each sponsor shall keep adequate records including a summary of the qualifications of each applicant, the basis for evaluation and for selection or rejection of each applicant,

the records pertaining to the interviews of applicants, the original application for each applicant, information relative to the operation of the apprenticeship program, including but not limited to job assignment, promotion, demotion, layoff, or termination, rates of pay, or other forms of compensation or conditions of work, and separately, hours of training provided, and any other records pertinent to the determination of compliance with these regulations as may be required by the council. The records pertaining to the individual applicants, selected or rejected, shall be maintained in such manner as to permit identification of minority and female (minority and nonminority) participants.

(2) **Affirmative action plans.** Each sponsor must retain a statement of its affirmative action plan required by WAC 296-04-340 for the prompt achievement of full and equal opportunity in apprenticeship, including all data and analysis made pursuant to the requirements of WAC 296-04-340. Sponsors shall review their affirmative action plans annually and update them where necessary, including the goals and timetables.

Documentation necessary to establish a sponsor's good faith effort at implementation of its affirmative action plan also shall be maintained by each sponsor. The documentation shall include:

(a) Who was contacted;

(b) When the contacts were made;

(c) Where the contacts occurred;

(d) How the contacts were made; and

(e) The content of each contact.

(3) **Qualification standards.** Each sponsor must maintain evidence that its qualification standards have been validated in accordance with the requirements set forth in WAC 296-04-350(2).

(4) **Records of state apprenticeship council.** The records of the council shall be kept in the offices of the supervisor, which records shall include registration requirements, individual program standards, registration records, program compliance reviews and investigations, and any other records pertinent to the determination of compliance with these rules, as may be required by the United States Department of Labor, and shall report to the department as may be required.

(5) **Maintenance of records.** The records required by these rules (WAC 296-04-300 through 296-04-480) and any other information relevant to compliance with Part 30 of Title 29 of the Code of Federal Regulations shall be maintained for five years and made available upon request to the United States Department of Labor or other authorized representative.

[Statutory Authority: RCW 49.04.010 and 49.04.100 - 49.04.130. 90-10-019, § 296-04-370, filed 4/23/90, effective 5/24/90. Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-370, filed 11/14/78; Order 71-13, § 296-04-370, filed 10/28/71.]

WAC 296-04-380 Compliance reviews. (1) Conduct of compliance reviews. The supervisor shall regularly conduct systematic reviews of the apprenticeship programs in order to determine the extent to which sponsors are complying with these rules and will also conduct compliance reviews when circumstances, including a receipt of complaints not referred to a private review body, pursuant to WAC 296-04-400 (2)(a), so warrant, and take appropriate action regarding programs which are not in compliance with the requirements of these rules. Compliance reviews will consist of comprehensive analysis and evaluations of each aspect of the apprenticeship program, including on-site investigations and audits.

(2) **Reregistration.** Sponsors seeking reregistration shall be subject to a compliance review as described in subsection (1) of this section by the supervisor as part of the reregistration process.

(3) **New registrations.** Sponsors seeking new registrations shall be subject to a compliance review as described in subsection (1) of this section by the supervisor as part of the registration process.

(4) **Voluntary compliance.** Where the compliance review indicates that the sponsor is not operating in accordance with these rules, the supervisor shall notify the sponsor in writing of the results of the review and make a reasonable effort to secure voluntary compliance on the part of the program sponsor within a reasonable time before undertaking sanctions under WAC 296-04-420. In the case of sponsors seeking new registrations, the supervisor will provide appropriate recommendations to the sponsor to enable it to achieve compliance for registration purposes.

[Order 71-13, § 296-04-380, filed 10/28/71.]

WAC 296-04-390 Noncompliance with federal and state equal opportunity requirements. A pattern or practice of noncompliance by a sponsor (or where the sponsor is a joint apprenticeship committee, by one of the parties represented on each committee) with federal or state laws or regulations requiring equal opportunity may be grounds for the imposition of sanctions in accordance with WAC 296-04-420, if such noncompliance is related to the equal employment opportunity of apprentices and/or graduates of such an apprenticeship program under these rules. The sponsor shall take affirmative steps to assist and cooperate with employers and unions in fulfilling their equal employment opportunity obligations.

[Order 71-13, § 296-04-390, filed 10/28/71.]

WAC 296-04-400 Complaint procedure. (1) **Filing.**

(a) Any apprentice or applicant for apprenticeship who believes that he or she has been discriminated against on the basis of race, color, religion, national origin, or sex with regard to apprenticeship or that the equal opportunity standards with respect to his or her selection have not been followed in the operation of an apprenticeship program may, personally or through an authorized representative, file a complaint with the council, or, at the apprentice's or applicant's election, with a private review body established pursuant to subdivision (c) of this subsection (1). The complaint shall be in writing and shall be signed by the complainant. It must include the name, address, and telephone number of the person allegedly discriminated against, the program sponsor involved, and a brief description of the circumstances of the failure to apply the equal opportunity standards provided for in these rules.

(b) The complaint must be filed not later than 180 days from the date of the alleged discrimination or specified failure to follow the equal opportunity standards; and, in the case of complaints filed directly with review bodies designat-

ed by program sponsors to review such complaints, any referral of such complaint by the complainant to the council must occur within the time limitation stated above or 30 days from the final decision of such review body, whichever is later. The time may be extended by the council for good cause shown.

(c) Sponsors are encouraged to establish fair, speedy, and effective procedures for a review body to consider complaints of failure to follow the equal opportunity standards. A private review body established by the program sponsor for this purpose should number three or more responsible persons from the community serving in this capacity without compensation. Members of the review body should not be directly associated with the administration of an apprenticeship program. Sponsors may join together in establishing a review body to serve the needs of programs within the community.

(2) **Processing of complaints.**

(a) When the sponsor has designated a review body for reviewing complaints, the council, unless the complainant has indicated otherwise or unless the council has determined that the review body will not effectively enforce the equal opportunity standards, the supervisor, upon receiving a complaint, shall refer the complaint to the review body.

(b) The supervisor shall, within 30 days following the referral of the complaint to the review body, obtain the reports from the complainant and the review body as to the disposition of the complaint. If the complaint has been satisfactorily adjusted and there is no other indication of failure to apply equal opportunity standards, the case shall be closed and the parties appropriately informed.

(c) When a complaint has not been resolved by the review body within 90 days or where, despite satisfactory resolution of the particular complaint by the review body, there is evidence that equal opportunity practices of the apprenticeship program are not in accordance with these rules, the council may conduct such compliance review as found necessary, and will take all necessary steps to resolve the complaint.

(3) Where no review body exists, the council may conduct such compliance review as found necessary in order to determine the facts of the complaint, and obtain such other information relating to compliance with these regulations as the circumstances warrant.

(4) Sponsors shall provide written notice of the above complaint procedure to all applicants for apprenticeship and all apprentices.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-400, filed 11/14/78; Order 71-13, § 296-04-400, filed 10/28/71.]

WAC 296-04-410 Adjustments in schedule for compliance review or complaint processing. If in the judgment of the council, a particular situation warrants and requires special processing, and either expedited or extended determination, it shall take the steps necessary to permit such determination, if it finds that no person or party affected by such determination will be prejudiced by such special processing.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-410, filed 11/14/78; Order 71-13, § 296-04-410, filed 10/28/71.]

WAC 296-04-420 Sanctions. (1) Where the supervisor, as a result of a compliance review or other reason, determines that there is reasonable cause to believe that an apprenticeship program is not operating in accordance with these rules and voluntary corrective action has not been taken by the program sponsor, the council shall institute proceedings to deregister the program or it shall refer the matter to the equal employment opportunity commission or to the attorney general with recommendations for the institution of a court action under Title VII of the Civil Rights Act of 1964, as amended, or to the attorney general for other court action as authorized by law.

(2) The deregistration proceedings shall be conducted according to the following procedures:

(a) The council shall notify the sponsor, in writing, that a determination of reasonable cause has been made under subsection (1) of this section and that the apprenticeship program may be deregistered unless, within 15 days of the receipt of the notice, the sponsor requests a hearing. The notification shall specify the facts on which the determination is based.

(b) If within 15 days of the receipt of the notice provided for in subdivision (a) of this subsection (2), the sponsor mails a request for hearing, the supervisor shall convene an appropriate hearing.

(c) The council shall make a final decision on the basis of the record before it, which shall consist of the compliance review file and other evidence presented. In its discretion, the council may allow the sponsor a reasonable time to achieve voluntary corrective action. If the council's decision is that the apprenticeship program is not operating in accordance with these rules, the apprenticeship program may be deregistered. In each case in which deregistration is ordered, the council shall make public notice of the order and shall notify the sponsor and the complainant, if any.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-420, filed 11/14/78; Order 76-4, § 296-04-420, filed 2/20/76; Order 71-13, § 296-04-420, filed 10/28/71.]

WAC 296-04-430 Reinstatement of program registration. Any apprenticeship program deregistered pursuant to these rules may be reinstated upon presentation of adequate evidence to the council that the apprenticeship program is operating in accordance with these rules.

[Order 71-13, § 296-04-430, filed 10/28/71.]

WAC 296-04-440 Adoption of consistent state plans. All apprenticeship programs registered with the council shall comply with the requirements of WAC 296-04-300 through 296-04-480 within 90 days after the effective date of these rules.

(1) The United States Department of Labor shall have authority to conduct compliance reviews to determine whether the Washington state affirmative action plan or any state apprenticeship program registered with the council is being administered or operated in accordance with the provisions of Title 29, Part 30 of the Code of Federal Regulations.

(2) It shall be the responsibility of the council to take the necessary action to bring a noncomplying program into compliance with these rules. In the event the council fails

to fulfill this responsibility, the secretary of the United States Department of Labor may withdraw the recognition for federal purposes of any or all state apprenticeship programs, in accordance with the procedures for deregistration of programs registered by the department, or refer the matter to the attorney general of the United States with a recommendation for the institution by the attorney general of a court action under Title 7 of the Civil Rights Act of 1964.

(3) The council shall notify the United States Department of Labor of any state apprenticeship program disapproved and deregistered by it.

(4) Any state apprenticeship program disapproved and deregistered by the council for noncompliance with the requirements of these rules or Title 29, Part 30 of the Code of Federal Regulations may, within 15 days of the receipt of the notice of disapproval and deregistration, appeal to the United States Department of Labor to set aside the determination of the state apprenticeship and training council. The department shall make its determination on the basis of the record. The department may grant the state program sponsor, the state apprenticeship and training council, and the complainant, if any, the opportunity to present oral or written argument.

(5) **Withdrawal of recognition.** Whenever the United States Department of Labor determines that reasonable cause exists to believe that the council has not adopted or implemented a plan in accordance with the equal opportunity requirements of Title 29, Part 30 of the Code of Federal Regulations, it shall give notice to the council and to appropriate state sponsors of this determination, stating specifically wherein the state's plan failed to meet such requirements and the United States Department of Labor proposes to withdraw recognition for federal purposes from the state apprenticeship and training council unless within 15 days of the receipt of the notice, the council complies with the provisions of Title 29, Part 30, of the Code of Federal Regulations or mails a request for a hearing to the secretary of the United States Department of Labor.

(6) If within 15 days of the receipt of the notice provided for in subsection (5) of this section, the council neither complies with the provisions of Title 29, Part 30 of the Code of Federal Regulations, nor mails a request for a hearing, the secretary of the United States Department of Labor shall notify the council of the withdrawal of recognition.

(7) If within 15 days of the receipt of the notice provided for in subsection (5) of this section, the council mails a request for a hearing, the secretary of the United States Department of Labor shall proceed in accordance with Title 29, Section 30.16 of the Code of Federal Regulations.

(8) If a hearing is conducted in accordance with Title 29, Section 30.16 of the Code of Federal Regulations, the secretary of the United States Department of Labor upon receipt of the proposed findings and recommended decision of the hearing officer shall make a final decision whether the council has adopted or implemented a plan in accordance with equal opportunity requirements of Title 29 of Part 30 of the Code of Federal Regulations.

(9) If the secretary of the United States Department of Labor determines to withdraw from recognition, for federal purposes, from the state apprenticeship and training council, the secretary shall notify the council of this determination. The secretary shall also notify the state's sponsors that within 30 days of the receipt of the notice the United States Department of Labor shall cease to recognize, for federal purposes, each state apprenticeship program unless the state program sponsor requests registration with the department. Such registration may be granted contingent upon finding that the state apprenticeship and training program is operating in accordance with the requirements of Title 29, Part 30 of the Code of Federal Regulations.

(10) If the secretary of the United States Department of Labor determines to withdraw recognition, for federal purposes, from the state apprenticeship [and training council], such recognition may be reinstated upon presentation of adequate evidence to the secretary of the United States Department of Labor that the council has adopted and implemented a plan carrying out the equal opportunity requirements of Title 29, Part 30 of the Code of Federal Regulations.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-440, filed 11/14/78; Order 71-13, § 296-04-440, filed 10/28/71.]

Reviser's note: RCW 34.05.395 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-460 Intimidatory or retaliatory acts. Any intimidation, threat, coercion, or retaliation by or with the approval of any sponsor against any person for the purpose of interfering with any right or privilege secured by Title VII of the Civil Rights Act of 1964, as amended Executive Order 11246, as amended, or because he or she has made a complaint, testified, assisted or participated in any manner in any investigation proceeding, or hearing under these rules or Title 29, Part 30 of the Code of Federal Regulations, shall be considered noncompliance with the equal opportunity standards of these rules. The identity of complainants shall be kept confidential except to the extent necessary to carry out the purpose of these rules, including the conduct of any investigation, hearing, or judicial proceeding arising therefrom.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-460, filed 11/14/78; Order 71-13, § 296-04-460, filed 10/28/71.]

WAC 296-04-470 Nondiscrimination. The commitments contained in the sponsor's affirmative action program are not intended and shall not be used to discriminate against any qualified applicant or apprentice on the basis of race, color, religion, national origin, or sex.

[Order 71-13, § 296-04-470, filed 10/28/71.]

WAC 296-04-480 Exemptions. Requests for exemption from these rules, or any part thereof, shall be made in writing to the supervisor, and shall contain a statement of reasons supporting the request. The exemptions may be granted for good cause by the council, or the secretary of the United States Department of Labor, and the council shall notify the United States Department of Labor of any such exemptions granted affecting a substantial number of employers and the reasons therefor. These variances are intended to apply only to WAC 296-04-300 through 296-04-

480, the affirmative action plan of the state apprenticeship and training council.

[Order 76-4, § 296-04-480, filed 2/20/76; Order 71-13, § 296-04-480, filed 10/28/71.]

Chapter 296-06 WAC
PUBLIC RECORDS

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-06-060 Substantive rules, general policy statements and interpretations of general applicability. [Order 73-12, § 296-06-060, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-070 Public records available. [Order 73-12, § 296-06-070, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-160 Procedure for copying public records. [Order 73-12, § 296-06-160, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-180 Department final opinions and orders not indexed. [Order 73-12, § 296-06-180, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-190 Instructions to staff in individual cases not indexed. [Order 73-12, § 296-06-190, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-200 Factual staff reports, etc., not indexed in individual cases. [Order 73-12, § 296-06-200, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-210 Correspondence and materials not indexed. [Order 73-12, § 296-06-210, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-220 Communications regarding public records. [Order 73-12, § 296-06-220, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-230 Adoption of form. [Order 73-12, § 296-06-230, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-240 Maintenance of index. [Order 73-11, § 296-06-240, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-990 Appendix A—Form—Department of labor and industries authorization to inspect or copy public records in which an individual has a right of privacy. [Order 73-12, Appendix A (codified as WAC 296-06-990), filed 7/31/73.] Repealed by 90-07-004, filed 3/9/90, effective 4/9/90. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-06-99001 Appendix B—Form—Request for public records under the provisions of chapter 1, Laws of 1973 (Initiative 276). [Order 73-12, Appendix B (codified as WAC 296-06-99001), filed 7/31/73.] Repealed by 90-07-004, filed 3/9/90, effective 4/9/90. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

WAC 296-06-010 Purpose. The department of labor and industries is a department of state government created by RCW 43.17.010. It shall hereafter in this chapter be referred to as the "department." Where appropriate, "department" also refers to its staff and employees. The department promulgates this chapter to ensure compliance with the provisions of chapter 42.17 RCW, and in particular with sections of that act dealing with public records.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-010, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-010, filed 9/28/76; Order 73-12, § 296-06-010, filed 7/31/73.]

WAC 296-06-020 Description of organization of the department. (1) **Central organization.** The chief executive officer of the department is the director of labor and industries, hereinafter called "director." He or she is appointed by the governor with the consent of the senate to hold office at the pleasure of the governor. The department is organized in five divisions: Industrial insurance, industrial safety and health, industrial relations, apprenticeship, and building and construction safety inspection services. Each division is responsible to a deputy director or assistant director appointed by the director, although the industrial relations and apprenticeship divisions both report to one assistant director, whose appointment as the head of apprenticeship must be confirmed by the Washington state apprenticeship and training council, the members of which are also appointed by the director. This combined industrial relations and apprenticeship division, which includes a section to administer the Crime Victims Act, chapter 7.68 RCW, is known as the employment standards, apprenticeship and crime victims compensation division. Major policy decisions, rule-making, and the primary administrative functions of the department are carried out by the department's central organizations in Olympia.

(2) **Field organization.**

(a) The department maintains service locations, or major field offices, in seventeen cities other than Olympia. These service locations are grouped into six regions throughout the state, each of which is headed by a regional field service manager. In addition, certain programs operate field offices in other cities, but these are not complete service locations and are not required to keep complete policy manuals and other records available for public inspection.

(b) The department's rehabilitation center in Tukwila is headed by a superintendent.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-020, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-020, filed 9/28/76; Order 73-12, § 296-06-020, filed 7/31/73.]

WAC 296-06-030 Location of established places where information about the department may be obtained and department's public records inspected and copied. (1) **Olympia office.**

(a) The office of the director, the administrative office of the department, the main offices of the division of industrial insurance, and the office of the public records officer are in the General Administration Building, Olympia, Washington. The main offices of the other divisions are located at the following places: Industrial Safety and Health at 805 Plum Street S.E., Olympia, Washington; Apprentice-

ship, Employment Standards, and Crime Victims Compensation at 925 Plum Street S.E., Olympia, Washington; and Building and Construction Safety Inspection Services at 406 Legion Way S.E., Olympia, Washington. General information about the department and its divisions may be obtained at these places.

(2) **Field offices.**

(a) General information about the department may also be obtained at its service locations, or major field offices, at the following places:

Aberdeen, P.O. Box 66,
2700 Simpson Avenue, 98520-0013

Bellingham, P.O. Box 608,
2500 Elm Street, Suite F, 98227

Bremerton, 4841 Auto Center Way,
Suite 201, 98312-3440

Ephrata,
21 "C" Street, Southwest, 98823-1895

Everett, P.O. Box 67,
8625 Evergreen Way, Suite 250, 98206

Kelso,
711 Vine Street, 98626-2621

Kennewick, 500 North Morain,
Suite 1110, 99336

Mount Vernon,
1220 Memorial Highway, 98273-3262

Okanogan, P.O. Box 632,
1234 2nd Avenue South, 98840

Port Angeles,
1026 East First Street, Suite 1, 98362

Seattle,
300 West Harrison, 98119

Spokane,
TAF-C33, E. 3901 Main, 99220

Tacoma, Room 305, Public Service Building,
1305 Tacoma Avenue South, 98402-1988

Vancouver,
10401 N.E., 4th Plain, 98662

Walla Walla,
1815 Portland Avenue, Suite 2, 99362

Wenatchee,
123 Ohme Garden Road, 98801

Yakima,
1716 South 16th Avenue, 98902-5713

(b) Information about the extended care services offered injured workers, including physical therapy, special instruction, or vocational counseling, may be obtained from the department's Rehabilitation Center at 12806 Gateway Drive, Tukwila, Washington 98168.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-030, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-030, filed 9/28/76; Order 73-12, § 296-06-030, filed 7/31/73.]

WAC 296-06-040 Operations and procedures. The general course and method of channeling and determining the operations of the five divisions of the department and the nature of requirements of all formal and informal procedures connected therewith are summarized in the following subsections:

(1) **Industrial insurance.** This division administers medical care and payment of disability compensation for workers (or their dependents or survivors) sustaining job injuries or occupational diseases. Virtually all employers in the state must provide this industrial insurance coverage. The medical program of the state fund is funded through payments by employers and employees. The disability payments by the state fund are funded by premiums collected from employers. Descriptions of procedures to be followed by employers and employees are outlined in department publications entitled *Employers' Guide to Industrial Insurance* and *Workers' Guide to Industrial Insurance Benefits.*

In order to ensure that premium costs are equitably distributed, the division sets rates, determines classifications, rates individual firms based on claims experience, and periodically audits businesses to ensure accurate reporting and premium payment. Information about the records required during an industrial insurance audit can be found in the department publication *Preparing for Your Audit.*

The division also provides guidance to individual employers and groups of employers in controlling industrial insurance premiums through better claims management, return-to-work efforts, and effective safety programs, as well as through a financial incentive program known as retrospective rating. Further information is available in *Guide to Loss Control* and *Retrospective Rating.*

The department also certifies certain employers to become "self-insured," which means that they are permitted to pay the legally defined industrial insurance benefits from their own funds. After the department certifies an employer as a self-insurer, it monitors all claims for injury benefits to make certain employees receive all rightful benefits. Descriptions of procedures to be followed by self-insured employers and their employees are outlined in *Employers' Guide to Self-insurance* and *Employees of Self-insured Businesses: Guide to Industrial Insurance Benefits.*

(2) **Industrial safety and health.** This division endeavors to prevent job injuries and illnesses by adopting and enforcing safety and health standards and by training employers and employees in safe working procedures. It administers the Washington Industrial Safety and Health Act (WISHA), operating under a state plan agreement with the federal Occupational Safety and Health Administration (OSHA). Employer and employee procedures and responsibilities are outlined in the department's publications, *A Guide to WISHA* and *Workplace Safety and Health Standards.* Information about voluntary consultations to improve workplace safety can be found in *Free. No Fault. No Hassle.,* and reporting workplace accidents to OSHA is outlined in *Injury and Illness Recordkeeping Requirements.*

(3) **Employment standards, apprenticeship and crime victims compensation.** The industrial relations, or employment standards, portion of this division administers the laws regulating wages, hours, and working conditions. It also

enforces the minimum wage and family care laws and may assist in the collection of claims for unpaid wages. The industrial statistician determines the "prevailing rate of wage" on public works contracts and gathers information on wages and conditions of labor in the state, the consumer price index, standard family budgets, and manpower data on the labor force, employment, unemployment, and earnings. The section headed by the supervisor of employment standards administers the state employment standard designed to protect the health, safety, and welfare of the vast majority of employees. This section also issues minor work permits designed to protect young workers from exploitation and hazardous environments. More information on this subject can be found in *Youth in the Job Force: A Guide for Employers and Minor Workers.* Industrial relations agents investigate complaints of violations of employment standards, the minimum wage law and other wage laws; hold conferences between employees and employers; inspect records; make investigations to determine whether or not there have been violations of statutes, rules, or regulations; and suggest remedial actions.

The apprenticeship portion of this division, with the Washington state apprenticeship and training council, administers the apprenticeship training law for those persons desiring to become skilled in any one of various trades, crafts, and services. Local joint apprenticeship committees and program sponsors throughout the state are responsible for the actual training. This division acts as a liaison between theses committees and the council to make certain that the policies of the council are followed uniformly. The division also administers on-the-job training programs for those persons training in occupations other than occupations in which apprenticeship is an option.

The crime victims compensation section of this division pays medical and disability benefits to innocent victims (or to their dependents or survivors) who sustain injuries as a result of criminal acts. Benefit payments and procedures are outlined in the department's publication *Help for Crime Victims.* This section also certifies local prosecutor-based victim-witness units.

(4) **Building and construction safety inspection services.** This division administers programs designed to protect the life, health, and property of the general public. The various sections of this division issue licenses; promulgate rules and regulations; certify standards; and ensure compliance. The division conducts electrical inspections; registers electrical contractors; inspects and regulates the use of boilers and pressure vessels; inspects elevators; ensures compliance with the standards for the manufacture, lease, and sale of mobile homes and recreational vehicles; enforces the statutes, rules, and regulations governing factory-built structures; reviews electrical plans for health care facilities, plans for elevators and other conveyances, and plans for factory-assembled structures; tests and licenses plumbers and electricians; and registers general and specialty contractors.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-040, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-040, filed 9/28/76; Order 73-12, § 296-06-040, filed 7/31/73.]

WAC 296-06-050 Rules of procedure, substantive rules, general policy statements, and interpretations of general applicability. The department's rules of procedures, substantive rules of general applicability, and statements of general policy and interpretations of general applicability adopted as authorized by law are contained in Title 296 WAC.

[Order 76-27, § 296-06-050, filed 9/28/76; Order 73-12, § 296-06-050, filed 7/31/73.]

WAC 296-06-080 Authorization for release of information. Any person having a right of privacy in any public records of the department may authorize the inspection and copying of any such records by persons not otherwise so authorized by providing the department with a signed and dated written authorization describing the records covered by the authorization, and naming the person or persons authorized to inspect and copy. In the event that a department file contains information related to a disease or condition usually transmitted through sexual contact, or to testing for the presence of such a disease, the authorization to release information must be specific to sexually transmitted disease. A general authorization to release information is not adequate for the release of information related to sexually transmitted disease. The department shall make a record of all authorizations to release information. The authorizations shall be immediately attached to such files and records and shall become a part thereof. No such authorization shall be valid until submitted to the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-080, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-080, filed 9/28/76; Order 73-12, § 296-06-080, filed 7/31/73.]

WAC 296-06-090 Public records officer. The department's public records officer shall have charge of its public records. He or she shall have an office in the administrative office of the department at Olympia, Washington. He or she shall be responsible for the enforcement of the department's rules and regulations regarding the release of public records, and shall ensure compliance and cooperation of the department's staff with the public records disclosure requirements of chapter 42.17 RCW. He or she may choose such designees as may be necessary.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-090, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-090, filed 9/28/76; Order 73-12, § 296-06-090, filed 7/31/73.]

WAC 296-06-100 Office hours. The customary office hours of the department's Olympia offices and complete service locations, for the purpose of inspection and copying of any of the department's public records as provided by this chapter, shall be from 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding legal holidays. The only exceptions to this are the Okanogan and Walla Walla service locations, where the customary office hours shall be from 8:00 a.m. to noon and from 1:00 p.m. to 5:00 p.m.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-100, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-100, filed 9/28/76; Order 73-12, § 296-06-100, filed 7/31/73.]

WAC 296-06-110 Requests for public records. Persons requesting opportunity to copy or inspect the department's public records shall follow these procedures:

(1) Informal oral requests may be made to any of the department's full service locations or its office in Olympia.

(2) The department may require a person who has made an informal request to submit a formal written request.

(3) All formal requests shall be submitted by mail or personally to the deputy director or assistant director who heads the division or the section from which records are being requested. If such a request is misdirected, department staff shall forward it to the proper person.

(4) Each formal request shall include the following information:

(a) The name of the person or persons making the request;

(b) The time of day and calendar date on which the request is made;

(c) The nature of the request, including description of the requested records by title, subject matter, date, and other means of enabling the staff of the department to identify the requested records and make them available.

(d) A signed statement that the material will not be used for commercial purposes, in the event that a list of any type is included in the material being requested.

(5) The staff of the department shall assist any person making a request, whether formal or informal, in identifying the requested record or records but in the event the records cannot be identified, the department shall so advise the person making the request, and, in the case of formal requests, return the formal request for resubmission with additional description of the requested records.

(6) When any request is made to inspect and copy material in files and public records where a right of privacy is involved, or when such files and records are exempt by any other provision of law, inspection and copying shall not be permitted until the authorization described in WAC 296-06-080, together with a formal request, is presented to the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-110, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-110, filed 9/28/76; Order 73-12, § 296-06-110, filed 7/31/73.]

WAC 296-06-120 Copying and fees. Where copies of public records are requested, the department may charge a fee, to be set by the public records officer, for reimbursement of its actual costs incident to such a request. The fees the contractor registration section charges for copies of material from a contractor's file are set out in WAC 296-200-900. Whenever copies of public records are mailed to the person making the request, the department may require reimbursement for postage costs. All copies made at the request of persons desiring copies on copy equipment of the department will be made by department staff at times when the making of such copies will not unreasonably disrupt the operations of the department. If the records to be copied contain information that would violate any right of personal privacy, the department staff member shall prevent such information from appearing on any copy. Where the use of such equipment does not harm the public records or impede the normal work of the department, those requesting copies of public records may use their own copying equipment and paper without charge, but in such event the department staff will supervise the copying at all times.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-120, filed 3/9/90, effective 4/9/90. Statutory Authority: RCW 18.27.040, 42.17.290 and 42.17.300. 82-18-026 (Order 82-26), § 296-06-120, filed 8/25/82; Order 76-27, § 296-06-120, filed 9/28/76; Order 73-12, § 296-06-120, filed 7/31/73.]

WAC 296-06-130 Denials of requests for public records. Only the public records officer or his or her designee shall have the power to deny a request for public records. Action on all such requests shall be prompt. In cases of informal requests, any member of the department's staff to whom an informal request is made may require the person making the request to submit a formal request or such staff member may bring the matter to the attention of the assistant director or his designee of the division from which records are being requested.

A decision on a formal request may be deferred for a reasonable time but immediate written notice of such deferral shall be given. All denials of requests for public records shall be in written form. All denials shall include a statement specifying the reason for the denial, a statement of any exemption authorizing withholding the record and a brief explanation of how the exemption applies to the record withheld, and the signature of the public records officer or his or her designee.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-130, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-130, filed 9/28/76; Order 73-12, § 296-06-130, filed 7/31/73.]

WAC 296-06-140 Review of denials of requests for inspection or copying of public records. After any request for inspection or copying is denied, any person may petition the department to review its denial. Any such petition for review must be made in writing to the public records officer prior to the end of the second business day following the denial. Such petition shall specifically refer to the denial and shall contain a brief statement or any reasons for reconsideration of the denial. Any such petition shall be immediately referred to the director or such persons as he or she may designate to review such petitions. The person reviewing such petitions shall review and reconsider the matter and either affirm or reverse the denial and communicate the decision to the person submitting the petition prior to the end of the second business day following the petition for review.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-140, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-140, filed 9/28/76; Order 73-12, § 296-06-140, filed 7/31/73.]

WAC 296-06-150 Protection of public records. The department shall protect public records from damage or disorganization and prevent excessive interference with other essential functions of the department. All inspections of public records shall be supervised by a department staff member. Any staff member supervising public records inspection may decline to act upon the requests of person who are intoxicated, violent, abusive, threatening, or disruptive, and may terminate the inspection or copying of public records by such persons. Any staff member supervising public records inspection will at all times ensure that those inspecting the department's public records do not tear, mutilate, mark, or otherwise harm such records and shall

terminate the inspection or copying of public records by any person who has harmed such records. The staff member may limit inspection and copying to any extent necessary to prevent such activity from unreasonably disrupting the department's operations. Any staff member supervising public records inspection shall at all times provide full, prompt, courteous assistance to persons requesting the inspection and copying of the department's public records.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-150, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-150, filed 9/28/76; Order 73-12, § 296-06-150, filed 7/31/73.]

WAC 296-06-170 Records index. The department of labor and industries will not maintain a current index as provided for in RCW 42.17.260(2). As provided in RCW 42.17.260(3), this formal order is issued and published specifying the reasons why and the extent to which maintenance of such a current index would unduly burden or interfere with the operations of the department.

(1) It would both unduly burden and interfere with department operations to maintain a current index with the items specified in RCW 42.17.260 (2)(a), "final opinions, including concurring and dissenting opinions, as well as orders, made in the adjudication of cases," as the department through its several divisions, sections, and other subdivisions routinely and regularly issues a great number of determinative orders. The division of industrial insurance alone is estimated to issue daily an average of about 1,200 to 2,000 or more determinative orders. To index all such orders would either require more personnel and consequent expense or reduce the level of handling the essential functions and result in constantly greater periods of delay. Furthermore, all indexes maintained for departmental use by the various divisions, sections, and subdivisions of the department for internal use will remain available for public inspection and copying where permitted by law. A listing of such indexes and other available material shall be available for public inspection and copying.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(2) It would both unduly burden and interfere with the department's operations to maintain a current index with all "instructions to staff that affect a member of the public" within the scope of RCW 42.17.260 (2)(c). The inclusion of every such instruction to the staff would require either more personnel to index such instructions or a reduction in the department's capacity to carry out its other functions. The department will, however, continue to make available to the public for inspection or copying all instructions of a general nature to its staff that affects members of the public. A listing of all manuals containing such instructions shall be available for public inspection and copying.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(3) It would both unduly burden and interfere with department operations to maintain a current index of the materials within the scope of RCW 42.17.260 (2)(f), that is, all "correspondence, and materials, referred to therein, by and with the agency relating to any regulatory, supervisory or enforcement responsibilities of the agency, whereby the agency determines, or opines upon, or is asked to determine or opine upon, the rights of the state, the public, a subdivision of state government, or of any private party." The department daily, routinely, and regularly receives and sends a vast amount of material fitting this description. It would require either a greatly increased staff to index everything of that nature or a drastic reduction of the department's ability to carry out its other essential functions.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(4) The department did maintain a current index of the matters not covered by subsections (1) through (3) for nearly three years following the promulgation of its initial set of public records rules which was filed with the office of the code reviser on July 31, 1973. That index was virtually never asked for, nor was it used to any extent at all by the public. The department devoted many manhours that could have been put to accomplishment of its statutory duties to prepare and maintain that current index. The department finds it has been unduly burdensome to make the extensive effort necessary to maintain such a current index. Therefore, pursuant to RCW 42.17.260(3), the department issues and publishes this formal order specifying the reasons why and the extent to which compliance with any of the provisions of RCW 42.17.260(2) requiring the maintenance of a current index would unduly burden or interfere with its operations. The department herewith states that it will not hereafter maintain such a current index. The department further states that it will, however, make available for public inspection and copying all indexes and lists, not otherwise exempt, maintained for normal agency use. Guidance to public records available through the department and a general listing of such records and how they may be obtained will be provided by the public records officer upon request.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-07-004, § 296-06-170, filed 3/9/90, effective 4/9/90; Order 76-27, § 296-06-170, filed 9/28/76; Order 73-12, § 296-06-170, filed 7/31/73.]

Chapter 296-07 WAC
STATE ENVIRONMENTAL POLICY ACT GUIDELINES

WAC

WAC 296-07-010 Use of abbreviations. In this chapter the department of labor and industries shall be referred to as the "department"; the director of labor and industries as the "director"; the State Environmental Policy Act, chapter 43.21C RCW, as "SEPA"; chapter 197-10 WAC

effective January 16, 1976 as the "SEPA guidelines"; and environmental impact statement as "EIS."

[Order 76-16, § 296-07-010, filed 5/20/76.]

WAC 296-07-020 Purpose and scope. The rules contained in this chapter are to carry out the policy and procedures of SEPA and the SEPA guidelines, and shall govern the application of SEPA requirements to the department. These rules are adopted pursuant to the requirement of and authority provided by chapter 43.21C RCW and chapter 197-10 WAC.

From the effective date of this chapter the department in undertaking nonexempt actions shall conform to those relevant and applicable policies and procedures declared mandatory by the provisions of SEPA or the SEPA guidelines. Such pertinent and mandatory policy and procedures are hereby incorporated by reference and adopted as the policy and procedures of the department.

[Order 76-16, § 296-07-020, filed 5/20/76.]

WAC 296-07-030 Meaning of words and terms. The words and terms in this chapter and in all proceedings of the department in compliance with SEPA shall be deemed to conform to the mandatory definitions contained in the SEPA guidelines.

[Order 76-16, § 296-07-030, filed 5/20/76.]

WAC 296-07-040 Exemptions. All activities under programs administered by the department as of December 12, 1975 are hereby exempted, except the issuance of any license for the manufacture of explosives or the adoption or amendment by the department of any regulations incorporating general standards respecting the issuance of licenses authorizing the storage of explosives pursuant to chapter 70.74 RCW.

The adoption of any industrial health or safety regulations containing noise standards shall be considered a major action under this chapter. In addition all other exemptions provided by SEPA or the SEPA guidelines shall apply.

[Order 76-16, § 296-07-040, filed 5/20/76.]

WAC 296-07-050 Sufficiency of compliance with SEPA guidelines. Compliance with the applicable mandatory SEPA guidelines as supplemented by this chapter shall be deemed to constitute compliance with this chapter.

[Order 76-16, § 296-07-050, filed 5/20/76.]

WAC 296-07-060 Designation of responsible official. The assistant director of any department, division, or head of any independent department section with major responsibility for any non-exempt action shall be the responsible official for the purpose of complying with SEPA. In any other case the director shall be the responsible official or he shall designate another person to be the responsible official.

[Order 76-16, § 296-07-060, filed 5/20/76.]

WAC 296-07-070 Department's SEPA public information center. There is hereby established a department public information center to carry out the functions contemplated by the SEPA guidelines, WAC 197-10-830, to be located in the offices of the department at Olympia, Washington. The department's public records officer shall have charge thereof.

[Order 76-16, § 296-07-070, filed 5/20/76.]

WAC 296-07-080 Maintenance of EIS available register. The department shall maintain an EIS available register at its SEPA public information center. Said register shall be in the charge of the department's public records officer and it shall be available for public inspection and copying.

[Order 76-16, § 296-07-080, filed 5/20/76.]

WAC 296-07-090 Exemption for emergency actions. When actions are exempted from the requirements of SEPA or the SEPA guidelines because they are actions which must be taken immediately, or within a time too short to allow full compliance with SEPA or the SEPA guidelines to avoid an imminent danger to public or private property, or to prevent an imminent threat of serious environmental degradation, the responsible official shall prepare a written statement showing the nature of the action and the reasons for immediate action. Such statement shall be filed in the department's SEPA public information center.

[Order 76-16, § 296-07-090, filed 5/20/76.]

WAC 296-07-100 Chapter to be amended when SEPA guidelines amended. When amendments are adopted to the SEPA guidelines the department shall adopt all amendments to this chapter within one hundred twenty days to bring this chapter into conformance with the SEPA guidelines as amended.

[Order 76-16, § 296-07-100, filed 5/20/76.]

WAC 296-07-110 Consideration of economic values. In promulgating rules in compliance with the SEPA guidelines and any environmental, social, health, safety, or other standards connected therewith, the department shall, pursuant to chapter 117, Laws of 1975-'76 2nd ex. sess., give appropriate consideration to economic values along with such other considerations.

[Order 76-16, § 296-07-110, filed 5/20/76.]

Chapter 296-08 WAC
PRACTICE AND PROCEDURE

WAC

WAC 296-08-001 Effective date and validity. These rules of practice and procedure have been adopted by the department of labor and industries in accordance with the authority vested in it by law and pursuant to a hearing held at Olympia, Washington, on March 10, 1960. The effective date of these rules is March 18th, 1960.

[Rule .08.591, effective 3/18/60, filed 3/23/60.]

WAC 296-08-010 Appearance and practice before agency—Who may appear. No person may appear in a representative capacity before the department or any division, board, commission or council thereof or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the department or the division, board, commission or council thereof and have been duly authorized by the same to appear before it in a representative capacity.

(4) A bona fide officer, partner, or full time employee of an individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/18/60, filed 3/23/60.]

WAC 296-08-020 Appearance and practice before agency—Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the department or any division, board, commission or council thereof or its designated hearing officer determine that representative activity in such hearing requires a high degree of legal training, experience, and skill, the department or the division, board, commission or council thereof or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/18/60, filed 3/23/60.]

WAC 296-08-025 Attorney's fees. (1) The department of labor and industries (hereinafter department) shall fix a reasonable attorney fee to be paid by the worker, crime victim, or beneficiary for services rendered with the department if written application therefor is made by the attorney, worker, crime victim, or beneficiary, as provided in RCW 51.52.120.

(a) Fees will be set only for services rendered prior to the notice of appeal;

(b) On closed claims, fees will only be set if written application is received by the department within one year from the claim closure date as indicated on the department order.

(c) If such application for fixing of a fee is made by the attorney, it shall set forth therein the monetary amount which the attorney considers reasonable for all services rendered with the department, the reason such fee is considered to be reasonable, and a detailed breakdown of the time spent by the attorney in representing the injured worker.

(d) In all instances, the department shall afford to all parties affected a minimum of ten days in which to submit comment and material information which may be helpful to the department in setting a fair and reasonable fee.

(e) The department will provide copies of information sent to the department to the attorney, worker, crime victim, or beneficiary upon request.

(f) Informal contact may be made with the parties to determine the feasibility of reaching an agreement on the amount of the fees.

(g) Additional information necessary to reach a decision may be requested by the department.

(2) *Fee fixing criteria.* All attorney fees fixed by the department where application therefor has been made shall

be established in accordance with the following general principles:

(a) Only one fee shall be fixed for legal services in any one claim regardless of the number of attorneys representing the worker, crime victim, or beneficiary, except that in cases of multiple beneficiaries represented by one or multiple attorneys the department has the discretion to set more than one attorney fee if so requested.

(b) The department shall defer fixing a fee until such time as information, which it deems sufficient upon which to base a fee, is available.

(c) A fee shall be fixed only in those cases where the attorney's services are instrumental in securing additional benefits to the worker, crime victim, or beneficiary.

(d) Where increased compensation is obtained, the fee may be fixed without regard to any medical benefits secured.

(e) In setting all fees, the following factors shall be carefully considered and weighed:

(i) Nature of the claim.

(ii) Novelty and complexity of the issues presented or other unusual circumstances.

(iii) Time and labor expended.

(iv) Skill and diligence in resolving the claim.

(v) Extent and nature of the relief.

(vi) The prevalent practice of charging contingency fees in the department.

(vii) The worker's or crime victim's circumstance and the remedial social purposes of the Industrial Insurance Act and of the Crime Victims Compensation Act, which are intended to provide sure and adequate relief to injured workers and crime victims and their families.

(3) The manager of the claims consultant division of the department is the director's designee to process all petitions to set attorney's fees and to issue orders setting those fees for services rendered by attorneys in securing industrial insurance benefits. The supervisor of the crime victims section of the department is the director's designee to process all petitions to set attorney's fees and to issue orders setting those fees for services rendered by attorneys in securing crime victims benefits.

[Statutory Authority: RCW 51.52.120, 51.04.020 and 7.68.110. 87-02-037 (Order 86-42), § 296-08-025, filed 1/2/87.]

WAC 296-08-030 Appearance and practice before agency—Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the department or any division, board, commission or council thereof to solicit business by circulars, advertisements or by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/18/60, filed 3/23/60.]

WAC 296-08-040 Appearance and practice before agency—Standards of ethical conduct. All persons appearing in proceedings before the department of any division, board, commission or council thereof in representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the department or the division, board, commission or council thereof may decline to permit such person to appear in a representative capacity in any proceeding before it.

[Rule .08.040, effective 3/18/60, filed 3/23/60.]

WAC 296-08-050 Appearance and practice before agency—Appearance by former employee of agency or former member of attorney general's staff. No former employee of the department or any division, board, commission or council thereof or member of the attorney general's staff may at any time after severing his employment with the department or the division, board, commission or council thereof or the attorney general appear, except with the written permission and in compliance with RCW 42.22.040, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the department or any division, board, commission or council thereof.

[Rule .08.050, effective 3/18/60, filed 3/23/60.]

WAC 296-08-060 Appearance and practice before agency—Former employee as expert witness. No former employee of the department or any division, board, commission or council thereof shall at any time after severing his employment with the department or the division, board, commission or council thereof appear, except with the written permission and in compliance with RCW 42.22.040, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the department or any division, board, commission or council thereof.

[Rule .08.060, effective 3/18/60, filed 3/23/60.]

WAC 296-08-070 Computation of time. In computing any period of time prescribed or allowed by the rules or by the order of the department or any division, board, commission or council thereof or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/18/60, filed 3/23/60.]

WAC 296-08-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 10 days before the date set for the hearing, unless otherwise prescribed by law, or unless all interested parties waive such notice in writing. The notice shall state the time, place, and issues involved, as required by RCW 34.04.090 (2)(i).

[Rule .08.080, effective 3/18/60, filed 3/23/60.]

WAC 296-08-090 Service of process—By whom served. The department or any division, board, commission

or council thereof shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/18/60, filed 3/23/60.]

WAC 296-08-100 Service of process—Upon whom served. All papers served by either the department or any division, board, commission or council thereof or any party shall be served upon all counsel of record at the time such filing and upon parties not represented by counsel or upon their agents designated by them by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/18/60, filed 3/23/60.]

WAC 296-08-110 Service of process—Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/18/60, filed 3/23/60.]

WAC 296-08-120 Service of process—Methods of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, or registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/18/60, filed 3/23/60.]

WAC 296-08-130 Service of process—When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/18/60, filed 3/23/60.]

WAC 296-08-140 Service of process—Filing with agency. Papers required to be filed with the department or any division, board, commission or council thereof shall be deemed filed upon actual receipt by the department or the division, board, commission or council thereof at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/18/60, filed 3/23/60.]

WAC 296-08-150 Subpoenas—Where provided by law—Form. Every subpoena, where authorized by law, shall state "department of labor and industries, state of Washington (name of appropriate division, board, etc.)" and the title of the proceeding, if any, and shall command the person to whom it is directed to attend and give testimony or produce designated books, documents or things under his control at a specified time and place.

[Rule .08.150, effective 3/18/60, filed 3/23/60.]

WAC 296-08-160 Subpoenas—Issuance to parties. Upon application of counsel or other representative authorized to practice before the agency for any party to a contested case, there shall be issued to such party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in such proceeding. Where authorized by law, the department, or any division, board, commission or council thereof may issue subpoenas to parties not so represented upon request or upon a showing of general relevance and reasonable scope of the testimony or evidence sought.

[Rule .08.160, effective 3/18/60, filed 3/23/60.]

WAC 296-08-170 Subpoenas—Service. Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to such person and by tendering him on demand, if entitled to make such demand, the fees for one day's attendance and the mileage allowed by law.

[Rule .08.170, effective 3/18/60, filed 3/23/60.]

WAC 296-08-180 Subpoenas—Fees. Witnesses summoned before the department or any division, board, commission or council thereof shall be paid by the party at whose instance they appear the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

[Rule .08.180, effective 3/18/60, filed 3/23/60.]

WAC 296-08-190 Subpoenas—Proof of service. The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit or acknowledgment of service with the department or the division, board, commission or council thereof or the officer before whom the witness is required to testify or produce evidence. If service is made by a person other than an officer of the department or the division, board, commission or council thereof and such service has not been acknowledged by the witness, such person shall make an affidavit of service. Failure to make proof of service does not affect the validity of the service.

[Rule .08.190, effective 3/18/60, filed 3/23/60.]

WAC 296-08-200 Subpoenas—Quashing. Upon motion made promptly, and in any event at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed (and upon notice to the party to whom the subpoena was issued) the department or the division, board, commission or council thereof or its authorized member or officer may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Rule .08.200, effective 3/18/60, filed 3/23/60.]

WAC 296-08-210 Subpoenas—Enforcement. Upon application and for good cause shown, the department or any division, board, commission or council thereof will seek

judicial enforcement of subpoenas, where authorized by law, issued to parties and which have not been quashed.

[Rule .08.210, effective 3/18/60, filed 3/23/60.]

WAC 296-08-220 Subpoenas—Geographical scope. Such attendance of witnesses and such production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Rule .08.220, effective 3/18/60, filed 3/23/60.]

WAC 296-08-370 Official notice—Matters of law. The department or any division, board, commission or council thereof or its hearing officer upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the federal register.

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser.

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations.

(4) **Agency organization.** The department's or any division's, board's, commission's or council's thereof organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/18/60, filed 3/23/60.]

WAC 296-08-380 Official notice—Material facts. In the absence of controverting evidence, the department or any division, board, commission or council thereof and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issue and position of the parties therein, and the disposition of any proceeding then pending before or theretofore concluded by the department or the division, board, commission or council thereof;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the department or the division, board, commission or council thereof as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the department or the division, board, commission or council thereof may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum, or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the department or the division, board, commission or council thereof rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the department or the division, board, commission or council thereof may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the department or the division, board, commission or council thereof or its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/18/60, filed 3/23/60.]

WAC 296-08-390 Presumptions. Upon proof of the predicate facts specified in the following six subsections hereof without substantial dispute and by direct, clear, and convincing evidence, the department or the division, board, commission or council thereof with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, provided to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges

properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do;

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/18/60, filed 3/23/60.]

WAC 296-08-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided:

(1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission or record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the department or the division, board, commission or council thereof that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/18/60, filed 3/23/60.]

WAC 296-08-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall:

(1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding;

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/18/60, filed 3/23/60.]

WAC 296-08-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/18/60, filed 3/23/60.]

WAC 296-08-430 Prehearing conference rule—Authorized. In any proceeding the department or any division, board, commission or council thereof or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider:

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/18/60, filed 3/23/60.]

WAC 296-08-440 Prehearing conference rule—Record of conference action. The department of the division, board, commission or council thereof or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/18/60, filed 3/23/60.]

WAC 296-08-450 Submission of documentary evidence in advance. Where practical the department or the division, board, commission or council thereof or its designated hearing officer may require:

(1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence.

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon

a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/18/60, filed 3/23/60.]

WAC 296-08-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/18/60, filed 3/23/60.]

WAC 296-08-470 Expert or opinion testimony and testimony based on economic and statistical data—Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/18/60, filed 3/23/60.]

WAC 296-08-480 Expert or opinion testimony and testimony based on economic and statistical data—Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/18/60, filed 3/23/60.]

WAC 296-08-490 Expert or opinion testimony and testimony based on economic and statistical data—Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-08-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/18/60, filed 3/23/60.]

WAC 296-08-500 Expert or opinion testimony and testimony based on economic and statistical data—Effect of noncompliance with WAC 296-08-470 or 296-08-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-08-470 or 296-08-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/18/60, filed 3/23/60.]

WAC 296-08-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of hearing, or as soon thereafter as requiring such continuance come to his knowledge, notify the department or the division, board, commission or council thereof or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The department or the division, board, commission or council thereof or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown the department or the division, board, commission or council thereof or its designated hearing officer may grant such a continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix a date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/18/60, filed 3/23/60.]

WAC 296-08-520 Rules of evidence—Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/18/60, filed 3/23/60.]

WAC 296-08-530 Rules of evidence—Tentative admission—Exclusion—Discontinuance—Objections. When objection is made to the admissibility of evidence

such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/18/60, filed 3/23/60.]

WAC 296-08-540 Petitions for rule making, amendment or repeal. Any interested person may petition the department or any division, board, commission or council thereof requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/18/60, filed 3/23/60.]

WAC 296-08-550 Petitions for rule making, amendment or repeal—Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full, the petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in question must be set out as well as a suggested amended form, if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/18/60, filed 3/23/60.]

WAC 296-08-560 Petitions for rule making, amendment or repeal—Agency must consider. All petitions shall be considered by the department or the division, board, commission or council thereof and the department or the division, board, commission or council thereof may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal or modification of any rule.

[Rule .08.560, effective 3/18/60, filed 3/23/60.]

WAC 296-08-570 Petitions for rule making, amendment or repeal—Notice of disposition. The department or the division, board, commission or council thereof shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/18/60, filed 3/23/60.]

WAC 296-08-580 Declaratory rulings. As prescribed by RCW 34.04.080, any interested person may petition the department or any division, board, commission or council thereof for a declaratory ruling. The department or the division, board, commission or council thereof shall consider the petition and within a reasonable time shall:

(1) Issue a nonbinding declaratory ruling; or

(2) Notify the person that no declaratory ruling is to be issued; or

(3) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

If a hearing is held or evidence is submitted as provided in subsection (3), the department or the division, board, commission or council thereof shall within a reasonable time:

(1) Issue a binding declaratory rule; or

(2) Issue a nonbinding declaratory ruling; or

(3) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/18/60, filed 3/23/60.]

WAC 296-08-590 Forms. (1) Any interested person petitioning the department or the division, board, commission or council thereof for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

(a) At the top of the page shall appear the wording "before the department of labor and industries (name of appropriate division board, etc.)." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

(c) The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8-1/2" x 11" or 8-1/2" x 13" in size.

(2) Any interested person petitioning the department or any division, board, commission or council thereof requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose:

(a) At the top of the page shall appear the wording, "before the department of labor and industries (name of appropriate division, board, etc.)." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall be set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to

the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

(c) Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8-1/2" x 11" or 8-1/2" x 13" in size.

[Rule .08.590, effective 3/18/60, filed 3/23/60.]

Chapter 296-09 WAC
PRACTICE AND PROCEDURE—BOARD OF BOILER RULES

WAC

WAC 296-09-010 Appearance and practice before agency—Who may appear. No person may appear in a representative capacity before the board of boiler rules or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the board of boiler rules and have been duly authorized by the same to appear before it in a representative capacity.

(4) A bona fide officer, partner, or full-time employee of an individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/10/60, filed 3/23/60.]

WAC 296-09-020 Appearance and practice before agency—Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the board of boiler rules or its designated hearing officer determine that representative activity in such hearing requires a high degree of legal training, experience, and skill, the board or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/10/60, filed 3/23/60.]

WAC 296-09-030 Appearance and practice before agency—Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the board of boiler rules to solicit business by circulars, advertisements or by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/10/60, filed 3/23/60.]

WAC 296-09-040 Appearance and practice before agency—Standards of ethical conduct. All persons appearing in proceedings before the board of boiler rules in representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the board may decline to permit such person to appear in a representative capacity in any proceeding before it.

[Rule .08.040, effective 3/10/60, filed 3/23/60.]

WAC 296-09-050 Appearance and practice before agency—Appearance of former employee of board or former member of attorney general's staff. No former employee of the board of boiler rules or member of the

attorney general's staff may at any time after severing his employment with the board or the attorney general appear, except with the written permission and in compliance with chapter 42.22 RCW, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the board.

[Rule .08.050, effective 3/10/60, filed 3/23/60.]

WAC 296-09-060 Appearance and practice before agency—Former employee as expert witness. No former employee of the board of boiler rules shall at any time after severing his employment with the board appear, except with the written permission and in compliance with chapter 42.22 RCW, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the board.

[Rule .08.060, effective 3/10/60, filed 3/23/60.]

WAC 296-09-070 Computation of time. In computing any period of time prescribed or allowed by the rules or by the order of the board of boiler rules or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/10/60, filed 3/23/60.]

WAC 296-09-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 10 days before the date set for the hearing, unless otherwise prescribed by law, or unless all interested parties waive such notice, and such waiver be noted in the minutes. The notice shall state the time, place, and issues involved, as required by RCW 34.04.090(1).

[Rule .08.080, effective 3/10/60, filed 3/23/60.]

WAC 296-09-090 Service of process—By whom served. The board of boiler rules shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/10/60, filed 3/23/60.]

WAC 296-09-100 Service of process—Upon whom served. All papers served by either the board of boiler rules or any party shall be served upon all counsel of record at the time [of] such filing and upon parties not represented by counsel or upon their agents designated by them by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/10/60, filed 3/23/60.]

WAC 296-09-110 Service of process—Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/10/60, filed 3/23/60.]

WAC 296-09-120 Service of process—Method of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, or registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/10/60, filed 3/23/60.]

WAC 296-09-130 Service of process—When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/10/60, filed 3/23/60.]

WAC 296-09-140 Service of process—Filing with agency. Papers required to be filed with the board of boiler rules shall be deemed filed upon actual receipt by the board at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/10/60, filed 3/23/60.]

WAC 296-09-370 Official notice—Matters of law. The board of boiler rules or its hearing officer upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the Federal Register.

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser.

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations.

(4) **Agency organization.** The board of boiler rules' organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/10/60, filed 3/23/60.]

WAC 296-09-380 Official notice—Material facts. In the absence of controverting evidence, the board of boiler rules and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issue and position of the parties therein, and the disposition of any

proceeding then pending before or theretofore concluded by the board of boiler rules;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the board of boiler rules as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the board of boiler rules may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum, or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the board of boiler rules rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the board may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the board of boiler rules or its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/10/60, filed 3/23/60.]

WAC 296-09-390 Presumptions. Upon proof of the predicate facts specified in the following six subdivisions hereof without substantial dispute and by direct, clear, and convincing evidence, the board of boiler rules with or without prior request or notice, may take the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, provided to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do,

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/10/60, filed 3/23/60.]

WAC 296-09-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided:

(1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission or record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the board of boiler rules that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/10/60, filed 3/23/60.]

WAC 296-09-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall: (1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding.

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/10/60, filed 3/23/60.]

WAC 296-09-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/10/60, filed 3/23/60.]

WAC 296-09-430 Prehearing conference rule—Authorized. In any proceeding the board of boiler rules or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/10/63, filed 3/23/60.]

WAC 296-09-440 Prehearing conference rule—Record of conference action. The board of boiler rules or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/10/60, filed 3/23/60.]

WAC 296-09-450 Submission of documentary evidence in advance. Where practical the board of boiler rules or its designated hearing officer may require: (1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence.

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/10/60, filed 3/23/60.]

WAC 296-09-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/10/60, filed 3/23/60.]

WAC 296-09-470 Expert or opinion testimony and testimony based on economic or statistical data—Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him [and] to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/10/60, filed 3/23/60.]

WAC 296-09-480 Expert or opinion testimony and testimony based on economic or statistical data—Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless

a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/10/60, filed 3/23/60.]

WAC 296-09-490 Expert or opinion testimony and testimony based on economic or statistical data—Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-09-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/10/60, filed 3/23/60.]

WAC 296-09-500 Expert or opinion testimony and testimony based on economic or statistical data—Effect of noncompliance with WAC 296-09-470 or 296-09-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-09-470 or 296-09-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/10/60, filed 3/23/60.]

WAC 296-09-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of hearing, or as soon thereafter as requiring such continuance come to his knowledge, notify the board of boiler rules or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The board or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown the board or its designated hearing officer may grant such a continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix a date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/10/60, filed 3/23/60.]

WAC 296-09-520 Rules of evidence—Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/10/60, filed 3/23/60.]

WAC 296-09-530 Rules of evidence—Tentative admission—Exclusion—Discontinuance—Objections. When objection is made to the admissibility of evidence such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/10/60, filed 3/23/60.]

WAC 296-09-540 Petitions for rule making, amendment or repeal—Who may petition. Any interested person may petition the board of boiler rules requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/10/60, filed 3/23/60.]

WAC 296-09-550 Petitions for rule making, amendment or repeal—Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full, the petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in question must be set out as well as a suggested amended form, if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/10/60, filed 3/23/60.]

WAC 296-09-560 Petitions for rule making, amendment or repeal—Agency must consider. All petitions shall be considered by the board of boiler rules and the board may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal or modification of any rule.

[Rule .08.560, effective 3/10/60, filed 3/23/60.]

WAC 296-09-570 Petitions for rule making, amendment or repeal—Notice of disposition. The board of boiler rules shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/10/60, filed 3/23/60.]

WAC 296-09-580 Declaratory rulings. (1) As prescribed by RCW 34.04.080, any interested person may petition the board of boiler rules for a declaratory ruling. The board shall consider the petition and within a reasonable time shall:

(a) Issue a nonbinding declaratory ruling; or

(b) Notify the person that no declaratory ruling is to be issued; or

(c) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

(2) If a hearing is held or evidence is submitted as provided in subsection (c), the department or the board shall within a reasonable time:

(a) Issue a binding declaratory rule; or

(b) Issue a nonbinding declaratory ruling; or

(c) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/10/60, filed 3/23/60.]

WAC 296-09-590 Forms. (1) Any interested person petitioning the board of boiler rules thereof for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording "Before the board of boiler rules." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

(2) Any interested person petitioning the board of boiler rules thereof requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording, "Before the board of boiler rules." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

[Rule .08.590, effective 3/10/60, filed 3/23/60.]

Chapter 296-10 WAC
PRACTICE AND PROCEDURE—INDUSTRIAL WELFARE COMMITTEE

WAC

WAC 296-10-010 Appearance and practice before agency—Who may appear. No person may appear in a representative capacity before the industrial welfare committee or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the industrial welfare committee and have been duly authorized by the same to appear before it in a representative capacity.

(4) A bona fide officer, partner, or full time employee of an individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/18/60, filed 3/23/60.]

WAC 296-10-020 Appearance and practice before agency—Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the industrial welfare committee or its designated hearing officer determine that representative activity in such hearing requires a high degree of legal training, experience, and skill, the committee or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/18/60, filed 3/23/60.]

WAC 296-10-030 Appearance and practice before agency—Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the industrial welfare committee to solicit business by circulars, advertisements or by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/18/60, filed 3/23/60.]

WAC 296-10-040 Appearance and practice before agency—Standards of ethical conduct. All persons appearing in proceedings before the industrial welfare committee in representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, [the] committee may decline to permit such person to appear in a representative capacity in any proceeding before it.

[Rule .08.040, effective 3/18/60, filed 3/23/60.]

WAC 296-10-050 Appearance and practice before agency—Appearance of former employee of board or former member of attorney general's staff. No former employee of the industrial welfare committee or member of the attorney general's staff may at any time after severing his employment with the committee or the attorney general appear, except with the written permission and in compliance with chapter 42.22 RCW, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the committee.

[Rule .08.050, effective 3/18/60, filed 3/23/60.]

WAC 296-10-060 Appearance and practice before agency—Former employee as expert witness. No former employee of the industrial welfare committee shall at any time after severing his employment with the committee appear, except with the written permission and in compliance with chapter 42.22 RCW, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the committee.

[Rule .08.060, effective 3/18/60, filed 3/23/60.]

WAC 296-10-070 Computation of time. In computing any period of time prescribed or allowed by the rules or by the order of the industrial welfare committee or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/18/60, filed 3/23/60.]

WAC 296-10-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 10 days before the date set for the hearing, unless otherwise prescribed by law, or unless all interested parties waive such notice in writing. The notice shall state the time, place, and issues involved, as required by RCW 34.04.090(1).

[Rule .08.080, effective 3/18/60, filed 3/23/60.]

WAC 296-10-090 Notice and opportunity for hearing in contested cases—By whom served. The industrial welfare committee shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/18/60, filed 3/23/60.]

WAC 296-10-100 Notice and opportunity for hearing in contested cases—Upon whom served. All papers served by either the industrial welfare committee or any party shall be served upon all counsel of record at the time such filing and upon parties not represented by counsel or upon their agents designated by them by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/18/60, filed 3/23/60.]

WAC 296-10-110 Notice and opportunity for hearing in contested cases—Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/18/60, filed 3/23/60.]

WAC 296-10-120 Notice and opportunity for hearing in contested cases—Method of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, or registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/18/60, filed 3/23/60.]

WAC 296-10-130 Notice and opportunity for hearing in contested cases—When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/18/60, filed 3/23/60.]

WAC 296-10-140 Notice and opportunity for hearing in contested cases—Filing with agency. Papers required to be filed with the industrial welfare committee shall be deemed filed upon actual receipt by the committee at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/18/60, filed 3/23/60.]

WAC 296-10-150 Subpoenas—Where provided by law—Form. Every subpoena, where authorized by law, shall state "Industrial welfare committee, state of Washington" and the title of the proceeding, if any, and shall command the person to whom it is directed to attend and give testimony or produce designated books, documents or things under his control at a specified time and place.

[Rule .08.150, effective 3/18/60, filed 3/23/60.]

WAC 296-10-160 Subpoenas—Issuance to parties. Upon application of counsel or other representative authorized to practice before the agency for any party to a contested case, there shall be issued to such party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in such proceeding. Where authorized by law, the industrial welfare committee may issue subpoenas to parties not so represented upon a request or showing of general relevance and reasonable scope of the testimony or evidence sought.

[Rule .08.160, effective 3/18/60, filed 3/23/60.]

WAC 296-10-170 Subpoenas—Service. Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to such person and by tendering him on demand, if entitled to make such demand, the fees for one day's attendance and the mileage allowed by law.

[Rule .08.170, effective 3/18/60, filed 3/23/60.]

WAC 296-10-180 Subpoenas—Fees. Witnesses summoned before the industrial welfare committee shall be paid by the party at whose instance they appear the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

[Rule .08.180, effective 3/18/60, filed 3/23/60.]

WAC 296-10-190 Subpoenas—Proof of service. The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit or acknowledgment of service with the industrial welfare committee or the officer before whom the witness is required to testify or produce evidence. If service is made by a person other than an officer of the committee and such service has not been acknowledged by the witness, such person shall make an affidavit of service. Failure to make proof of service does not affect the validity of the service.

[Rule .08.190, effective 3/18/60, filed 3/23/60.]

WAC 296-10-200 Subpoenas—Quashing. Upon motion made promptly, and in any event at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed (and upon notice to the party to whom the subpoena was issued) the industrial welfare committee or its authorized member or officer may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Rule .08.200, effective 3/18/60, filed 3/23/60.]

WAC 296-10-210 Subpoenas—Enforcement. Upon application and for good cause shown, the industrial welfare committee will seek judicial enforcement of subpoenas, where authorized by law, issued to parties and which have not been quashed.

[Rule .08.210, effective 3/18/60, filed 3/23/60.]

WAC 296-10-220 Subpoenas—Geographical scope. Such attendance of witnesses and such production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Rule .08.220, effective 3/18/60, filed 3/23/60.]

WAC 296-10-370 Official notice—Matters of law. The industrial welfare committee or its hearing officer upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the Federal Register;

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records; journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser;

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations;

(4) **Agency organization.** The industrial welfare committee's organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/18/60, filed 3/23/60.]

WAC 296-10-380 Official notice—Material facts. In the absence of controverting evidence, the industrial welfare committee and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issue and position of the parties therein, and the disposition of any proceeding then pending before or theretofore concluded by the industrial welfare committee;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the industrial welfare committee as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the industrial welfare committee may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the industrial welfare committee rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the committee may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the industrial welfare committee its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/18/60, filed 3/23/60.]

WAC 296-10-390 Presumptions. Upon proof of the predicate facts specified in the following six subsections hereof without substantial dispute and by direct, clear, and convincing evidence, the industrial welfare committee with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, provided to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do;

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/18/60, filed 3/23/60.]

WAC 296-10-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided:

(1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission or record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the industrial welfare committee that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/18/60, filed 3/23/60.]

WAC 296-10-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall:

(1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding;

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/18/60, filed 3/23/60.]

WAC 296-10-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/18/60, filed 3/23/60.]

WAC 296-10-430 Prehearing conference rule—Authorized. In any proceeding the industrial welfare committee or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/18/60, filed 3/23/60.]

WAC 296-10-440 Prehearing conference rule—Record of conference action. The industrial welfare committee or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/18/60, filed 3/23/60.]

WAC 296-10-450 Submission of documentary evidence in advance. Where practical the industrial welfare committee or its designated hearing officer may require:

(1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence.

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/18/60, filed 3/23/60.]

WAC 296-10-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/18/60, filed 3/23/60.]

WAC 296-10-470 Expert or opinion testimony and testimony based on economic or statistical data—Number

and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/18/60, filed 3/23/60.]

WAC 296-10-480 Expert or opinion testimony and testimony based on economic or statistical data—Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/18/60, filed 3/23/60.]

WAC 296-10-490 Expert or opinion testimony and testimony based on economic or statistical data—Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-10-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/18/60, filed 3/23/60.]

WAC 296-10-500 Expert or opinion testimony and testimony based on economic or statistical data—Effect of noncompliance with WAC 296-10-470 or 296-10-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-10-470 or 296-10-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/18/60, filed 3/23/60.]

WAC 296-10-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of hearing, or as soon thereafter as requiring such continuance come to his knowledge, notify the industrial welfare committee or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The committee or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown the committee or its designated hearing officer may grant such continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix a date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/18/60, filed 3/23/60.]

WAC 296-10-520 Rules of evidence—Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/18/60, filed 3/23/60.]

WAC 296-10-530 Rules of evidence—Tentative admission—Exclusion—Discontinuance—Objections. When objection is made to the admissibility of evidence such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/18/60, filed 3/23/60.]

WAC 296-10-540 Petitions for rule making, amendment or repeal—Who may petition. Any interested person may petition the industrial welfare committee requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/18/60, filed 3/23/60.]

WAC 296-10-550 Petitions for rule making, amendment or repeal—Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full, the petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of

the rule in question must be set out as well as a suggested amended form if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/18/60, filed 3/23/60.]

WAC 296-10-560 Petitions for rule making, amendment or repeal—Agency must consider. All petitions shall be considered by the industrial welfare committee and the committee may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal or modification of any rule.

[Rule .08.560, effective 3/18/60, filed 3/23/60.]

WAC 296-10-570 Petitions for rule making, amendment or repeal—Notice of disposition. The industrial welfare committee shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/18/60, filed 3/23/60.]

WAC 296-10-580 Declaratory rulings. As prescribed by RCW 34.04.080, any interested person may petition the industrial welfare committee thereof for a declaratory ruling. The committee shall consider the petition and within a reasonable time shall:

(1) Issue a nonbinding declaratory ruling; or

(2) Notify the person that no declaratory ruling is to be issued; or

(3) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

(4) If a hearing is held or evidence is submitted as provided in subsection (3), the industrial welfare committee thereof shall within a reasonable time:

(a) Issue a binding declaratory rule; or

(b) Issue a nonbinding declaratory ruling; or

(c) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/18/60, filed 3/23/60.]

WAC 296-10-590 Forms. (1) Any interested person petitioning the industrial welfare committee for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording "Before the industrial welfare committee." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8-1/2 x 11" or 8-1/2 x 13" in size.

(2) Any interested person petitioning the industrial welfare committee requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording, "Before the industrial welfare committee." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8-1/2 x 11" or 8-1/2" x 13" in size.

[Rule .08.590, effective 3/18/60, filed 3/23/60.]

Chapter 296-11 WAC

PRACTICE AND PROCEDURE—BOARD OF PILOTAGE COMMISSIONERS

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-11-002 Effective date and validity. [Order 2-68, § 296-11-002, filed 11/1/68; Rule .08.591, effective 3/1/60, filed 3/23/60.] Repealed by 80-03-081 (Order 79-6, Resolution No. 79-6), filed 3/4/80. Statutory Authority: RCW 88.16.035.

WAC 296-11-001 General rule and information. The chairperson of the board of pilotage commissioners is the secretary of transportation of the state of Washington or the secretary's designee. Information regarding the Pilotage Act, complaints and other matters coming under the provisions of the Pilotage Act and the board's rules and regulations may be obtained by contacting the chairperson or the board's secretary in person or in writing at the Office of the Board of Pilotage Commissioners, Pier 52, Seattle, Washington 98104. All public documents in the custody of the board may be obtained upon request made to the chairperson of the Board of Pilotage Commissioners, Pier 52, Seattle, Washington 98104.

Any matter filed with the chairperson and/or the secretary will be brought to the attention of the board at its next regular meeting, the date of which is the second Thursday of each month. Persons desiring to do so may also attend the board meetings, which are held at Pier 52, Seattle, Washington.

The purpose and scope of activity of the board of pilotage commissioners are set out in chapter 88.16 RCW and are as follows:

Scope: (1) Puget Sound pilotage district.

(2) Grays Harbor pilotage district.

Purpose: The purpose of the board of pilotage commissioners is to prevent the loss of human lives, loss of property and vessels and to protect the marine environment by maintenance of a competent and efficient pilotage service on the state's waters. To accomplish this end the board examines proficiency of potential pilots, licenses pilots, regulates pilots, enforces the use of pilots, sets pilotage rates, receives and investigates reports of accidents involving pilots, keeps records of various matters affecting pilotage and fulfills other responsibilities enumerated in chapter 88.16 RCW.

[Statutory Authority: RCW 88.16.035. 80-03-081 (Order 79-6, Resolution No. 79-6), § 296-11-001, filed 3/4/80. Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution No. 78-2), § 296-11-001, filed 8/23/78; Order 2-68, § 296-11-001, filed 11/1/68.]

WAC 296-11-003 Index to documents. The board of pilotage commissioners finds that the preparation and maintenance of an index to documents as required by RCW 42.17.260 would be unduly burdensome. Therefore, such an index will not be maintained. This undue burden is caused by the fact that the board of pilotage commissioners is a small agency of the state of Washington operating with a limited amount of financial resources. Because of the agency's size, its records are organized in an effective and straightforward manner which renders them accessible to the general public without resort to an index as envisioned in RCW 42.17.260. All indexes which are maintained for agency use will be available for public inspection.

[Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution No. 78-2), § 296-11-003, filed 8/23/78.]

WAC 296-11-010 Appearance and practice before agency—Who may appear. No person may appear in a representative capacity before the board of pilotage commissioners or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the board of pilotage commissioners and have been duly authorized by the board to appear in a representative capacity before the board.

(4) A bona fide officer, partner, or full time employee of an individual firm, association, partnership, or corporation who appears for such individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/1/60, filed 3/23/60.]

WAC 296-11-020 Appearance and practice before agency—Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the board of pilotage commissioners or its designated hearing officer determines that representative activity in such hearing requires a high degree of legal training, experience, and skill, the board or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/1/60, filed 3/23/60.]

WAC 296-11-030 Appearance and practice before agency—Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the board of pilotage commissioners to solicit business by circulars, advertisements or by personal communication or interviews not warranted by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/1/60, filed 3/23/60.]

WAC 296-11-040 Appearance and practice before agency—Standards of ethical conduct. All persons appearing in proceedings before the board of pilotage commissioners in a representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the board may decline to permit such person to appear in a representative capacity in any proceeding before the board.

[Rule .08.040, effective 3/1/60, filed 3/23/60.]

WAC 296-11-050 Appearance and practice before agency—Appearance by former employee of board or member of attorney general's staff. No former employee of the board of pilotage commissioners or member of the attorney general's staff may at any time after severing his employment with the board or the attorney general appear, except with the written permission of the board, and in compliance with chapter 42.22 RCW, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the board.

[Rule .08.050, effective 3/1/60, filed 3/23/60.]

WAC 296-11-060 Appearance and practice before agency—Former employee as expert witness. No former employee of the board of pilotage commissioners shall at any time after severing his employment with the board appear, except with the written permission of the board, and in compliance with chapter 42.22 RCW, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the board.

[Rule .08.060, effective 3/1/60, filed 3/23/60.]

WAC 296-11-070 Computation of time. In computing any period of time prescribed or allowed by the board of pilotage commissioners' rules, by order of the board or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/1/60, filed 3/23/60.]

WAC 296-11-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 20 days before the date set for the hearing. The notice shall state the time, place and issues involved, as required by RCW 34.04.090(1).

[Order 2-68, § 296-11-080, filed 11/1/68; Rule .08.080, effective 3/1/60, filed 3/23/60.]

WAC 296-11-090 Service of process—By whom served. The board of pilotage commissioners shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/1/60, filed 3/23/60.]

WAC 296-11-100 Service of process—Upon whom served. All papers served by either the board of pilotage commissioners or any party shall be served upon all counsel of record at the time of such filing and upon parties not represented by counsel or upon their agents designated by

them or by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/1/60, filed 3/23/60.]

WAC 296-11-110 Service of process—Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/1/60, filed 3/23/60.]

WAC 296-11-120 Service of process—Method of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/1/60, filed 3/23/60.]

WAC 296-11-130 Service of process—When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/1/60, filed 3/23/60.]

WAC 296-11-140 Service of process—Filing with agency. Papers required to be filed with the board of pilotage commissioners shall be deemed filed upon actual receipt by the board at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/1/60, filed 3/23/60.]

WAC 296-11-150 Subpoenas—Where provided by law—Form. Every subpoena shall state the name of the state of Washington board of pilotage commissioners and the title of the proceeding, if any, and shall command the person to whom it is directed to attend and give testimony or produce designated books, documents or things under his control at a specified time and place.

[Rule .08.150, effective 3/1/60, filed 3/23/60.]

WAC 296-11-160 Subpoenas—Issuance to parties. Upon application of counsel or other representative authorized to practice before the agency for any party to a contested case, there shall be issued to such party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in such proceeding. The board of pilotage commissioners may issue subpoenas to parties not so represented upon request or upon a showing of general relevance and reasonable scope of the testimony or evidence sought.

[Rule .08.160, effective 3/1/60, filed 3/23/60.]

WAC 296-11-170 Subpoenas—Service. Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to such person and by tendering him on demand, if entitled to make such demand, the fees for one day's attendance and the mileage allowed by law.

[Rule .08.170, effective 3/1/60, filed 3/23/60.]

WAC 296-11-180 Subpoenas—Fees. Witnesses summoned before the board of pilotage commissioners shall be paid by the party at whose instance they appear the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

[Rule .08.180, effective 3/1/60, filed 3/23/60.]

WAC 296-11-190 Subpoenas—Proof of service. The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit, or acknowledgment of service with the board of pilotage commissioners or the officer before whom the witness is required to testify or produce evidence. If service is made by a person other than an officer of the board, and such service has not been acknowledged by the witness, such person shall make an affidavit of service. Failure to make proof of service does not affect the validity of the service.

[Rule .08.190, effective 3/1/60, filed 3/23/60.]

WAC 296-11-200 Subpoenas—Quashing. Upon motion made promptly, and in any event at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed (and upon notice to the party to whom the subpoena was issued) the board of pilotage commissioners or its authorized member or officer may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Rule .08.200, effective 3/1/60, filed 3/23/60.]

WAC 296-11-210 Subpoenas—Enforcement. Upon application and for good cause shown, the board of pilotage commissioners will seek judicial enforcement of subpoenas issued to parties and which have not been quashed.

[Rule .08.210, effective 3/1/60, filed 3/23/60.]

WAC 296-11-220 Subpoenas—Geographical scope. Such attendance of witnesses and such production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Rule .08.220, effective 3/1/60, filed 3/23/60.]

WAC 296-11-230 Depositions and interrogatories in contested cases—Right to take. Except as may be otherwise provided, any party may take the testimony of any person, including a party, by deposition upon oral examination or written interrogatories for use as evidence in the proceeding, except that leave must be obtained if notice of the taking is served by a proponent within twenty days after the filing of a complaint. The attendance of witnesses may

be compelled by the use of a subpoena. Depositions shall be taken only in accordance with this rule and the rule of subpoenas.

[Rule .08.230, effective 3/1/60, filed 3/23/60.]

WAC 296-11-240 Depositions and interrogatories in contested cases—Scope. Unless otherwise ordered, the deponent may be examined regarding any matter not privileged, which is relevant to the subject matter involved in the proceeding.

[Rule .08.240, effective 3/1/60, filed 3/23/60.]

WAC 296-11-250 Depositions and interrogatories in contested cases—Officer before whom taken. Within the United States or within a territory or insular possession subject to the dominion of the United States depositions shall be taken before an officer authorized to administer oaths by the laws of the state of Washington or of the place where the examination is held; within a foreign country, depositions shall be taken before a secretary of an embassy or legation, consul general, vice consul or consular agent of the United States, or a person designated by the board of pilotage commissioners or agreed upon by the parties by stipulation in writing filed with the board. Except by stipulation, no deposition shall be taken before a person who is a party or the privy of a party, or a privy of any counsel of a party, or who is financially interested in the proceeding.

[Rule .08.250, effective 3/1/60, filed 3/23/60.]

WAC 296-11-260 Depositions and interrogatories in contested cases—Authorization. A party desiring to take the deposition of any person upon oral examination shall give reasonable notice of not less than three days in writing to the board of pilotage commissioners and all parties. The notice shall state the time and place for taking the deposition, the name and address of each person to be examined, if known, and if the name is not known, a general description sufficient to identify him or the particular class or group to which he belongs. On motion of a party upon whom the notice is served, the hearing officer may for cause shown, enlarge or shorten the time. If the parties so stipulate in writing, depositions may be taken before any person, at any time or place, upon any notice, and in any manner and when so taken may be used as other depositions.

[Rule .08.260, effective 3/1/60, filed 3/23/60.]

WAC 296-11-270 Depositions and interrogatories in contested cases—Protection of parties and deponents. After notice is served for taking a deposition, upon its own motion or upon motion reasonably made by any party or by the person to be examined and upon notice and for good cause shown the board of pilotage commissioners or its designated hearing officer may make an order that the deposition shall not be taken, or that it may be taken only at some designated place other than that stated in the notice, or that it may be taken only on written interrogatories, or that certain matters shall not be inquired into, or that the scope of the examination shall be limited to certain matters, or that the examination shall be limited to certain matters, or that the examination shall be held with no one present except the parties to the action and their officers or counsel, or that after being sealed, the deposition shall be opened only by order of the board, or that business secrets or secret processes, developments, or research need not be disclosed, or that the parties shall simultaneously file specified documents or information enclosed in sealed envelopes to be opened as directed by the board, or the board may make any other order which justice requires to protect the party or witness from annoyance, embarrassment, or oppression. At any time during the taking of the deposition, on motion of any party or of the deponent and upon a showing that the examination is being conducted in bad faith or in such manner as unreasonably to annoy, embarrass, or oppress the deponent or party, the board or its designated hearing officer may order the officer conducting the examination to cease forthwith from taking the deposition, or may limit the scope and manner of the taking of the deposition as above provided. If the order made terminates the examination, it shall be resumed thereafter only upon the order of the agency. Upon demand of the objecting party or deponent, the taking of the deposition shall be suspended for the time necessary to make a motion for an order.

[Rule .08.270, effective 3/1/60, filed 3/23/60.]

WAC 296-11-280 Depositions and interrogatories in contested cases—Oral examination and cross-examination. Examination and cross-examination shall proceed as at an oral hearing. In lieu of participating in the oral examination, any party served with notice of taking a deposition may transmit written cross interrogatories to the officer who, without first disclosing them to any person, and after the direct testimony is complete, shall propound them seriatim to the deponent and record or cause the answers to be recorded verbatim.

[Rule .08.280, effective 3/1/60, filed 3/23/60.]

WAC 296-11-290 Depositions and interrogatories in contested cases—Recordation. The officer before whom the deposition is to be taken shall put the witness on oath and shall personally or by someone acting under his direction and in his presence, record the testimony by typewriter directly or by transcription from stenographic notes, wire or record recorders, which record shall separately and consecutively number each interrogatory. Objections to the notice, qualifications of the officer taking the deposition, or to the manner of taking it, or to the evidence presented or to the conduct of the officer, or of any party, shall be noted by the officer upon the deposition. All objections by any party not so made are waived.

[Rule .08.290, effective 3/1/60, filed 3/23/60.]

WAC 296-11-300 Depositions and interrogatories in contested cases—Signing attestation and return. When the testimony is fully transcribed the deposition shall be submitted to the witness for examination and shall be read to or by him, unless such examination and reading are waived by the witness and by the parties. Any changes in form or substance which the witness desires to make shall be entered upon the deposition by the officer with a statement of the reasons given by the witness for making them. The

deposition shall then be signed by the witness, unless the parties by stipulation waive the signing or the witness is ill or cannot be found or refuses to sign. If the deposition is not signed by the witness, the officer shall sign it and state on the record the fact of the waiver or of the illness or absence of the witness or the fact of the refusal to sign together with the reasons, if any, given therefore; and the deposition may then be used as fully as though signed, unless on a motion to suppress the board of pilotage commissioners holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

The officer shall certify on the deposition that the witness was duly sworn by him and that the deposition is a true record of the testimony given by the witness. He shall then securely seal the deposition in an envelope indorsed with the title of proceeding and marked "Deposition of (here insert name of witness)" and shall promptly send it by registered or certified mail to the board of pilotage commissioners, or its designated hearing officer, for filing. The party taking the deposition shall give prompt notice of its filing to all other parties. Upon payment of reasonable charges therefor, the officer shall furnish a copy of the deposition to any party or to the deponent.

[Rule .08.300, effective 3/1/60, filed 3/23/60.]

WAC 296-11-310 Depositions and interrogatories in contested cases—Use and effect. Subject to rulings by the hearing officer upon objections a deposition taken and filed as provided in this rule will not become a part of the record in the proceeding until received in evidence by the hearing officer upon his own motion or the motion of any party. Except by agreement of the parties or ruling of the hearing officer, a deposition will be received only in its entirety. A party does not make a party, or the privy of a party, or any hostile witness his witness by taking his deposition. Any party may rebut any relevant evidence contained in a deposition whether introduced by him or any other party.

[Rule .08.310, effective 3/1/60, filed 3/23/60.]

WAC 296-11-320 Depositions and interrogatories in contested cases—Fees of officers and deponents. Deponents whose depositions are taken and the officers taking the same shall be entitled to the same fees as are paid for like services in the superior courts of the state of Washington which fees shall be paid by the party at whose instance the depositions are taken.

[Rule .08.320, effective 3/1/60, filed 3/23/60.]

WAC 296-11-330 Depositions upon interrogatories—Submission of interrogatories. Where the deposition is taken upon written interrogatories, the party offering the testimony shall separately and consecutively number each interrogatory and file and serve them with a notice stating the name and address of the person who is to answer them and the name or descriptive title and address of the officer before whom they are to be taken. Within 10 days thereafter a party so served may serve cross-interrogatories upon the party proposing to take the deposition. Within five days thereafter, the latter may serve redirect interrogatories upon the party who served cross-interrogatories.

[Rule .08.330, effective 3/1/60, filed 3/23/60.]

WAC 296-11-340 Depositions upon interrogatories—Interrogation. Where the interrogatories are forwarded to an officer authorized to administer oaths as provided in WAC 296-11-250 the officer taking the same after duly swearing the deponent, shall read to him seriatim, one interrogatory at a time and cause the same and the answer thereto to be recorded before the succeeding interrogatory is asked. No one except the deponent, the officer and the court reporter or stenographer recording and transcribing it shall be present during the interrogation.

[Rule .08.340, effective 3/1/60, filed 3/23/60.]

WAC 296-11-350 Depositions upon interrogatories—Attestation and return. The officer before whom interrogatories are verified or answered shall (1) certify under his official signature and seal that the deponent was duly sworn by him, that the interrogatories and answers are a true record of the deponent's testimony, that no one except deponent, the officer and the stenographer were present during the taking, and that neither he nor the stenographer, to his knowledge is a party, privy to a party, or interested in the event of the proceedings, and (2) promptly send by registered or certified mail the original copy of the deposition and exhibits with his attestation to the board of pilotage commissioners, or its designated hearing officer, one copy to the counsel who submitted the interrogatories and another copy to the deponent.

[Rule .08.350, effective 3/1/60, filed 3/23/60.]

WAC 296-11-360 Depositions upon interrogatories—Provisions of deposition rule. In all other respects, depositions upon interrogatories shall be governed by the previous deposition rule.

[Rule .08.360, effective 3/1/60, filed 3/23/60.]

WAC 296-11-370 Official notice—Matters of law. The board of pilotage commissioners or its hearing officer, upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the Federal Register;

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser.

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations;

(4) **Agency organization.** The board of pilotage commissioners' organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/1/60, filed 3/23/60.]

WAC 296-11-380 Official notice—Material facts. In the absence of controverting evidence, the board of pilotage commissioners and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issues and position of the parties therein, and the disposition of any proceeding then pending before or theretofore concluded by the board of pilotage commissioners;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the board of pilotage commissioners as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the board of pilotage commissioners may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum, or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the board of pilotage commissioners rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the board may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the board of pilotage commissioners or its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/1/60, filed 3/23/60.]

WAC 296-11-390 Presumptions. Upon proof of the predicate facts specified in the following six subsections hereof without substantial dispute and by direct, clear, and convincing evidence, the board of pilotage commissioners, with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, proved to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do;

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/1/60, filed 3/23/60.]

WAC 296-11-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided:

(1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission of record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the board of pilotage commissioners that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its with-

drawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/1/60, filed 3/23/60.]

WAC 296-11-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall:

(1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding;

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/1/60, filed 3/23/60.]

WAC 296-11-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/1/60, filed 3/23/60.]

WAC 296-11-430 Prehearing conference rule—Authorized. In any proceeding the board of pilotage commissioners or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/1/60, filed 3/23/60.]

WAC 296-11-440 Prehearing conference rule—Record of conference action. The board of pilotage commissioners or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/1/60, filed 3/23/60.]

WAC 296-11-450 Submission of documentary evidence in advance. Where practicable the board of pilotage commissioners or its designated hearing officer may require:

(1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence;

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/1/60, filed 3/23/60.]

WAC 296-11-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to the other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/1/60, filed 3/23/60.]

WAC 296-11-470 Expert or opinion testimony and testimony based on economic or statistical data—Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him and to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/1/60, filed 3/23/60.]

WAC 296-11-480 Expert or opinion testimony and testimony based on economic or statistical data—Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary

submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/1/60, filed 3/23/60.]

WAC 296-11-490 Expert or opinion testimony and testimony based on economic or statistical data—Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-11-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/1/60, filed 3/23/60.]

WAC 296-11-500 Expert or opinion testimony and testimony based on economic or statistical data—Effect of noncompliance with WAC 296-11-470 or 296-11-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-11-470 or 296-11-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/1/60, filed 3/23/60.]

WAC 296-11-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of a hearing, or as soon thereafter as facts requiring such continuance come to his knowledge, notify the board of pilotage commissioners or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The board or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown, the board or its designated hearing officer may grant such a continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix the date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/1/60, filed 3/23/60.]

WAC 296-11-520 Rules of evidence—Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings, in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/1/60, filed 3/23/60.]

WAC 296-11-530 Rules of evidence—Tentative admission—Exclusion—Discontinuance—Objections. When objection is made to the admissibility of evidence, such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/1/60, filed 3/23/60.]

WAC 296-11-540 Petitions for rule making, amendment or repeal—Who may petition. Any interested person may petition the board of pilotage commissioners requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/1/60, filed 3/23/60.]

WAC 296-11-550 Petitions for rule making, amendment or repeal—Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full. The petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in question must be set out as well as a suggested amended form, if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/1/60, filed 3/23/60.]

WAC 296-11-560 Petitions for rule making, amendment or repeal—Agency must consider. All petitions shall be considered by the board of pilotage commissioners and the board may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal, or modification of any rule.

[Rule .08.560, effective 3/1/60, filed 3/23/60.]

WAC 296-11-570 Petitions for rule making, amendment or repeal—Notice of disposition. The board of pilotage commissioners shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/1/60, filed 3/23/60.]

WAC 296-11-580 Declaratory rulings. As prescribed by RCW 34.04.080, any interested person may petition the board of pilotage commissioners for a declaratory ruling. The board shall consider the petition and within a reasonable time the board shall:

(1) Issue a nonbinding declaratory ruling; or

(2) Notify the person that no declaratory ruling is to be issued or

(3) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

(4) If a hearing is held or evidence is submitted as provided in subsection (3), the board shall within a reasonable time:

(a) Issue a binding declaratory rule; or

(b) Issue a nonbinding declaratory ruling; or

(c) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/1/60, filed 3/23/60.]

WAC 296-11-590 Forms. (1) Any interested person petitioning the board of pilotage commissioners for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

(a) At the top of the page shall appear the wording "Before the board of pilotage commissioners, state of Washington," on the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

(c) The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

(2) Any interested person petitioning the board of pilotage commissioners requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose.

(a) At the top of the page shall appear the wording "Before the board of pilotage commissioners, state of Washington." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing caption shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

(c) Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

[Rule .08.590, effective 3/1/60, filed 3/23/60.]

Chapter 296-13 WAC
PRACTICE AND PROCEDURE—ELECTRICAL BOARD

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-13-045 Duties of examining board. [Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-045, filed 8/27/84.] Repealed by 88-16-002 (Order 88-15), filed 7/21/88. Statutory Authority: RCW 19.28.060.

296-13-070 Solicitation of business unethical. [§ VI, filed 10/15/65.] Repealed by 84-18-009 (Order 84-16), filed 8/27/84. Statutory Authority: RCW 19.28.123 and 19.28.590.

296-13-120 Administrative Procedure Act. [§ XI, filed 10/15/65.] Repealed by 84-18-009 (Order 84-16), filed 8/27/84. Statutory Authority: RCW 19.28.123 and 19.28.590.

WAC 296-13-001 Foreword. (1) The electrical law, chapter 19.28 RCW, establishes the electrical board and fixes their responsibilities. The board's principal functions are: To advise the department in adopting rules with respect to electrical installations and appliances; to act as a board of appeals in contested cases regarding the application or interpretation of installation, alteration or maintenance standards prescribed in the electrical law, chapter 19.28 RCW or chapter 296-46 WAC, Safety standards—Installing electric wires and equipment—Administrative rules; to act as an appeals board in contested cases as provided for in chapter 296-402 WAC, Electrical testing laboratory accreditation; to act as an appeals board in contested cases as provided for in chapter 296-403 WAC, Amusement rides or structures; to establish tests and test procedures for electricians and administrators; and to act as a board of appeals in contested cases that have been heard by the office of administrative hearings regarding the revocation or suspension of an electrical contractor's license or an electrician's or administrator's certificate.

(2) The purpose of this chapter is to provide a uniform procedure for persons, firms, corporations, or other entities to: (a) Communicate with the department about rules that should be adopted, amended, or repealed; (b) appeal a decision of the department revoking or suspending a contractor's license, an electrician's certificate, or an administrator's certificate; (c) appeal a decision of the department suspending, revoking, refusing to renew, or reducing or refusing to renew the product categories for an electrical testing laboratory under chapter 296-402 WAC; and (d) appeal a decision of the department denying or revoking an amusement ride or structure operating permit or ordering the cessation of the operation of an amusement ride or structure, or suspending, revoking, or refusing to issue an amusement ride inspector certificate of competency under chapter 296-403 WAC.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-001, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-001, filed 8/27/84; Foreword, filed 10/15/65.]

WAC 296-13-010 Definitions. Whenever used in this chapter, the words:

(1) "Administrative law judge" means an administrative law judge appointed pursuant to chapter 34.12 RCW.

(2) "Board" means the electrical board established pursuant to RCW 19.28.065. The term "board" also includes an administrative law judge or a board member appointed by the board to hear a contested case.

(3) "Chapter" means chapter 296-13 WAC.

(4) "Contested case" means a contested case as defined by RCW 34.04.010(3). It includes appeals from decisions or orders of the department: (a) Revoking or suspending an electrical contractor's license or an administrator's or electrician's certificate; (b) revoking or suspending or refusing to renew an electrical testing laboratory accreditation or product categories; and (c) denying or revoking an amusement ride or structure operating permit, ordering the cessation of the operation of an amusement ride or structure or suspending, revoking, or refusing to issue an amusement ride inspector certificate of competency. It also includes challenges to the department's interpretation of the installation requirements of chapter 19.28 RCW and chapter 296-46 WAC and appeals of a citation issued by the department for violations of chapter 19.28 or 67.42 RCW, or chapter 296-46, 296-401, 296-402, or 296-403 WAC.

(5) "Department" means the department of labor and industries of the state of Washington.

(6) "Director" means the director of the department.

(7) "Proceeding" means any matter before the board other than a contested case.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-010, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-010, filed 8/27/84; Definitions, filed 10/15/65.]

WAC 296-13-020 Officers. In addition to the chairperson, the board shall elect from its members a vice chairperson who shall perform all functions of the chairperson in his or her absence. The department chief electrical inspector serves as secretary to the board.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-020, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-020, filed 8/27/84; § I, filed 10/15/65.]

WAC 296-13-030 Internal management. The board adopts *Roberts' Rules of Order,* revised as its rules of procedure.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-030, filed 8/27/84; § II, filed 10/15/65.]

WAC 296-13-035 Dates of meetings. (1) The board shall hold regular meetings on the last Thursday of January, April, July, and October of each year.

(2) The director or the chairperson of the board may call a special meeting at any other time.

(3) Each board member and the board secretary shall be notified in writing of the date, time, and place of each regular meeting and special meeting.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-035, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-035, filed 8/27/84.]

WAC 296-13-040 Duties of the board. (1) The board shall study proposed rules submitted to it by the department and shall make recommendations concerning their adoption.

(2) The board shall develop and submit for consideration to the department administrative procedures, organizational plans, and rules relating to improving the functions of the electrical section.

(3) The board shall at each meeting consider any written proposals made by any persons, firms, corporations, or other entities for electrical rules or for changes in administrative procedures of the electrical section.

(4) The board shall hear formal appeals in matters under its jurisdiction in contested cases involving a ruling or interpretation by the department of the provisions of chapter 19.28 RCW and chapters 296-46, 296-402, and 296-403 WAC.

(5) The board shall consider proposed expenditures from the electrical fund.

(6) The board shall establish tests and test procedures for journeyman and specialty electricians and for general and specialty administrators.

(7) The board will hear informal appeals in matters under its jurisdiction, including those from persons who desire to contest:

(a) Decisions of the department that they do not qualify to take an examination;

(b) The loss of a certificate because of a failure timely to renew the certificate; and

(c) Grades given on examinations for administrator or electrician certificates.

(8) The board will issue a decision on formal appeals that have been heard by an administrative law judge in contested cases involving an order or decision of the department as provided for in RCW 19.28.350 and WAC 296-401-170 that revokes or suspends an electrical contractor's license, an administrator's certificate, or an electrician's certificate, or lessens the number of hours of work a trainee electrician has accumulated.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-040, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-040, filed 8/27/84; § III, filed 10/15/65.]

WAC 296-13-050 Hearings. (1) The board will grant a formal hearing on contested cases. It will grant an informal hearing on all other proceedings that are within its jurisdiction.

(2) A person, firm, corporation, or other entity that desires a formal hearing on a contested case must file a written appeal of the department's decision, order, or interpretation with the secretary of the board. The written appeal must state the decision, order, or interpretation of the department that is being appealed and the relief that is desired. An appeal of a decision or order of the department must be filed within fifteen days of the day the appellant received notice of the department's decision, order, or interpretation.

(3) The board may delegate to an administrative law judge or a board member the responsibility to preside over the hearing and to issue a proposed decision and order. If the board does so, the administrative law judge or a board member shall set the time and place for the hearing. If the board retains the responsibility to preside over the hearing, the board shall set the time and place.

(4) The board shall assign to the office of administrative hearings each appeal of the department's decision, order citation, or interpretation regarding an electrical contractor license, administrator certificate, electrician certificate, or training certificate as provided for in RCW 19.28.350 and 19.28.620, or citation for the sale or exchange of electrical equipment associated with spas, hot tubs, swimming pools, and hydromassage bathtubs that does not bear the product certification mark of an electrical products testing laboratory that has been accredited by the department. The board shall be allowed a minimum of twenty days to review the proposed decision of the administrative law judge and shall issue its decision and order no later than the next regularly scheduled board meeting.

(5) A person, firm, corporation, or other entity desiring an informal hearing on a proceeding other than a contested case shall file a written request to that effect with the secretary of the board. The written request should describe concisely the matters or proposals on which the informal hearing is requested and the relief that is desired.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-050, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-050, filed 8/27/84; § IV, filed 10/15/65.]

WAC 296-13-052 Hearing before administrative law judge or a board member. An administrative law judge or a board member to whom the board has delegated the authority to preside over a hearing in a contested case may exercise all powers the board could exercise in the course of the hearing. After the hearing, the administrative law judge or a board member shall serve on each party and file with the board a proposed decision.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-052, filed 8/27/84.]

WAC 296-13-053 Appeal of proposed decision to board. A party to a contested case may appeal a proposed decision to the full board within thirty days after a copy of the proposed decision is served upon that party. The appeal shall be filed with the board as provided in WAC 296-13-057. If no appeal is filed, the proposed decision becomes final with no further action on the part of the board.

The notice of appeal must specify the contentions of the appealing party, and must specify to which conclusions of law and findings of fact the party takes exception.

The appeal shall be based on the record of the hearing. The board shall not grant a hearing de novo.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-053, filed 8/27/84.]

WAC 296-13-055 Quorum. A majority of the board constitutes a quorum for purposes of making a decision in a contested case. If a majority does not attend a hearing on a contested case, the board may either continue the hearing to a date certain or may hear the testimony and arguments. If the board hears the testimony and arguments, the members of the board who are absent may make their decisions after hearing the tape recording or reading the transcript, of the hearing.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-055, filed 8/27/84.]

WAC 296-13-057 Place and time of filing. A paper that must be filed with the board shall be filed only at the Office of the Chief Electrical Inspector, Electrical Section, 805 Plum Street S.E., P.O. Box 9519, Olympia, WA 98504-9519. The paper may be filed by ordinary mail, certified or registered mail, telegram, or by personal delivery. The date of filing is the date the paper is actually received in the office of the chief electrical inspector.

[Statutory Authority: RCW 19.28.060. 88-16-002 (Order 88-15), § 296-13-057, filed 7/21/88. Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-057, filed 8/27/84.]

WAC 296-13-060 Appearance and practice before board. No person may appear as a representative in a contested case before the board other than the following:

(1) Attorneys at law qualified to practice before the supreme court of the state of Washington.

(2) Attorneys at law qualified to practice before the highest court of record of another state, if the attorneys at law of the state of Washington are permitted to appear as representatives before administrative agencies of the other state, and if not otherwise prohibited by Washington law.

(3) An owner, officer, partner, or full-time employee of a firm, association, organization, partnership, or corporation who appears for the firm, association, organization, partnership, or corporation.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-060, filed 8/27/84; § V, filed 10/15/65.]

WAC 296-13-080 Standards of ethical conduct. All persons appearing in proceedings or contested cases before the board as a representative shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If a person does not conform to these standards, the board may decline to permit the person to appear as a representative in any proceeding or contested case before the board.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-080, filed 8/27/84; § VII, filed 10/15/65.]

WAC 296-13-090 Appearance by former employee. No former employee of the board, the department, or the attorney general's staff may at any time after severing his or her employment with the board, the department, or the attorney general appear as a representative for another party in any proceeding or contested case in which he or she previously took an active part as a representative of the board or the department.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-090, filed 8/27/84; § VIII, filed 10/15/65.]

WAC 296-13-100 Former employee as expert witness. Except with the written permission of the board, no former employee of the board or the department shall appear, after severing his or her employment with the board or the department, as an expert witness for another party in any proceeding or contested case in which he or she previously took an active part in the investigation as a representative of the board or the department.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-100, filed 8/27/84; § IX, filed 10/15/65.]

WAC 296-13-110 Computation of time. In computing any period of time prescribed or allowed by any applicable statute or rule, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday, or legal holiday, in which case the period runs until the next day that is not a Saturday, Sunday, or holiday.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-110, filed 8/27/84; § X, filed 10/15/65.]

WAC 296-13-130 Notice and opportunity for hearing. (1) In any contested case the board shall serve all parties with a notice and opportunity for hearing not less than twenty days before the date set for hearing. The notice shall state the time and place of the hearing and the issues involved, as required by RCW 34.04.090.

(2) In any other proceeding before the board, the board shall give reasonable notice and an opportunity to be heard by mail or by telephone not less than two days before the date set for the informal hearing.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-130, filed 8/27/84.]

WAC 296-13-140 Service of process—By whom served. The board shall cause to be served all orders, notices, and other papers it issues that pertain to a contested case, together with any other papers it is required by law to serve. Every other paper that must be served shall be served by the party that files it.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-140, filed 8/27/84.]

WAC 296-13-150 Service of process—Upon whom served. All papers served by either the board or a party shall be served upon all counsel of record at the time the paper is served and upon parties not represented by counsel or upon their representatives designated by them or by law. Any counsel that enters an appearance after the beginning of the contested case shall notify all other counsel then of record and all parties not represented by counsel of his or her appearance.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-150, filed 8/27/84.]

WAC 296-13-160 Service of process upon parties. The final order, and any other paper the board must serve upon a party, shall be served upon each party or upon his or her representative. If the board serves a paper on a party personally, the board shall furnish a copy to the representative of record of the party. Service on the counsel or other representative representing a party constitutes service on the party.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-160, filed 8/27/84.]

WAC 296-13-170 Method of service of process. Papers shall be served personally, by registered or certified mail, or by telegraph.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-170, filed 8/27/84.]

WAC 296-13-180 When service of process is complete. Service upon a party shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-180, filed 8/27/84.]

WAC 296-13-190 Subpoenas. (1) In a contested case, upon application of a party or a representative, the board shall issue to the party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in the contested case. The board may condition the issuance of the subpoenas upon a showing of the general relevance and reasonable scope of the testimony or evidence sought. An attorney of a party in a contested case may issue subpoenas under his or her own authority.

(2) Every subpoena shall state the name of the board and the title of the proceeding, and shall command the person to whom it is directed to attend at a specified time and place and give testimony or to produce designated books, documents, or things under his or her control.

(3) Attendance of witnesses and production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-190, filed 8/27/84.]

WAC 296-13-200 Subpoenas—Service and fees. (1) Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to the person and by tendering him or her on demand the fees for one day's attendance and the mileage allowed by law.

(2) Witnesses summoned before the agency shall be paid, by the party at whose instance they appear, the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

(3) The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit, or acknowledgement of service with the board. Failure to make proof of service does not affect the validity of the service.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-200, filed 8/27/84.]

WAC 296-13-210 Quashing of subpoenas. Upon motion made at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed and upon notice to the party to whom the subpoena was issued, the board may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-210, filed 8/27/84.]

WAC 296-13-220 Enforcement of subpoenas. Upon application and for good cause shown a party may seek judicial enforcement of subpoenas that have been issued and that have not been quashed.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-220, filed 8/27/84.]

WAC 296-13-230 Right to take depositions and interrogatories in contested cases. (1) A party may take the testimony of any person, including a party, by deposition upon oral examination or written interrogatories for use as evidence in a contested case, except that leave of the deponent must be obtained if a proponent serves notice of the deposition or interrogatories on the deponent within twenty days after the filing of an appeal. The attendance of the deponent may be compelled by the use of a subpoena. Depositions shall be taken only in accordance with this rule and the rule on subpoenas.

(2) Unless the board otherwise orders, the deponent may be examined regarding any matter that is relevant to the subject matter involved in the contested case and is not privileged.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-230, filed 8/27/84.]

WAC 296-13-240 Officer before whom depositions are taken. Within the United States, or within a territory or insular possession subject to the dominion of the United States, depositions shall be taken before an officer authorized to administer oaths by the laws of the state of Washington or of the place where the examination is held. Within a foreign country, depositions shall be taken before a secretary of an embassy or legation, consul general, vice consul or consular agent of the United States, or before a person designated by the board or agreed upon by the parties by stipulation in writing filed with the board. Except by stipulation, no deposition shall be taken before a person who is a party or the privy of a party, or a privy of any counsel of a party, or who is financially interested in the contested case.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-240, filed 8/27/84.]

WAC 296-13-250 Notice of depositions. A party that desires to take the deposition of any person upon oral examination shall give reasonable notice of not less than three days in writing to the board and all parties. The notice shall state the time and place for taking the deposition and the name and address of each person to be examined, if known. If the name is not known, the notice shall contain a general description sufficient to identify him or her or the particular class or group to which he or she belongs. On motion of a party upon whom the notice is served, the board may, for cause shown, enlarge or shorten the time. If the parties so stipulate in writing, depositions may be taken before any person, at any time or place, upon any notice, and in any manner.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-250, filed 8/27/84.]

WAC 296-13-260 Depositions and interrogatories in contested cases—Protection of parties and deponents. After notice is served for taking a deposition or of written interrogatories, upon the board's own motion or upon motion made by any party or by the deponent and upon notice and for good cause shown, the board may order that: (1) The deposition or interrogatories shall not be taken, (2) the deposition may be taken only at some designated place other than that stated in the notice, (3) the deposition may be taken only on written interrogatories, (4) the examination shall be limited to certain matters, (5) the examination shall be held with no one present except the parties to the action and their officers or counsel, (6) after being sealed, a deposition shall be opened only by order of the board, (7) business secrets or secret processes, developments, or research need not be disclosed, or (8) the parties shall simultaneously file specified documents, or information enclosed in sealed envelopes to be opened as directed by the board. The board may make any other order that justice requires to protect the party or witness from annoyance, embarrassment, or oppression. At any time during the taking of a deposition, on motion of any party or of the deponent and upon a showing that the examination is being conducted in bad faith or in a manner as unreasonably to annoy, embarrass, or oppress the deponent or party, the board may order the officer conducting the examination to cease taking the deposition, or may limit the scope and manner of the taking of the deposition as provided in subsections (1) through (8) of this section. If the order ends the examination, it shall be resumed thereafter only upon the order of the board. Upon demand of the objecting party or deponent, the taking of the deposition shall be suspended for the time necessary to move for an order.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-260, filed 8/27/84.]

WAC 296-13-270 Oral examination and cross-examination in depositions. Examination and cross-examination during oral examination shall proceed as at an oral hearing. In lieu of participating in the oral examination, a party may transmit written interrogatories to the person taking the disposition who, without previously disclosing them to any person, and after the direct testimony is complete, shall propound them seriatim to the deponent and record the answers verbatim.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-270, filed 8/27/84.]

WAC 296-13-280 Recording of depositions. The person before whom the deposition is to be taken shall put the deponent on oath and shall personally, or by someone acting under his or her direction and in his or her presence, record the testimony. Objections to the notice, the qualifications of the person taking the deposition, the manner of taking the deposition, to the evidence presented, or to the conduct of the person taking the deposition or of any party, shall be noted in the record. All objections by any party not made are waived.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-280, filed 8/27/84.]

WAC 296-13-290 Depositions in contested cases—Signing attestation and return. (1) When the testimony of a deposition is fully transcribed, the deposition shall be submitted to the deponent for examination and shall be read to or by him or her, unless the examination and reading are waived by the deponent and by the parties. Any changes in form or substance that the deponent desires to make shall be entered upon the deposition by the person taking the deposition with a statement of the reasons given by the deponent for making them. The deposition shall then be signed by the deponent, unless the parties by stipulation waive the signing or the deponent is ill or cannot be found or refuses to sign. If the deponent does not sign the deposition, the person taking the deposition shall sign it and state on the record whether the deponent did not sign because of a waiver, an illness or absence, or a refusal to sign together with the reason, if any, given for a refusal. The deposition may then be used as fully as though signed, unless on a motion to suppress, the board holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

(2) The person taking the deposition shall certify on the deposition that the deponent was duly sworn by him or her and that the deposition is a true record of the testimony given by the witness. He shall then securely seal the deposition in an envelope indorsed with the title of proceeding and marked "Deposition of (here insert name of witness)" and shall promptly send it by registered or certified mail to the board, for filing. The party taking the deposition shall give prompt notice of its filing to all other parties.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-290, filed 8/27/84.]

WAC 296-13-300 Use and effect of depositions. Subject to rulings by the board upon objections, a deposition taken and filed as provided in WAC 296-13-290 will not become a part of the record in the proceeding until received in evidence by the board upon its own motion or the motion of a party. Except by agreement of the parties or ruling of the board, a deposition will be received only in its entirety. A party does not make a party, or the privy of a party, or any hostile witness its witness by taking his or her deposition. A party may rebut any relevant evidence contained in a deposition whether introduced by him or her or by any other party.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-300, filed 8/27/84.]

WAC 296-13-310 Fees of deponents. Deponents are entitled to the same fees as are paid for similar services in the superior courts of the state of Washington. The fees shall be paid by the party at whose instance the depositions are taken.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-310, filed 8/27/84.]

WAC 296-13-320 Submission of interrogatories. If a deposition is taken upon written interrogatories, the party offering the testimony shall consecutively number each interrogatory, file them with the board, and serve them on all parties and the person who is to answer them with a notice stating the name and address of the person who is to answer them.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-320, filed 8/27/84.]

WAC 296-13-330 Attestation and return of interrogatories. The person before whom the interrogatories are answered shall (1) certify under his or her official signature and seal that the deponent was duly sworn by him or her, that the interrogatories and answers are a true record of the deponent's testimony, and (2) promptly file the original copy of the deposition and exhibits with his or her attestation to the board, serve one copy on the counsel who submitted the interrogatories, and serve a copy on the deponent and on each other party.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-330, filed 8/27/84.]

WAC 296-13-340 Official notice—Matters of law. The board, upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals, and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders, and notices published in the Federal Register;

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals, and committee reports; decisions of administrative agencies of the state of Washington, and executive orders and proclamations by the governor; and all rules, orders, and notices published in the Washington State Register.

(3) **Governmental organization.** The organization, territorial limitations, officers, departments, and general administration of the governments of the state of Washington, the United States, the several states, and foreign nations.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-340, filed 8/27/84.]

WAC 296-13-350 Official notice—Material facts. (1) In the absence of controverting evidence, the board, upon request made before or during a hearing, may officially notice:

(a) The pendency of, the issues and position of the parties in, and the disposition of any proceeding then pending before or previously concluded by the board.

(b) General customs and practices followed in the transaction of business;

(c) Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts that are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency; and

(d) Matters within the technical knowledge of the board as a body of experts, or within the scope of its statutory duties, responsibilities, or jurisdiction.

(2) At any prehearing conference, or a hearing, or argument, a party may request, or the board may suggest, that official notice be taken of a material fact, which shall be stated on the record. A party or the board may also make such a request or suggestion by written notice, or in any pleading, motion, memorandum, or brief, served upon all parties, at any time before a final decision.

(3) If an initial or final decision of the board rests in whole or in part upon official notice of a material fact, the fact shall be clearly stated in the decision. In determining whether to take official notice of material facts, the board may consult any source of pertinent information, whether or not it is admissible under the rules of evidence.

(4) A party may controvert a request or a suggestion that official notice of a material fact be taken. If a decision is stated to rest in whole or in part upon official notice of a material fact that a party has not had a prior opportunity to controvert, the party may controvert the fact by exception if the decision is a proposed decision, or by a petition for reconsideration if the decision is a final decision. The controversion shall concisely and clearly set forth the sources, authority, and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision.

(5) Nothing herein shall be construed to preclude the board from using its experience, technical competence, and specialized knowledge in evaluating the evidence presented to them.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-350, filed 8/27/84.]

WAC 296-13-360 Presumptions. Upon proof of the predicate facts specified in this section by clear and convincing evidence, and without substantial dispute, the board, with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) That a fact of a continuous nature, proved to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one that usually exists for at least that period of time;

(2) That persons or objects of the same name and description are identical;

(3) That mail matter, communications, express, or freight that are properly addressed, marked, billed, and delivered as appropriate to the post office, telegraph, cable

or radio company, or authorized common carrier of property, and for which with all postage, tolls, or charges are properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact that, in the ordinary and usual course of affairs, usually and regularly coexists with the fact presumed;

(5) That a person for whom an act is done or to whom a transfer is made has, does, or will accept the act or transfer where it is clearly in his or her own self-interest so to do;

(6) That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed, or withheld by a party in control of the fact, would, if produced, corroborate the evidence of the adversary party with respect to the fact.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-360, filed 8/27/84.]

WAC 296-13-370 Stipulations and admissions of record. The existence or nonexistence of a fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound by the stipulation or admission, and no other evidence with respect to the fact will be received upon behalf of the party.

The stipulation or admission is binding upon the parties by whom it is made and their privies, and upon all other parties to the proceeding who do not expressly deny the existence or nonexistence of the fact, upon the making thereof, if made on the record at a prehearing conference, oral hearing, or oral argument, or by a writing filed and served upon all parties within five days after a copy of the stipulation or admission has been served upon them.

A party bound by a stipulation or admission of record at any time before the final decision may be permitted to withdraw it in whole or in part by showing to the satisfaction of the hearing officer of the agency that the stipulation or admission was made inadvertently or under a bona fide mistake of fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-370, filed 8/27/84.]

WAC 296-13-380 Form and content of board decisions in contested cases. (1) Every proposed and final decision and order in a contested case shall:

(a) Contain the correct names of the board and the case;

(b) Name all parties and counsel in the case;

(c) State concisely the nature and background of the case; and

(d) Contain numbered findings of fact and conclusions of law.

(2) Whenever practical, (a) the conclusions of law shall include the reasons for and precedents supporting the particular order or remedy afforded; and (b) the conclusions and order shall refer to the appropriate laws and rules.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-380, filed 8/27/84.]

WAC 296-13-390 Definition of issues before hearing. In all contested cases the issues to be adjudicated shall be made as precise as possible, in order that the board may proceed promptly to conduct the hearing on relevant and material matter only.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-390, filed 8/27/84.]

WAC 296-13-400 Prehearing conference. (1) In a contested case the board, upon its own motion or the motion of one of the parties, may direct the parties to appear at a specified time and place for a conference to consider:

(a) The settlement or simplification of issues;

(b) The necessity of amendments to the pleadings;

(c) The possibility of obtaining stipulations, or admissions of facts and of documents;

(d) The limitation of the number of expert witnesses; or

(e) Other matters that may help dispose of the proceeding.

(2) The board shall make an order that recites the action taken at a prehearing conference and the agreements made by the parties as to any of the matters considered and that limits the issues for hearing to those not disposed of by admission or agreement. The order shall control the subsequent course of the contested case unless modified for good cause by a later order.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-400, filed 8/27/84.]

WAC 296-13-410 Submission of documentary evidence in advance. Where practicable the board may require that:

(1) All documentary evidence that is to be offered during a hearing, deposition, or prehearing conference be submitted to the board and to the other parties sufficiently in advance of the taking of evidence to permit study and preparation of cross-examination and rebuttal evidence;

(2) Documentary evidence not submitted in advance, as required by subsection (1) of this section, be not received in evidence in the absence of a clear showing that the offering party had good cause for its failure to produce the evidence sooner;

(3) The authenticity of all documents submitted in advance, as required by subsection (1) of this section, be deemed admitted unless a written objection to admission is filed before the time for taking the evidence. A party will be permitted to challenge the authenticity at a later time upon a clear showing of good cause for failure to have filed a written objection.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-410, filed 8/27/84.]

WAC 296-13-420 Continuances. A party who wants a continuance shall, immediately upon receipt of notice of a hearing, prehearing conference, or deposition, or as soon thereafter as facts requiring a continuance come to his or her knowledge, notify the board of his or her desire, stating in detail the reasons why a continuance is necessary. A formal motion is not required. The board, in ruling on a request for continuance, shall consider whether the request was timely made. For good cause shown, the board may grant a

continuance and may at any time order a continuance upon its own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the board may continue the hearing. Oral notice of a continuance, given at a hearing, shall constitute final notice of the continuance.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-420, filed 8/27/84.]

WAC 296-13-430 Rules of evidence—Admissibility criteria. Subject to the other provisions of this chapter, all relevant evidence is admissible that, in the opinion of the board, is the best evidence reasonably obtainable, having due regard for its necessity, availability, and trustworthiness. In passing upon the admissibility of evidence, the board shall consider, but need not follow, the rules of evidence governing civil proceedings in the superior court of the state of Washington.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-430, filed 8/27/84.]

WAC 296-13-440 Rules of evidence—Tentative admission—Exclusion—Discontinuance—Objections. When a party objects to the admissibility of evidence, the evidence may be received subject to a later ruling. The board may, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. A party that objects to the introduction of evidence shall state the precise grounds of the objection at the time the evidence is offered.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-440, filed 8/27/84.]

Chapter 296-14 WAC
INDUSTRIAL INSURANCE

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-14-950 Appointment of attorney as special assistant. [Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-950, filed 3/31/88.] Repealed by 93-23-060, filed 11/15/93, effective 1/1/94. Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304.

296-14-960 Limitations of appointment. [Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-960, filed 3/31/88.] Repealed by 93-23-060, filed 11/15/93, effective 1/1/94. Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304.

WAC 296-14-010 Reciprocal agreements—Industrial insurance. (1) In accordance with the authority contained in RCW 51.12.120, the director of the department of labor and industries has heretofore or may hereafter enter into certain reciprocal agreements with other states and provinces of Canada and the agencies of such states or provinces which administer workers' compensation laws with respect to conflicts of jurisdiction and the assumption of jurisdiction in cases where the contract of employment arises in one state or province and the injury occurs in another.

(2) Consistent with the provisions of RCW 51.12.120 and chapter 34.05 RCW, the director of the department of labor and industries has entered into reciprocal agreements with other states and provinces which are in full force and effect on the subject matter as set forth in subsection (1) which states and provinces are:

(a) Idaho
(b) Montana
(c) North Dakota
(d) Nevada
(e) Oregon
(f) Wyoming
(g) South Dakota

(3) The reciprocal agreements as listed above in subsection (2) of this section are hereby promulgated and adopted as regulations of the department in accordance with the provisions of RCW 51.12.120 and such reciprocal agreements shall be kept on file in the office of the director of the department of labor and industries and available for public inspection and review during the regular business hours of such office.

[Statutory Authority: RCW 51.32.110 and 51.32.190(6). 90-19-028, § 296-14-010, filed 9/12/90, effective 10/13/90. Statutory Authority: RCW 51.04.020(1). 84-06-018 (Order 84-3), § 296-14-010, filed 2/29/84; Order 74-29, § 296-14-010, filed 5/29/74, effective 7/1/74.]

WAC 296-14-015 Industrial insurance labor-management cooperation program. (1) In accordance with authority contained in SSB 5374, the industrial insurance labor-management cooperation program is established within the industrial insurance division of the department to nurture and support efforts by labor and management throughout the state to cooperatively address issues specific to the industrial insurance system and its operation in a local area or industry. The program is dedicated to assisting labor and management in forming committees to help injured workers with industrial insurance claim problems, speedy recovery, and return to employment. The department will assist and facilitate, but not dominate, the committees' functions. The

ultimate goal of this program is the creation of safer workplaces and a better working environment for all employees. To achieve this goal, the department's actions will include, but not be limited to:

(a) Hiring a coordinator to establish and implement the program.

(b) Developing a marketing strategy to assist in the development of the program.

(c) Contacting interested businesses, agencies, and labor organizations to participate in the program.

(d) Continuing efforts with existing committees established prior to passage of SSB 5374 to ensure continued success.

(e) Developing an agency protocol that will include, but not be limited to:

(i) A marketing package.

(ii) A vehicle for measuring program results.

(iii) A communications network to disseminate news, events, and highlights of the program.

(2) Established committees will be encouraged to meet and interact at local, regional, and state-wide levels. The department may assist committee interactions by providing forums for committee meetings.

(3) The department will report quarterly to the workers' compensation advisory committee and annually to the legislature on the progress and status of the program as long as the program is legislatively authorized.

[Statutory Authority: 1991 c 172. 92-03-053, § 296-14-015, filed 1/13/92, effective 2/13/92.]

WAC 296-14-100 Definition of voluntary retirement and no longer attached to the work force. (1) For the purpose of this title a claimant will be deemed to be voluntarily retired and no longer attached to the work force if all of the following conditions are met:

(a) The claimant is no longer receiving income, salary or wages from any gainful employment.

(b) The claimant has provided no evidence, if requested by the department or the self-insurer, of a bona fide attempt to return to gainful employment after retirement.

(2) Payment made by the worker or on his or her behalf in the form of premiums, for the purpose of continuation of life or medical insurance coverage, union dues or similar payments shall not constitute attachment to the work force.

(3) The claimants of new or reopened claims will not be deemed voluntarily retired if the injury or occupational disease was a proximate cause of the decision to retire and sever the attachment to the work force.

[Statutory Authority: RCW 51.32.060, 51.32.090, 51.32.160, 51.21.220(6) [51.32.220(6)] and 51.32.240 (1), (2) or (3). 86-18-036 (Order 86-33), § 296-14-100, filed 8/28/86.]

WAC 296-14-150 Definition of gainful employment for wage. Gainful employment for wages for the purposes of RCW 51.32.160 shall mean performing work at any regular gainful occupation for income, salary or wages.

[Statutory Authority: RCW 51.32.060, 51.32.090, 51.32.160, 51.21.220(6) [51.32.220(6)] and 51.32.240 (1), (2) or (3). 86-18-036 (Order 86-33), § 296-14-150, filed 8/28/86.]

WAC 296-14-200 Waiver of recovery for worker compensation benefits overpayments. Whenever the director determines whether to exercise the discretion granted by RCW 51.32.240 (1), (2) or (3) or 51.32.220(6) the following shall apply:

(1) The decision of the director shall apply to the state fund or to the self-insurer, as the case may be.

(2) In the case of recoupment of an overpayment from any future payments, the director will entertain a request to exercise his or her discretion to waive recovery up to sixty days after communication of the order and/or notice to the recipient that benefits are being withheld to satisfy the previous overpayment.

(3) A finding by the director that recovery of an overpayment would be against equity and good conscience shall be required before the overpayment can be waived in whole or in part. The director shall consider the following factors and any other factors relevant to the particular case:

(a) Whether the claimant was without fault in applying for and accepting benefits which gave rise to the overpayment;

(b) Whether recovery of the overpayment, in whole or in part, would defeat the purposes of Title 51 RCW;

(c) Whether the claimant reasonably relied upon the benefits, or notice that such benefits would be paid and relinquished a valuable right or changed his or her position for the worse;

(d) Whether the claimant reasonably relied upon misinformation from an official source (i.e., a representative of the department or self-insurer, as the case may be) in accepting the benefit payment which gave rise to the overpayment.

(4) The claimant's application for waiver of an overpayment contemplated under RCW 51.32.240 (1), (2), or (3), or 51.32.220(6) shall clearly set forth the reason(s) that he or she believes that recovery of the overpayment in whole or in part, as the case may be, is against equity and good conscience.

[Statutory Authority: RCW 51.32.060, 51.32.090, 51.32.160, 51.21.220(6) [51.32.220(6)] and 51.32.240 (1), (2) or (3). 86-18-036 (Order 86-33), § 296-14-200, filed 8/28/86.]

WAC 296-14-300 Mental condition/mental disabilities. (1) Claims based on mental conditions or mental disabilities caused by stress do not fall within the definition of an occupational disease in RCW 51.08.140.

Examples of mental conditions or mental disabilities caused by stress that do not fall within occupational disease shall include, but are not limited to, those conditions and disabilities resulting from:

(a) Change of employment duties;

(b) Conflicts with a supervisor;

(c) Actual or perceived threat of loss of a job, demotion, or disciplinary action;

(d) Relationships with supervisors, coworkers, or the public;

(e) Specific or general job dissatisfaction;

(f) Work load pressures;

(g) Subjective perceptions of employment conditions or environment;

(h) Loss of job or demotion for whatever reason;

(i) Fear of exposure to chemicals, radiation biohazards, or other perceived hazards;

(j) Objective or subjective stresses of employment;

(k) Personnel decisions;

(l) Actual, perceived, or anticipated financial reversals or difficulties occurring to the businesses of self-employed individuals or corporate officers.

(2) Stress resulting from exposure to a single traumatic event will be adjudicated with reference to RCW 51.08.100.

[Statutory Authority: Chapters 51.08 and 51.32 RCW. 88-14-011 (Order 88-13), § 296-14-300, filed 6/24/88.]

WAC 296-14-350 Claim allowance and wage determination in occupational disease cases. (1) The liable insurer in occupational disease cases is the insurer on risk at the time of the last injurious exposure to the injurious substance or hazard of disease during employment within the coverage of Title 51 RCW which gave rise to the claim for compensation. Such Title 51 RCW insurer shall not be liable, however, if the worker has a claim arising from the occupational disease that is allowed for benefits under the maritime laws or Federal Employees' Compensation Act.

(2) The compensation schedules and wage base for claims shall be based on the schedule in effect on the date of disease manifestation. Compensation shall be based on the monthly wage of the worker as follows:

(a) If the worker was employed at the time the disease required medical treatment or became totally or partially disabling, whichever occurred first, compensation shall be based on the monthly wage paid on that date regardless of whether the worker is employed in the industry that gave rise to the disease or in an unrelated industry.

(b) If the worker was not employed, for causes other than voluntary retirement, at the time the disease required medical treatment or became totally or partially disabling, whichever occurred first, compensation shall be based upon the last monthly wage paid.

(3) Benefits shall be paid in accordance with the schedules in effect on the date of manifestation. Manifestation is the date the disease required medical treatment or became totally or partially disabling, whichever occurred first, without regard to the date of the contraction of the disease or the date of filing the claim.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-14-350, filed 11/15/93, effective 1/1/94. Statutory Authority: Chapters 51.08 and 51.32 RCW. 88-14-011 (Order 88-13), § 296-14-350, filed 6/24/88.]

WAC 296-14-400 Reopenings for benefits. The director at any time may, upon the workers' application to reopen for aggravation or worsening of condition, provide proper and necessary medical and surgical services as authorized under RCW 51.36.010. This provision will not apply to total permanent disability cases, as provision of medical treatment in those cases is limited by RCW 51.36.010.

The seven-year reopening time limitation shall run from the date the first claim closure becomes final and shall apply to all claims regardless of the date of injury. In order for claim closure to become final on claims where closure occurred on or after July 1, 1981, the closure must include documentation of medical recommendation, advice or examination. Such documentation is not required for closing orders issued prior to July 1, 1981. First closing orders issued between July 1, 1981, and July 1, 1985, shall for the purposes of this section only, be deemed issued on July 1, 1985.

The director shall, in the exercise of his or her discretion, reopen a claim provided objective evidence of worsening is present and proximately caused by a previously accepted asbestos-related disease.

In order to support a final closure based on medical recommendation or advice the claim file must contain documented information from a doctor, or nurse consultant (departmental) or nurse practitioner supervised by a doctor. The doctor or nurse practitioner may be in private practice, acting as a member of a consultation group, employed by a firm, corporation, or state agency.

For the purpose of this section, a "doctor" is defined in WAC 296-20-01002.

When a claim has been closed by the department or self-insurer for sixty days or longer, the worker must file a written application to reopen the claim. An informal written request filed without accompanying medical substantiation of worsening of the condition will constitute a request to reopen, but the time for taking action on the request shall not commence until a formal application is filed with the department or self-insurer as the case may be.

A formal application occurs when the worker and doctor complete and file the application for reopening provided by the department. Upon receipt of an informal request without accompanying medical substantiation of worsening of the worker's condition, the department or self-insurer shall promptly provide the necessary application to the worker for completion.

If, within seven years from the date the first closing order became final, a formal application to reopen is filed which shows by "sufficient medical verification of such disability related to the accepted condition(s)" that benefits are payable, the department, or the self-insurer, pursuant to RCW 51.32.210 and 51.32.190, respectively shall mail the first payment within fourteen days of receiving the formal application to reopen. If the application does not contain sufficient medical verification of disability, the fourteen-day period will begin upon receipt of such verification. If the application to reopen is granted, compensation will be paid pursuant to RCW 51.28.040. If the application to reopen is denied, the worker shall repay such compensation pursuant to RCW 51.32.240.

Applications for reopenings filed on or after July 1, 1988, must be acted upon by the department within ninety days of receipt of the application by the department or the self-insurer. The ninety-day limitation shall not apply if the worker files an appeal or request for reconsideration of the department's denial of the reopening application.

The department may, for good cause, extend the period in which the department must act for an additional sixty days. "Good cause" for such an extension may include, but not be limited to, the following:

(1) Inability to schedule a necessary medical examination within the ninety-day time period;

(2) Failure of the worker to appear for a medical examination;

(3) Lack of clear or convincing evidence to support reopening or denial of the claim without an independent medical examination;

(4) Examination scheduled timely but cannot be conducted and a report received in sufficient time to render a decision prior to the end of the ninety-day time period.

The department shall make a determination regarding "good cause" in a final order as provided in RCW 51.52.050.

The ninety-day limitation will not apply in instances where the previous closing order has not become final.

[Statutory Authority: RCW 51.32.190 and 51.32.210. 90-22-054, § 296-14-400, filed 11/5/90, effective 12/6/90. Statutory Authority: Chapters 34.04 [34.05], 51.04, 51.32 and 51.36 RCW. 90-04-007, § 296-14-400, filed 1/26/90, effective 2/26/90. Statutory Authority: Chapters 51.08 and 51.32 RCW. 88-14-011 (Order 88-13), § 296-14-400, filed 6/24/88.]

WAC 296-14-410 Reduction, suspension, or denial of compensation as a result of noncooperation. In accordance with RCW 51.32.110, workers claiming benefits under this title are required to attend and cooperate at medical examinations and vocational evaluations requested by the department or self-insurer, to refrain from unsanitary or injurious practices which imperil or retard recovery, and to accept medical and surgical treatment reasonably essential for recovery from the industrial injury or occupational disease.

When a worker obstructs or delays recovery from the industrial injury or occupational disease or fails to attend or cooperate, without good cause, at scheduled examinations or evaluations, or engages in unsanitary or injurious practices, or refuses, without good cause, to undergo proper and necessary treatment, the department, or self-insurer upon approval of the department, may reduce, suspend, or deny benefits to the worker.

Actions of a worker's representative that result in refusal, obstruction, delay, or noncooperation will be imputed to the worker.

The department or self-insurer, upon approval of the department, may reduce, suspend, or deny benefits by any of the following means so long as the refusal, obstruction, delay, or noncooperation continues without good cause: Reduce current or future time-loss compensation by the amount of the charge incurred by the department or self-insurer for any examination, evaluation, or treatment which the worker fails to attend; reduce, suspend, or deny time-loss compensation in whole or in part; or suspend or deny medical benefits.

Unless otherwise agreed to by the worker, the department or self-insurer shall mail written notice of any requested examination directly to the worker and to the worker's representative, if any, at least fourteen calendar days prior to the requested examination but not greater than sixty days. The notice shall state the date, time, and location of the examination.

A worker shall not be deemed to have refused to attend a scheduled examination if:

(1) The department or self-insurer did not mail notice of the examination at least fourteen calendar days prior to the examination;

(2) The worker arrives at the examination location within thirty minutes after the scheduled time of examination; or

(3) The worker leaves the examination location later than one hour after the scheduled time of examination and the worker has not yet been called for the examination.

Prior to the issuance of an order reducing, suspending or denying benefits, the department or self-insurer must request, in writing, from the worker or worker's representative the reason for the refusal, obstruction, delay, or noncooperation.

If the department determines no good cause exists, or if the worker fails to respond to the department's request for the reason for the refusal, obstruction, delay or noncooperation, within thirty days after the letter is issued the department will issue an order reducing, suspending, or denying benefits.

[Statutory Authority: RCW 51.32.110 and 51.32.190(6). 90-19-028, § 296-14-410, filed 9/12/90, effective 10/13/90.]

WAC 296-14-420 Payment of benefits—Aggravation reopening/new injury. (1) Whenever an application for benefits is filed where there is a substantial question whether benefits shall be paid pursuant to the reopening of an accepted claim or allowed as a claim for a new injury or occupational disease, the department shall make a determination in a single order. Where one of the claims is with a self-insured employer and another is with a state fund employer, such determination shall be made jointly by the program managers for claims administration and self insurance, or their respective designees.

(2) Pending entry of the order, benefits shall be paid promptly by the entity which would be responsible if the claim were determined to be a new injury or occupational disease.

(3) The department is required to act under this rule only if:

(a) There is substantial evidence that the worker will be determined to be entitled to benefits on one of the claims; and

(b) There is uncertainty regarding which of the entities is responsible.

(4) Time-loss compensation shall be paid at the lesser of the two entitlements that may apply to the claim until responsibility has been determined between state fund and self-insured employer, two self-insured employers, or two state fund employers.

(5) If, upon final determination of the responsible insurer, the entity that paid benefits under subsection (2) of this section is determined not to be responsible for payment of benefits, such entity shall be reimbursed by the responsible entity for all amounts paid.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-14-420, filed 11/15/93, effective 1/1/94. Statutory Authority: RCW 51.32.110 and 51.32.190(6). 90-19-028, § 296-14-420, filed 9/12/90, effective 10/13/90.]

WAC 296-14-600 Payment of benefits on asbestos-related disease claims. The department shall furnish the benefits provided under Title 51 RCW to any worker or beneficiary who may have a right or claim for benefits under the maritime laws of the United States resulting from an asbestos-related disease if there are objective clinical findings to substantiate that the worker has an asbestos-

related claim for occupational disease; and the worker's employment history has a prima facie indicia of injurious exposure to asbestos fibers while employed in the state of Washington in employment covered under Title 51 RCW.

(1) A worker's employment history will be deemed to have a prima facie indicia of injurious exposure to asbestos fibers if the employment history as contained in the department's file permits a reasonable conclusion that the worker was exposed to asbestos fibers and that such exposure was of sufficient duration to be injurious. "Injurious" means impairing to either a partial or total extent, and may be either permanent or temporary.

(2) Whenever the department has determined to pay benefits pursuant to chapter 271, Laws of 1988, the department shall render a decision as to the liable insurer and shall continue to pay benefits until the liable insurer initiates payments or benefits are otherwise properly terminated.

The department shall render its decision in a final order as provided in RCW 51.52.050.

Initiation of payments by a liable insurer shall be deemed to occur on the date such insurer issues a check or warrant or otherwise remits to the worker, beneficiary, or any provider any payment of any benefits owed by such insurer on the claim for asbestos.

(3) Benefits shall be paid on all pending asbestos-related claims as of July 1, 1988. Pending claims are those which have not been finally adjudicated by order of the department or the board of industrial insurance appeals or by the entry of a judgment of a superior court or decision of the court of appeals or the supreme court.

If any order of the department granting such benefits is appealed, benefits shall continue, if otherwise available, until a final determination is made by the board of industrial insurance appeals or the courts, or upon initiation of payments by a liable insurer.

(4) If benefits are paid by the department from the medical aid fund on an asbestos-related claim, and it is determined by the department that such benefits are owed to the worker or beneficiary by an insurer under the maritime laws of the United States or by another federal program other than the Federal Social Security, Old Age Survivors and Disability Insurance Act, 42 U.S.C., the department shall pursue such insurer or program to recover such benefits as may have been paid by the department.

The determination by the department shall be expressed in a final order as provided by RCW 51.52.050.

(5) Whenever a self-insured employer is determined to be liable, the self-insured employer shall reimburse benefits to the department within ten days after the department order becomes final and binding. Failure to do so shall subject the employer to a penalty as authorized in RCW 51.48.080.

(6) The director's discretion to waive recovery of the benefits paid to the claimant or beneficiary shall be exercised in accordance with WAC 296-14-200 (3)(c).

(7) No information obtained under this section is subject to release by subpoena or other legal process. The department will release information only to those persons authorized access to claim files by RCW 51.28.070.

[Statutory Authority: Chapters 51.08 and 51.32 RCW. 88-14-011 (Order 88-13), § 296-14-600, filed 6/24/88.]

WAC 296-14-900 Purpose. WAC 296-14-900 through 296-14-940 implement RCW 51.12.102 and 51.24.110, which authorizes the department to use special assistant attorneys general.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-14-900, filed 11/15/93, effective 1/1/94. Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-900, filed 3/31/88.]

WAC 296-14-910 Definitions. In WAC 296-14-900 through 296-14-940:

"Department" means the department of labor and industries.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-14-910, filed 11/15/93, effective 1/1/94. Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-910, filed 3/31/88.]

WAC 296-14-920 Qualification criteria. To qualify for the list of attorneys from which appointments may be made to represent the department as special assistant attorneys general, an attorney must meet the following minimum criteria. An attorney must:

(1) Be an active member of the Washington State Bar Association;

(2) Maintain a trust account in compliance with the rules of professional conduct; and

(3) Have and maintain in force professional liability insurance.

[Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-920, filed 3/31/88.]

WAC 296-14-930 Application by attorneys. (1) An attorney who meets the qualification criteria may seek inclusion on the list of attorneys by filing an application with the department. Application forms may be obtained from the office of the attorney general, the Washington State Bar Association, or the department.

(2) The application form shall be prepared by the department in consultation with the office of the attorney general. The application shall require the applicant to declare under penalty of perjury that the information is true and shall require the applicant to inform the department and the attorney general of any changes in his or her qualifications.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-14-930, filed 11/15/93, effective 1/1/94. Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-930, filed 3/31/88.]

WAC 296-14-940 List of attorneys. (1) The department shall determine from the application and from other sources whether an attorney meets the criteria of WAC 296-14-920. The department may consult with the Washington State Bar Association and the office of the attorney general if necessary to make the determination.

(2) The department shall compile and maintain the lists of attorneys from which the attorney general may select special assistant attorneys general to represent the department.

(3) The department shall, once every year, provide the attorney general and the Washington State Bar Association with a current copy of the lists of the attorneys.

(4) RCW 51.12.102, 51.24.110 and WAC 296-14-900 through 296-14-940 do not give the attorneys on the special assistant attorney general lists any right to any expectation of employment as a special assistant attorney general and/or assistant attorney general.

(5) The designation "special assistant attorney general" shall not be used by a private attorney on any correspondence or pleadings relating to services, nor shall they refer to themselves as such other than as necessary to show their authority in a specific case to represent the department.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-14-940, filed 11/15/93, effective 1/1/94. Statutory Authority: RCW 51.24.110. 88-08-026 (Order 88-03), § 296-14-940, filed 3/31/88.]

WAC 296-14-970 Worker's review of claim file. (1) Pursuant to RCW 51.28.070, workers may be allowed to review their claim file(s) upon written request to the department or self-insurer. The written request should contain the worker's name, claim number, signature, and the information requested. If the request is approved, the department or self-insurer shall provide a copy of the claim file to the worker.

(2) Reasons for denying release of a claim file, to a worker shall include, but not be limited to the following:

(a) Presence of psychological, mental health, or physical treatment records, investigative reports or other records, release of which may not be in the interest of the worker.

(b) Medical opinion or other documented information indicates the worker is a danger to himself or herself or others.

(3) If, pursuant to the criteria established under subsection (2) of this section, the self-insured employer determines that release of the claim file, in whole or in part, may not be in the worker's interest, the employer must submit a request for denial with explanations along with a copy of that portion of the claim file not previously submitted to the self-insurance section within twenty days after receipt of the request from the worker.

(4) If the request for the claim file is denied, in whole or in part, a written order of denial will be issued by the department and mailed to the worker. The worker may appeal the order to the board of industrial insurance appeals.

(5) The provisions of this rule will apply to all claims regardless of the date of injury.

[Statutory Authority: RCW 51.28.070. 90-18-002, § 296-14-970, filed 8/23/90, effective 9/23/90.]

Chapter 296-15 WAC
WORKERS' COMPENSATION SELF-INSURANCE RULES AND REGULATIONS

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-15-040 Payment of deficit. [Order 77-19, § 296-15-040, filed 9/26/77; Order 73-24, § 296-15-040, filed 11/23/73; Order 71-15, § 296-15-040, filed 12/1/71.] Repealed by 81-10-052 (Order 81-8), filed 5/1/81. Statutory Authority: RCW 51.04.020(1) and 51.14.020(4).

296-15-044 Payment of deficit. [Statutory Authority: RCW 51.04.020(1) and 51.14.020(4). 81-10-052 (Order 81-8), § 296-15-044, filed 5/1/81, effective 6/1/81.] Repealed by 83-07-075 (Order 83-9), filed 3/23/83. Statutory Authority: RCW 51.14.020(1).

296-15-21001 Form—SIF #3—Self-insured employer's notice of acceptance of claim. [Order 71-15, Form SIF #3 (codified as WAC 296-15-21001), filed 12/1/71.] Repealed by 84-06-031 (Order 83-38), filed 3/1/84, effective 4/1/84. Statutory Authority: RCW 51.04.020(1).

296-15-21003 Form—SIF #5—Supplemental or final report on occupational injury or disease. [Order 71-15, Form SIF #5 (codified as WAC 296-15-21003), filed 12/1/71.] Repealed by 86-18-037 (Order 86-35), filed 8/28/86. Statutory Authority: RCW 51.04.020.

WAC 296-15-010 Preamble and authority. These rules and regulations governing workers' compensation self-insurance plans were adopted by the director of the department of labor and industries in accordance with sections 27,

47, and 59, chapter 289, Laws of 1971 1st ex. sess., and chapter 51.14 RCW. These rules and regulations were adopted to implement and make specific those sections of chapter 289, Laws of 1971 1st ex. sess., relating to workers' compensation self-insurance.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-010, filed 7/1/86; Order 71-15, § 296-15-010, filed 12/1/71.]

WAC 296-15-020 Certification to self-insure. (1) The application for certification to self-insure will be made only by those firms who have been in business for a minimum of three years, on a form prescribed by the department which will elicit necessary information as to an employer's qualifications for self-insurance. The application form must be accompanied by independently audited financial statements for the most recent three years of the applicant firm's operation. Provided that, in cases where the majority of employees of a currently certified self-insurer purchase the controlling interest in that business or a portion of that business pursuant to an employees' stock ownership plan (ESOP), the three-year requirement of this subsection shall not apply. In these instances, an ESOP may apply for certification to self-insure on a form prescribed by the department, which must be accompanied by an independently audited financial statement covering a minimum of one year of the new entity's operation. Any such new entity must meet all other qualifications and requirements to obtain and maintain certification, provided that, until such time that independently audited financial statements covering three years of the applicant firm's operation are provided, such entities shall provide surety at a level equal to one hundred twenty-five percent of the amount which would otherwise be required by the department as specified in WAC 296-15-030.

(2) The application shall be supplied by the department to an employer upon the employer's request. It shall be completely and accurately filled out by the employer, and forwarded, with all necessary supporting documents, to the director.

(3) The director shall consider all matters relating to the applicant's qualifications to perform as a self-insurer, and shall advise the employer of the action taken on the application thirty days before the requested certification date. If deemed necessary for obtaining further information, the director may extend the time for acting on the application. Employers who are denied certification due to deficient accident prevention programs may be required to wait six months before being considered for certification again.

(4) An employer granted approval to self-insure will be required to acknowledge, in writing, its responsibility for the payment of benefits on all claims occurring during its period of self-insurance. This obligation will continue whether the employer voluntarily surrenders its certificate to self-insure or the certificate is withdrawn by the department.

[Statutory Authority: RCW 51.04.020. 94-05-042, § 296-15-020, filed 2/9/94, effective 3/14/94; 90-14-036, § 296-15-020, filed 6/29/90, effective 7/30/90; 88-12-096 (Order 88-07), § 296-15-020, filed 6/1/88; 86-14-079 (Order 86-25), § 296-15-020, filed 7/1/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-020, filed 12/1/83, effective 1/1/84; Order 77-19, § 296-15-020, filed 9/26/77; Order 71-15, § 296-15-020, filed 12/1/71.]

WAC 296-15-022 Corporate guarantee. If an applicant for self-insurance certification is a subsidiary, the parent firm shall furnish the department with its guarantee to assume and be responsible for the workers' compensation liabilities of the subsidiary in the event the subsidiary firm is unable or unwilling to cover these liabilities. If a self-insurer is purchased by another firm, which becomes its parent, the parent shall provide the department with its most recent audited financial statement and its guarantee. This guarantee is to be on a form provided by the department. For the purposes of this rule, a parent firm is defined as one which owns fifty percent, and/or has a controlling interest in, another firm which shall be considered to be a subsidiary. Failure by a parent to provide a guarantee for its self-insured subsidiary will result in the surety requirement of the subsidiary being established at one hundred twenty-five percent of what would otherwise be required as specified in WAC 296-15-030. Surety at the level of one hundred twenty-five percent of the normal requirement will continue to be required as long as no parental guarantee has been provided.

[Statutory Authority: RCW 51.04.020. 93-11-064, § 296-15-022, filed 5/14/93, effective 6/14/93; 88-12-096 (Order 88-07), § 296-15-022, filed 6/1/88. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-022, filed 12/1/83, effective 1/1/84.]

WAC 296-15-023 Entities included in certification. (1) The certification of a firm will include all of its subsidiaries or divisions doing business in the state of Washington. A subsidiary is defined, for the purpose of this rule, as an entity which is fifty percent owned and/or has its interest controlled by another single firm.

(2) One certificate will be issued to an approved self-insurer, including all subsidiaries or divisions. The entities will be considered as one employer for all purposes of Title 51 RCW.

[Statutory Authority: RCW 51.04.020. 93-11-064, § 296-15-023, filed 5/14/93, effective 6/14/93; 88-12-096 (Order 88-07), § 296-15-023, filed 6/1/88; 86-14-079 (Order 86-25), § 296-15-023, filed 7/1/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-023, filed 12/1/83, effective 1/1/84.]

WAC 296-15-025 Joint venture. (1) An application for certification to self-insure will be made on a form prescribed by the department which will set forth the necessary information regarding the qualifications of the joint venture to self-insure.

(2) The application form, (SIF 1-A), will be supplied by the department upon written request. It will be completed by the applicant and submitted to the department with all supporting documents attached.

(3) Applications will be acted upon within fourteen calendar days of receipt, provided, that if deemed necessary for obtaining additional information, the director may extend the time for acting on the application. Processing the application will include an evaluation of the financial condition of all parties with interest greater than twenty percent in the assets and profits of the joint venture and an evaluation of the written safety program to be in effect at all job sites of the joint venture.

(4) Certification will be effective on the first day of a calendar month following receipt of surety and all required

documentation. The director will consider the qualifications of the applicant and will advise the applicant of the action taken.

(5) Applicant joint ventures must include a sponsoring party. The word "sponsor" defines an employer presently self-insured in the state of Washington, with a majority interest in the assets and profits of the joint venture. The sponsor shall be responsible for the management of all industrial insurance claims, and shall accept full responsibility for all compensation due claimants. In the event of insolvency, bankruptcy, or dissolution of a party to the joint venture or the joint venture itself, the sponsoring party shall be held primarily responsible for all workers' compensation benefits due, with all parties to the joint venture being held jointly and severally responsible for payment of all compensations and assessments which may become due until all obligations are released by the department. At the discretion of the director and by written request from the sponsoring party, the department may release a minority party from its obligations one year after fulfillment of the construction contract and a final settlement of the joint venture account has been made.

(6) The agreement under which the joint venture will perform shall be attached to the application form. The joint venture agreement shall contain a description of the obligations and responsibilities of each party for the industrial insurance program of the joint venture. The sponsor shall accept full responsibility for the management and payment for all incurred claims during the life of and after dissolution of the joint venture.

(7) Surety will be required in an amount deemed by the department to insure sufficient financial ability to make certain the prompt payment of all compensation under this title and all assessments which may become due, but not less than the employer's normal expected annual claim liabilities. The surety bond or escrow account will name the joint venture and all the parties thereof as principal. WAC 296-15-030 shall govern the posting of surety by the joint venture.

(8) The joint venture shall be subject to all regulations, reports, and assessments set forth in Title 51 RCW and accompanying WAC rules.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-025, filed 7/1/86; 82-07-019 (Order 82-8), § 296-15-025, filed 3/10/82.]

WAC 296-15-026 Group self-insurance application. (1) An application from qualified employers for group self-insured workers' compensation coverage shall be made to the department on a form prescribed by the department and shall contain answers to all questions. Answers shall be given under oath.

(2) The application, as submitted by the initial board of trustees of the self-insurers' trust fund, shall have the following attached:

(a) A copy of the bylaws of the proposed group self-insurers' trust fund.

(b) Individual applications of each employer applying for coverage in the trust fund.

(c) A current financial statement of each member of the group and a financial statement collectively reflecting the financial condition of prospective members of the trust fund in compliance with WAC 296-15-02602(2).

(d) A listing of the estimated standard premium to be developed for each member individually and in a total as a group.

(e) The group shall engage a department-approved administrator or enter into a contract with an approved service company. A copy of the signed agreement with the service company shall be submitted with the application.

(f) Designation of the initial board of trustees and administrator.

(g) An indemnity agreement jointly and severally binding the trust fund and each member thereof to comply with the provisions of the Industrial Insurance Act. The indemnity agreement shall be in a form that has been approved by the department.

(h) A detailed budget of all projected administrative expenses for the fund year.

[Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-026, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-026, filed 12/17/82.]

WAC 296-15-02601 Group self-insurers admission of new members, termination of individual members. (1) After the inception date of the trust fund, prospective new members of the trust fund shall submit an application for membership to the board of trustees, or its administrator, on a form provided by the department. The trustees or administrator may approve the application for membership pursuant to the bylaws of the group self-insurers' trust fund. The application for membership shall then be filed with the department. Membership shall take effect the first day of the calendar quarter after reporting the approval to the department.

(2) Individual members may elect to terminate their participation in a group self-insurer's program or be subject to cancellation by the group trust fund pursuant to the bylaws of the group. Such termination or cancellation shall be effective at the end of the month in which it was reported to the department.

(3) Contributions to the trust fund for purposes of meeting the requirements of WAC 296-15-02605 shall be paid under a schedule of dates and amounts specified by the group's board of trustees, subject to the following requirement: At no time during any coverage period shall the amount collected by the trust fund to apply to costs and/or reserves for that coverage period be less than the result obtained by multiplying the fraction of the coverage period which has elapsed by the total contribution expected to be necessary to satisfy requirements of WAC 296-15-02605 for the entire coverage period.

[Statutory Authority: RCW 51.04.020. 94-17-069, § 296-15-02601, filed 8/15/94, effective 9/15/94. Statutory Authority: RCW 51.04.020(1). 84-06-031 (Order 83-38), § 296-15-02601, filed 3/1/84, effective 4/1/84; 83-24-027 (Order 83-22), § 296-15-02601, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02601, filed 12/17/82.]

WAC 296-15-02602 Group self-insurance reports. Reports as to financial standing, payroll records, coverage, accident experience, compensation payments, and such other

reports as are required to be filed with the department shall be made at the following times and in the following manner:

(1) Summary loss data shall be maintained by the trust fund and shall be available to the department when requested.

(2) Each trust fund shall, not later than July of each year, comply with WAC 296-15-080 with respect to the financial condition of the trust.

(3) Quarterly reports shall be filed with the department within sixty days from the end of a calendar quarter. A listing of any and all delinquent accounts as defined by the bylaws shall be attached as a part of this report.

(4) A certified copy of the minutes of all trustees meetings shall be retained by the trust fund administrator. The minutes shall be made available to the department upon request.

[Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02602, filed 12/17/82.]

WAC 296-15-02603 Group self-insurance trustee responsibilities. (1) To ensure the financial stability of the operations of each group self-insurers' trust fund, the board of trustees shall be responsible for all operations of the trust fund. Trustees shall be a group of members elected by members of a self-insurers' trust fund for stated terms of office to direct the administration of a self-insurers' trust fund. The duties of the trustees include the responsibility of approving applications for new members of the fund. The trustees shall be chosen from members of the self-insurers' group, but a trustee shall not be an owner or any employee of a company under contractual obligation to the fund or officer or employee of a service organization independent of the employer as defined in WAC 296-15-110. The board of trustees of each trust fund shall take all necessary precautions to safeguard the assets of the trust fund, including but not limited to all of the following:

(a) Designate a fiscal agent and/or administrator to administer the financial affairs of the trust fund in accordance with Title 51 RCWs, appropriate WACs and/or RCWs pertaining to the conduct of the group self-insured trust regarding investments of funds and budget and accounting procedures as applicable. The fiscal agent or administrator shall furnish a fidelity bond with the trust fund in an amount sufficient to protect the trust fund against the misappropriation or misuse of any moneys or securities. Evidence of such bond shall be filed with the department. The bond is one of the conditions required for approval of the establishment and continued operation of a group self-insurers' trust fund. Such fiscal agent or administrator shall not be an owner, officer, or employee of a service organization independent of the employer as defined in WAC 296-15-110.

(b) Manage deposits to and disbursements from the trust fund in accordance with WAC 296-15-02605.

(c) Audit the accounts and records of the trust fund annually or at any time required by the department. Copies of audits shall be filed with the department within six months after the close of the trust fund year.

(d) The trustees shall not extend credit to individual members for payment of premium.

(e) The board of trustees or its fiscal agent or administrator shall not utilize any moneys collected as premiums for any purpose unrelated to workers' compensation. Further, it shall not borrow any moneys from the fund or in the name of the fund without advising the department of the nature and purpose of the loan and obtaining prior department approval.

(2) The board of trustees may delegate authority for specific functions to the administrator of the group self-insurers' trust fund. The functions that may be delegated include but are not limited to such matters as contracting with a service organization agent, determining the premium charged to, and refunds payable to, members subject to the restrictions of the department for investing surplus moneys set forth in subsection (1)(e) of this section, and approving applications for membership. All delegated authority shall be specifically defined in the written minutes of the trustees' meetings.

(3) Prior to certification date excess workers' compensation coverage shall be purchased providing adequate protection against catastrophic or unexpected loss. Adequate coverage shall be maintained throughout the period of group self-insurance.

[Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-02603, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02603, filed 12/17/82.]

WAC 296-15-02604 Group self-insurance funds—Surplus distribution—Deficit. (1) Any surplus moneys for a fund year in excess of the amount necessary to fulfill all obligations under the act, including maintenance of reserves specified in WAC 296-15-02605 may be declared refundable by the trustees, and the amount of the declaration shall become a liability of the fund at the time of the declaration.

(2) In the event of a deficit in any fund year, the deficit shall be made up from any of the following:

(a) Unencumbered surplus from a fund year other than the current fund year, after approval by the department.

(b) By assessment of the membership of the deficit fund year if ordered by the department.

(c) By such alternative method as the department may approve.

[Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02604, filed 12/17/82.]

WAC 296-15-02605 Reserves. (1) The group shall maintain adequate reserves to cover claim liabilities and the overhead expense of paying claims liabilities. It shall also maintain a reserve to pay the department administrative assessment which would apply to outstanding claim costs if the group were to be discontinued. Additionally, the group shall maintain a contingency reserve equal to fifteen percent of the claim liabilities, or twenty-five percent of annual premium volume, whichever is greater, as a safeguard against adverse development of costs. Reserves may be discounted for anticipated investment income. Notwithstanding the reserves otherwise calculated under this section, the maximum reserve for any particular coverage period for which the group has purchased an aggregate excess reinsurance policy from a reinsurer shall be the difference between the group's retention under the policy and the amount which it has already paid for claim costs for the particular coverage

period plus expense items not recoverable from the reinsurer: *Provided,* That the reinsurer is authorized by the insurance commissioner to transact such business in the state of Washington. Any coverage period, or periods, for which the difference between aggregate excess retention and amounts already paid for claim costs is carried as a reserve shall not be subject to the additional requirement of maintaining a contingency reserve.

(2) Reserve requirements for group self-insurance may not be satisfied in whole or in part by posting of a surety bond or bonds. Minimum required reserves for claim liabilities are described below. The group may set aside higher reserves if it perceives a greater liability than calculated under the following methods:

(a) **Reserve Method I**

This method shall apply until the group has passed the runoff test described under Method II or until five years after the group has submitted its first annual report covering at least one full year of operation, whichever comes first. Under Method I, the groups' reserves other than the contingency reserves, shall be based on the accident and medical aid fund premiums which it would have paid had it been insured with the state fund. Such premiums shall be determined each year by multiplying the hours of employment in each risk classification by the base rates for each risk classification, and by the group's composite experience modification. The group's composite experience modification shall be based on combined state fund experience of its members and shall be calculated using the formulas and procedures specified in WAC 296-17-850 through 296-17-870. If the group becomes ineligible for an experience modification under WAC 296-17-850(1) by virtue of having insufficient state fund experience, it shall retain its last previous experience modification for the balance of time during which Reserve Method I is in use. Chapter 296-17 WAC shall govern the computation of hours and the assignment of risk classification.

This group shall deposit such premiums in a reserve account. Payments or withdrawals therefrom may be made only for the following conditions:

(i) Payment of administrative expenses of operating the group self-insurance program including claims handling expenses, legal costs and department administrative assessments.

(ii) Payment of claim costs other than supplemental pension fund claim payments. Supplemental pension fund benefits may be paid from the reserve account, provided that reimbursement for such payments is claimed under provisions of WAC 296-15-210, and provided that such reimbursement is deposited in the reserve account when received. Any interest earned by the reserve account must remain in the account during the period in which this method is in effect.

(iii) The group may pay its reinsurance premium from the reserve account, provided the reinsurer is authorized by the insurance commissioner to transact reinsurance in the state of Washington and provided the group retains amounts recovered from the reinsurer in the reserve account. Within eighteen months after the end of the coverage period, the group shall return the reinsurance premium, less any recoveries already received, into the reserve account. Thereafter it may include amounts which it reasonably expects to recover from the reinsurer, based on case estimates, as an asset. Such assets may be used for satisfying reserve requirements, provided the group retains amounts recovered from the reinsurer in the reserve account.

(b) **Reserve Method II**

The group shall report its claim payments and its estimated claim liabilities annually. For the purpose of applying Methods II and III, the group's estimate of its claim liabilities shall be based on its own reckoning regardless of the amount of reserves actually required by department regulations. The department will perform a runoff test of the adequacy of the group's estimate of liabilities by tracking the subsequent costs of claims (subsequent payments plus the group's updated estimates of remaining liabilities). If the subsequent costs over a three year development period following the effective date of an annual report covering at least one full year of operation do not exceed original liability estimates by more than fifteen percent, then the group's estimation of claim liabilities will be considered adequate and required reserves will thenceforth be based on the group's own estimates until such time in the future as the runoff test may demonstrate an inadequacy in reserving methodology.

(c) **Reserve Method III**

This method shall apply if the group fails the runoff test described in Method II, provided at least five years has elapsed since the group filed its first annual report covering at least one full year of operation. Under Method III the department shall determine the extent to which past liability estimates of the group have been inadequate as determined by the runoff test. The department shall apply a correction factor to the group's current estimates of its liabilities to compensate for anticipated repetition of inadequate estimates.

Methods II and III presume a consistency in reserving methodology by the group. If the department determines that the group has changed its reserving methodology in such a way as to invalidate Method II or III, then it shall make such adjustment to the procedure as may be appropriate under the circumstances. The group may devise its own method for calculating individual member's premiums under Reserve Methods I, II and III, provided the total premiums are sufficient to set up the required reserves.

[Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02605, filed 12/17/82.]

WAC 296-15-02606 Self-insured employee rights. (1) The self-insured employer shall provide a copy of the claim file within fifteen days of receipt of a written request from the worker or his/her representative.

(a) If the self-insurer determines the release of the file to an unrepresented worker, in whole or in part, may not be in the worker's interest, a denial request shall be submitted to the self-insurance section of the department pursuant to WAC 296-14-970.

(b) The self-insurer shall provide the first copy of the claim file free of charge. Unless a particular portion of a file is requested, the self-insurer shall supply a copy of the entire file. Upon receipt of a subsequent written request, any additional material added to the claim file after the initial release shall also be made available free of charge.

(c) If a second request for a copy of the claim file or a second request for material previously supplied is received from the worker and/or any representative of the worker, a reasonable fee may be charged.

(2) The self-insurer shall forward to the department, within five working days of receipt, any written protest or appeal by a worker related to his/her industrial insurance claim. The date that the protest or appeal is received by the self-insurer shall be deemed to be the date the protest is received by the department for the purpose of RCW 51.52.050.

(3) Within sixty days from the date a claim is filed, the self-insurer shall request allowance or denial of the claim.

(a) Exceptions to this requirement are allowance and closure of medical only claims which qualify for action pursuant to the provisions of RCW 51.32.055(8).

(b) Upon request of the self-insurer, an interlocutory order pursuant to WAC 296-15-160 may be issued.

(c) If the self-insurer fails to request allowance or denial within sixty days, the department shall promptly intervene and adjudicate the claim. In the department's intervention, the department is not precluded from obtaining the information necessary to properly adjudicate the self-insured claim. During this period, the claim shall remain in a provisional status.

(4) Failure of the self-insurer to comply with subsections (1) through (3) of this section shall subject the self-insurer to a penalty under RCW 51.48.080 which shall accrue for the benefit of the worker. In cases where the worker has submitted a written request for the department to determine whether a violation has occurred under this rule, the department shall issue an order conforming to RCW 51.52.050 within thirty days.

[Statutory Authority: RCW 51.04.020. 94-05-042, § 296-15-02606, filed 2/9/94, effective 3/14/94.]

WAC 296-15-030 Surety requirement. Subsections (2) through (7) and (10) through (12) of this section shall apply only to individual self-insurers and joint ventures and shall not apply to counties, cities, school districts, municipal corporations, and individual accounts participating in group self-insurance programs. Subsection (9) of this section shall apply only to counties, cities, municipal corporations, and school districts not participating in group self-insurance programs. Group self-insurance programs are subject to subsection (8) of this section and reserve requirements set forth in WAC 296-15-02601(3) and 296-15-02605. Subsections (1) and (13) of this section apply to all self-insurers.

(1) For the purposes of this section, the following definitions apply:

(a) "Default" means the financial inability to continue the payment of benefits and assessments. A default results in a payment stoppage which is not due to a claims administration decision.

(b) "Developed reserves" means an estimate of the total remaining cost of the claims of an accident year made by use of development factors.

(c) "Development factor" means an actuarially determined factor which expresses the changes in either incurred or paid liability from one year to the next.

(d) "Incurred liability" means the total cumulative amount paid plus the total amount reserved for future payments on all claims of an accident year.

(e) "Loss development" means the historical change in the incurred or paid liability of an accident year due to the additional payment of benefits or the revaluation of claim reserves as a result of changes in the claimant's condition, the reopening of claims, or the opening of claims incurred but not previously reported.

(f) "Loss development analysis" means the actuarial projection of ultimate claim liability which a self-insured employer may expect to pay for all claims reported to the department each year as of December 31 based on the historical development of liability.

(g) "Paid liability" means the total cumulative amount paid on the claims of an accident year.

(h) "Reported reserves" means the estimated dollar amount adequate to cover claim costs through closure.

(2) The surety required of self-insurers is for the sole purpose of providing for the payment of benefits and assessments in the event of a default under Title 51 RCW, as defined in subsection (1)(a) of this section. Surety is not considered to be an asset of the estate of the debtor and will not be released by the department in the event the self-insurer files or has filed a petition for dissolution or relief under bankruptcy laws. Upon approval of an application for certification to self-insure, the director shall review the matter and notify the employer of the amount of surety which must be provided pursuant to RCW 51.14.020 as now or hereafter amended. This amount as so established may be satisfied by the employer's supplying of cash, corporate or governmental securities approved by the director, or a bond, written by a company admitted to transact surety business in this state, in favor of the department. A self-insurer with a net worth of not less than five hundred million dollars may also provide surety in the form of an irrevocable standby letter of credit issued by a federally or state chartered commercial bank authorized to conduct business in this state. Cash and securities of a self-insurer shall be deposited with an escrow agent approved by the director and administered pursuant to a written agreement between the department, the self-insurer and the escrow agent. Cash and securities shall be registered in the name of the escrow agent on behalf of the self-insurer. Securities which represent cash deposited in a bank with which the self-insurer has a borrowing relationship shall not be an asset available to that bank in the event of a default on any obligation to that bank by the self-insurer. The originals of all surety documents submitted by self-insurers after acceptance by the director will be kept on file in the department.

(3) The minimum amount of surety required for initial certification as a self-insurer shall be the projected average current cost of a permanent total disability claim including medical, time-loss, pension reserve, and any other miscellaneous claim costs paid prior to award of the pension. This average cost shall be calculated by the department on an annual basis.

The surety required for initial certification as a self-insurer may be greater than the minimum amount described above. In establishing such surety requirements, the department shall estimate the following amounts:

(a) The estimated amount of accident and medical aid fund premium that the self-insurer would have paid to the state fund during the first year of self-insurance, if it had remained in the state fund.

(b) The estimated amount of incurred benefits for the first year of self-insurance, based on past experience with the state fund, adjusted for intervening changes in benefit schedules and exposure.

If either or both of the above amounts exceed the minimum surety requirement described in this section, the department will require the larger of (a) or (b) of this subsection as the surety requirement for initial certification as a self-insurer.

(c) Provided that, the initial surety requirement for a self-insurer may be based on an estimate of the expected average annual incurred losses, made by an independent qualified actuary.

(d) The surety required in accordance with the above procedures may be adjusted by the department if there are other known conditions which may alter the self-insurer's potential claim costs and/or its ability to pay them.

(4) The surety requirement for each self-insurer will be subject to review and increased or decreased at such times as the director deems necessary to maintain the adequacy of these requirements. To facilitate this review a self-insurer's annual report (SIF #7) shall be required in the form prescribed by the director and supplied to all self-insurers.

Surety requirements shall not be increased unless and until one or more of the following conditions are met:

(a) An estimate of the self-insurer's outstanding claim liabilities, made by either the self-insured employer or the department, exceeds the amount of surety in force; or

(b) The projected average current cost of a permanent total pension claim including medical, time-loss, pension reserve, and any other miscellaneous claim costs paid prior to award of the pension, exceeds the surety in force for the employer by twenty-five thousand dollars or more.

(5) In determining the surety requirement after the initial three years of certification, the department will make an analysis of the self-insurer's loss development using both incurred and paid methods. The analysis will result in factors for each period of loss development.

(a) These factors will be used to estimate the developed reserves within each method, as follows:

(i) The reported incurred liability for each accident year will be multiplied by its development factor resulting in the developed incurred liability after any appropriate subtraction of amounts for secured pensions and anticipated recoveries from excess insurance.

(ii) The reported paid liability for each accident year, without these subtractions, will be multiplied by its development factor resulting in the developed paid liability.

(iii) The developed reserve estimates made by the incurred and paid methods will be the result of subtracting the amount of benefits paid to date from the developed liability estimated by the respective methods.

(b) The surety required to secure the self-insurance reserves reported at the end of each calendar year will be determined by the percent of difference between the developed reserves estimated by the incurred method and the developed reserves estimated by the paid method. Whether the paid estimate is higher or lower than the incurred estimate, the paid estimate will be subtracted from the incurred estimate. The resulting difference will be divided by the incurred estimate to determine the percent of difference. The surety requirement will then be established as follows:

(i) In cases where the difference between the estimates is less than twenty-five percent, the surety will be established at the level of the incurred estimate.

(ii) In cases where the difference between the estimates is twenty-five percent or more but less than forty percent, the surety will be established at the average of the two estimates.

(iii) In cases where the difference between the estimates is forty percent or more, the department will make such adjustments to its procedure for estimating developed reserves as necessary. The surety will be established at the resulting estimate.

(iv) The surety required of a self-insurer will not be less than the current minimum surety requirement, with the exception that surety will not be required to increase to the minimum level unless the conditions indicated in subsection (4) of this section are met.

(c) The following special considerations shall apply in adjusting surety requirements for a self-insurer:

(i) Pension claims - Reserve amounts attributable to death or permanent total disability claims independently secured by means of a bond or assignment of account, and which are included in estimates of outstanding claim liabilities as shown on the self-insurer's annual report (SIF #7), shall be deducted from estimates of outstanding claim liabilities made in accordance with other provisions of this section.

(ii) Reinsurance - Anticipated recoveries under reinsurance policies held by a self-insurer must be documented by the self-insurer and reported to the department to qualify for consideration in establishing surety requirements. Such anticipated recoveries shall be applied to either the self-insurer's estimate of outstanding claim liabilities as shown on the most current self-insurer's annual report (SIF #7) or the department's estimate of the self-insurer's outstanding liabilities made in accordance with this rule, whichever is greater. If the resulting estimate of claim liabilities net of reinsurance recoveries is less than the surety requirement imposed by this rule without adjustment for reinsurance, the surety requirement shall be reduced accordingly; provided, that surety requirement imposed upon initial certification of a self-insurer or the minimum surety requirement may be retained by the department regardless of other estimates of claim liabilities for the self-insurer.

(iii) Strict application of loss development factors based upon the loss development analysis presumes a consistency of reserving methodology and results for the self-insurer. If the department determines that an employer has changed its reserving methodology in such a way as to invalidate loss development factors based upon past experience, then the department shall make such adjustments to the procedure as it may deem appropriate under the circumstances.

(iv) The department will give due consideration to any estimate of the self-insured employer's outstanding claim liabilities made by an independent qualified actuary. Such independent actuarial estimates are optional and not required by this rule.

(v) The department may allow a cap to the surety required of a self-insurer for each policy period in which there has been aggregate excess workers' compensation insurance. The cap will be equal to the dollar amount resulting by subtraction of the total benefits paid for the period from the policy retention amount.

(A) This cap shall be allowed only if the following criteria have been met prior to the annual determination of the surety requirement:

(I) The excess insurance company shall specify in writing that it will reimburse the department for any claims costs the department may incur if the self-insurer defaults and the department has paid the benefits.

(II) The self-insurer shall provide, in addition to its regular annual report (SIF-7), a report showing the claims costs and reserves by policy period for the time there is aggregate excess insurance.

(III) Any change in the retention amount for a policy period shall be communicated in writing to the department by the excess insurance company.

(B) The department will compare its estimate of the self-insurer's developed reserves for each policy period to the policy retention amount for that period less the benefits paid to date. The cap will be allowed if the developed reserves are greater. A reduction in a self-insurer's surety requirement will not be allowed for an anticipated recovery from specific excess insurance if a cap is allowed for aggregate excess insurance. The self-insurer shall provide surety for the amount of developed reserves exceeding any limit of the excess insurance coverage for a policy period.

(d) Any changes to the existing surety required by the department based on the loss development analysis shall be due by July 1 of each year, or an authorized extension date, and such changes shall provide adequate surety for all self-insured workers' compensation liabilities of the employer, regardless of when those liabilities were incurred.

(6) Surety must be submitted on a department-approved form. This form requires coverage of all past, present, and future liabilities. The only exceptions which would allow coverage from the effective date forward are the self-insurer's initial surety or surety which continues coverage provided by other cancelled surety. If a bond is provided in an amount equal to the self-insurer's current surety requirement, on a department-approved form covering all liabilities, all other surety will be released. The department will have sole authority to determine in which order surety is used in the event of a default.

(7) When an employer surrenders its certificate to self-insure or its certificate is withdrawn by the department, it must continue to provide for the payment of benefits on claims occurring during its period of self-insurance and to provide surety at the level determined by the department. Surety shall not be reduced from the level last required until three full calendar years after the date of surrender of certificate. The Annual Report of Self-Insured Business (SIF #7) must continue to be filed as long as quarterly reporting is required. A bond existing at the time of surrender of certificate may be cancelled, but it continues to provide surety for claims occurring prior to its cancellation. Any increase in surety required must be in the form of cash or securities deposited into an escrow account if a bond or letter of credit cannot be provided. The department will consider release of surety to the self-insurer or its successor when all of the following have occurred:

(a) All claims against the self-insurer are closed; and

(b) The self-insurer has been released from quarterly reporting of claims costs as required by WAC 296-15-060; and

(c) Ten years have passed from the date of release from reporting requirements. Claims reopened, or new filings for occupational diseases which occurred during the period of self-insurance, after release of surety shall be the obligation of the former self-insurer. Any benefits paid by the department as a result of a default by the former self-insurer after the release of surety shall be recovered by assessment against all self-insurers through the self-insurers' insolvency trust.

(8) A self-insurer's annual report (SIF #7) shall be required of group self-insurance programs on the form supplied by the department.

(9) The surety requirement for counties, cities, school districts, and municipal corporations shall provide for sufficient revenues to satisfy one hundred percent of the estimated claims for the succeeding fiscal period. The minimum security requirement shall be one hundred thousand dollars. In addition, a cumulative reserve of not less than twenty-five percent of the surety requirement must also be established. This cumulative reserve may be in the form of a bond, cash or securities in an escrow account, or any acceptable legal source of funding.

By July 1 of each year, each county, city, school district, or municipal corporation shall certify, on a form supplied by the department, its estimated claims liability and the revenues to meet those obligations. Documentation must be provided showing the estimated claims liabilities, the source(s) of revenues, and detailing accounts identified for the self-insurance obligations. Documentation of the cumulative reserve must specify the type of funding and reflect the account balance. Surety requirements for governmental units shall be subject to a periodic review by the department.

(10) An employer meeting the financial requirements specified in RCW 51.14.020(2) may provide the department with an irrevocable standby letter of credit to satisfy the surety requirement specified for its self-insurance obligations. An employer using a letter of credit must provide the department with a memorandum of understanding, on a form supplied by the department, agreeing to the following conditions:

(a) The letter of credit providing surety for the self-insurer's workers' compensation claims liability will cover all past, present, and future liability of the self-insurer regardless of any date of injury.

(b) Unless the department is notified otherwise, by registered mail at least sixty days prior to its expiration date, the letter of credit will be automatically extended without amendment for an additional one-year period.

(c) The self-insurer may substitute a bond and/or cash or securities deposited into an escrow account, in an amount designated by the department, as replacement for the letter of credit.

(d) If the department is notified that the letter of credit will not be renewed and no acceptable replacement surety is provided within thirty days of receipt of such notice, the

department will draw the full value of the letter of credit. All proceeds of the letter of credit will be deposited with the accident fund under a subsidiary ledger account. Accrued interest in excess of the self-insurer's surety requirement will be returned semiannually. If the self-insurer provides acceptable replacement surety at a later date, the proceeds will be returned.

(e) If, in addition to not providing replacement surety for a nonrenewed letter of credit, the self-insurer then defaults on payment of its workers' compensation liabilities, the proceeds of the letter of credit previously deposited with the accident fund and the accrued interest will be used to provide for payment of the self-insurer's workers' compensation liabilities.

(f) If the self-insurer's letter of credit remains in force and the self-insurer defaults on the payment of its workers' compensation liabilities, the department will draw the full value of the letter of credit. The proceeds will be deposited and accounted for as indicated in (d) of this subsection and, with the accrued interest, used to provide for payment of the self-insurer's workers' compensation liabilities.

(g) Legal proceedings initiated by any party with respect to the letter of credit shall be subject to the courts and laws of the state of Washington.

(11) Letters of credit provided by self-insurers as surety are subject to acceptance by the department. Acceptance will include, but not be limited to, approval of the financial condition of the banking institution issuing the letter of credit.

(a) A bank must provide to the department an audited financial statement or call report made to the banking regulatory agencies for the most recent fiscal year. The financial information from such banks must be provided with the first letter of credit issued and annually during the period that any letter of credit is in effect.

(b) A letter of credit will not be accepted if the amount of the credit exceeds the legal limit allowed to the bank.

(c) A letter of credit will not be accepted unless the issuing bank is able to accept presentment of drawings on the credit at an office in this state.

(12) Letters of credit and any amendments to letters of credit must be on forms supplied by the department. The department's interest in a letter of credit will be released if the self-insurer provides a bond or acceptable cash or securities deposited into an escrow account in the amount required by the department.

(13) Failure to provide active surety in the amount required by the department will result in the withdrawal of certification.

[Statutory Authority: RCW 51.04.020. 94-05-042, § 296-15-030, filed 2/9/94, effective 3/14/94; 93-11-064, § 296-15-030, filed 5/14/93, effective 6/14/93; 90-24-039, § 296-15-030, filed 11/30/90, effective 12/31/90; 88-12-096 (Order 88-07), § 296-15-030, filed 6/1/88; 87-05-008 (Order 87-02), § 296-15-030, filed 2/9/87; 86-14-079 (Order 86-25), § 296-15-030, filed 7/1/86; 85-06-031 (Order 85-6), § 296-15-030, filed 3/1/85; Order 77-19, § 296-15-030, filed 9/26/77; Order 72-4, § 296-15-030, filed 4/25/72; Order 71-15, § 296-15-030, filed 12/1/71.]

WAC 296-15-045 Payment of deficit. In determining a self-insurer's proper share of any deficit which must be paid to the department, pursuant to section 27(4), chapter 289, Laws of 1971 ex. sess., RCW 51.14.020(4), the following procedures shall apply.

(1) **State fund deficit.** The state fund deficit shall be the excess of liabilities over assets as shown on the state fund balance sheet for the last date of state fund coverage of the self-insurer. If assets exceed liabilities, the deficit shall be zero. If the last date of state fund coverage is other than March 31, June 30, September 30 or December 31, the state fund deficit shall be obtained by performing linear interpolation between the asset figures and between the liability figures on the two balance sheets spanning the date of last coverage, and then computing the excess of interpolated liabilities over interpolated assets. The state fund deficit shall be based on the combined status of the accident and medical aid funds, and that portion of the pension reserve fund which applies to state fund claims.

(2) **Premium.** The premium used for calculating deficit assessments shall be the combined accident and medical aid fund premiums due for the one year coverage period ending March 31, June 30, September 30 or December 31, whichever date most immediately precedes the effective date of self-insurance.

(3) **Deficit assessment formula.** The self-insurer's deficit assessment shall be determined by multiplying the state fund deficit, if any, by a "deficit share factor," said factor to be the ratio of the self-insurer's premium to total state fund premium for the one year coverage period specified in paragraph (2), above. Members of a group self-insurance program shall be treated as individual employers for the purpose of determining their deficit assessments.

(4) **Initial deficit assessment estimate.** Prior to the effective date of self-insurance, the department shall make its best estimate of the prospective self-insurer's deficit assessment, and the prospective self-insurer shall be required to pay the estimated amount prior to being issued a certificate of self-insurance.

(5) **Subsequent adjustment of deficit assessments.** As soon as the actual data specified under the deficit assessment formula becomes available the deficit assessment shall be recalculated based on the actual data, and the self-insurer shall either receive a refund or be required to pay an additional amount, depending on the results of the calculation. The department shall make no further adjustment of the deficit assessment, except when an employer's premium is changed as the result of an audit or through discovery of a clerical error in calculation of the firm's premium. In such cases, the self-insurer's "deficit share factor" shall be recalculated based on the revised premium. Deficit share factors shall not be recalculated because of premium adjustments made under the retrospective rating plan. Payment of a deficit assessment based upon the recalculation using actual data as specified in this rule shall be a requirement for retaining a certificate of self-insurance.

(6) **Effective date.** This rule shall become effective on July 1, 1983 and shall apply to all firms self-insuring on or after that date.

[Statutory Authority: RCW 51.14.020(1). 83-07-075 (Order 83-9), § 296-15-045, filed 3/23/83.]

WAC 296-15-050 Reinsurance. (1) A self-insurer who desires to reinsure a portion of his liability, pursuant to

RCW 51.14.020(5) as now or hereafter amended, shall notify the department of the name of the insurance carrier which will carry such reinsurance policy, and full details as to the extent and period of coverage of such policy. The director may periodically require information from all self-insurers as to their reinsurance program, if any, in order to determine that there is continued compliance with RCW 51.14.020(5).

(2) All copies of any insurance policy in force shall be submitted to the department, together with any modification or renewal provisions thereto which the employer has acquired for the purposes authorized in RCW 51.14.020(5) of reinsuring a portion of the employer's liability: *Provided,* That the supervisor upon request and for good cause may accept a certificate of insurance in lieu of the self-insured employer's policy of reinsurance which certifies to the monetary limits, all conditions and exceptions pertaining to payments under the self-insured employer's policy of reinsurance and in addition contains a certification that the company providing reinsurance and its personnel do not participate in the administration of the responsibilities of the self-insurer under Title 51 RCW and that such policy of reinsurance does not provide for payments in excess of eighty percent of the self-insured employer's liabilities under the provisions of Title 51 RCW.

(3) Each such policy of insurance issued or renewed on or after July 1, 1975 shall contain a provision which in substance states: That such policy is not intended to provide for the payment of any of the costs, benefits or compensation which the self-insured employer may be obligated to pay pursuant to the provisions of Title 51 RCW, in excess of eighty percent of any such liabilities as required by RCW 51.14.020(5).

[Statutory Authority: RCW 51.04.020. 85-06-031 (Order 85-6), § 296-15-050, filed 3/1/85; Order 77-19, § 296-15-050, filed 9/26/77; Order 71-15, § 296-15-050, filed 12/1/71.]

WAC 296-15-060 Administrative cost assessment. (1) Assessments levied by the department against each self-insurer shall be based on the self-insured employer's proportionate share of the administrative costs determined to be attributable to self-insurers, including expenses of other divisions of the department, the University of Washington environmental research facility, the board of industrial insurance appeals, appeals expenses and other general administrative expenses.

(2) The administrative assessment rate shall be determined on a fiscal year basis as prescribed in subsection (1) of this section. Employers certified to self-insure after the fiscal period for which costs were used to determine the assessment rate shall be assessed at a rate which does not include adjustments made for prior periods. The administrative assessment shall be based on the payments made on all claims involving the self-insured employer: *Provided,* That in any event a self-insured employer shall be subject to the payment of a minimum quarterly assessment of twenty-five dollars.

(3) Administrative cost assessments shall be payable for each quarter, by the thirtieth day following the receipt of a quarterly report form supplied by the department (SIF #6). This quarterly report form shall also provide for payment of the supplemental pension fund assessment.

(4) A self-insured employer who has, or shall hereafter, voluntarily, or involuntarily, surrender his certification as a self-insurer shall pay an adjusted administrative assessment. The amount of this adjusted administrative assessment will be determined annually and shall represent such self-insurer's portion of the administrative assessment which can be attributed directly to the operational costs of the self-insurance section. This adjusted administrative assessment shall continue until such time as all liabilities and all responsibilities of such employer have been terminated. The amount of this adjusted administrative assessment shall in no case be less than $25.00 per calendar quarter.

When such an employer has had no self-insured claim activity, excluding activity in cases of total permanent disability or death, for a period of one year, a request may be made to the department for a review to determine if there is a need to continue the adjusted administrative assessment, in which circumstances, the minimum assessment will not apply.

[Statutory Authority: RCW 51.04.020. 94-17-069, § 296-15-060, filed 8/15/94, effective 9/15/94; 93-11-064, § 296-15-060, filed 5/14/93, effective 6/14/93; 86-14-079 (Order 86-25), § 296-15-060, filed 7/1/86; Order 77-19, § 296-15-060, filed 9/26/77; Order 75-28, § 296-15-060, filed 8/29/75, effective 1/1/76; Order 74-38, § 296-15-060, filed 11/18/74, effective 1/1/75; Order 73-24, § 296-15-060, filed 11/23/73; Order 71-15, § 296-15-060, filed 12/1/71.]

WAC 296-15-065 Self-insurers' insolvency trust. (1) For the purpose of interpretation of this section, the term "insolvent self-insurer" means a self-insurer who has defaulted upon any obligation under Title 51 RCW, and with respect to which default the director has taken action authorized by RCW 51.14.060.

(2) A self-insurance insolvency fund shall be established in the office of the state treasurer. The purpose of this fund shall be to pay, to the injured workers of insolvent self-insured employers under Title 51 RCW, any unsecured benefits to which such injured workers had become entitled, and to pay for the department's associated administrative costs, including attorneys' fees.

(3) This fund shall be financed by assessment, as follows: (a) Assessments shall be levied on a post-insolvency basis against all self-insurers, including any of which have surrendered certification at any time during the thirty-six months prior to the close of a quarter for which assessments to the insolvency fund are payable: *Provided, however,* That school districts, cities and counties are exempt from assessment(s) to finance such self-insurers' insolvency fund: *Provided, further,* That school districts, cities and counties shall not have their obligations discharged, in full or in part, with moneys from said self-insurers' insolvency fund; (b) each assessment shall be a percentage of the payments made on all claims involving the self-insured employer; (c) assessments shall be levied on a quarterly basis as prescribed by the department; (d) assessments shall be payable each quarter, by the thirtieth day following the notice of assessment.

(4) The administration of an insolvent self-insurer's claims shall be the responsibility of the department until the security deposit as required by RCW 51.14.020 and/or the recovery from any court action concerning the self-insurer's workers' compensation liabilities have been exhausted.

(5) Establishing self-insurance insolvency fund assessment rates and administering the claims of insolvent self-insurers upon depletion of remedies for reimbursement of workers' compensation expenditures made by the department as specified under subsection (4) of this section shall be the responsibility of the director, or the director's designee, after due consideration of the recommendations of a five-member insolvency trust advisory board established in this section.

(6) Assessments for the self-insurers' insolvency fund shall be in amounts deemed adequate to reimburse the accident, medical aid and/or pension reserve funds for benefits paid from these funds to injured workers of insolvent self-insurers, and for associated administrative costs, including attorneys' fees. Any and all interest earned on assessments levied and collected by the department shall become a part of the self-insurers' insolvency fund, and be distributed only for the purposes for which the fund was established.

(7) The insolvency trust advisory board shall be comprised of the director or the director's designee, three representatives of self-insured employers, and one representative of workers. Initially and thereafter, the director shall appoint the self-insurer representatives from a list of names submitted by state-wide organizations of self-insurers and others. Initially and thereafter, the director shall appoint the worker representative from a list of names submitted by an organization, state-wide in scope, which through its affiliates embraces a cross section and a majority of the organized labor of the state. Initial appointments shall be made within thirty days of the effective date of this section. Two of the initial appointees shall serve three-year terms, and two shall serve two-year terms. Thereafter, appointed representatives shall serve two-year terms. Each representative on the insolvency trust advisory board shall have one vote. The board shall act in an advisory capacity; all final decisions regarding the insolvency trust shall be made by the director or the director's designee.

(8) No later than March 31 of each year, the board shall report in writing to the workers' compensation advisory committee regarding the status of the insolvency fund as of the previous December 31, and summarize any events or transactions of interest or importance to the ongoing operation of the insolvency fund.

[Statutory Authority: RCW 51.04.020. 93-11-064, § 296-15-065, filed 5/14/93, effective 6/14/93; 88-12-096 (Order 88-07), § 296-15-065, filed 6/1/88; 86-24-014 (Order 86-40), § 296-15-065, filed 11/24/86.]

WAC 296-15-070 Accident reports and claims procedures. (1) Reporting of accidents shall be on a form prescribed by the department, entitled the self-insurer accident report (SIF-2), which will be supplied to all self-insurers, and by self-insurers to their employees. Forwarding a completed copy of this form to the department for compensable claims immediately and medical only claims monthly after closing by the self-insured employer shall satisfy the initial accident reporting responsibility and statistical reporting responsibility under the law.

(2) A self-insurer, on denying any claim, shall provide to the claimant, the department, and the attending physician, a notice of denial of claim, substantially similar to the example SIF-4 in WAC 296-15-21002. With every such claim denial a self-insurer shall send to the department all information on which the denial was based.

(3) A self-insurer shall file a complete and accurate supplemental or final report on injury or occupational disease claims resulting in time loss payments, on a form substantially similar to labor and industries Form No. F207-005-000, self-insurer's report of occupational injury or disease (SIF-5) at the following times:

(a) Within five working days following the date the first time loss compensation is paid.

(b) Within five working days following the date the time loss compensation is terminated, reinstated, or the rate thereof changed. If time loss compensation is terminated due to the self-insurer's finding that the injured worker is not eligible for vocational rehabilitation services, the self-insurer must attach the employability notification to the supplemental SIF-5.

(c) On the date a determination is requested or date temporary disability claim is closed.

(d) On all claims where vocational rehabilitation services have been provided, a rehabilitation outcome report must be submitted with the final SIF-5.

All medical reports and other pertinent information in the self-insurer's possession not previously forwarded to the department must be submitted with the request for all determinations.

(4)(a) A self-insured employer shall, upon notice of an industrial injury, provide the injured worker with the opportunity to file a self-insurer accident report (SIF-2) and shall notify the worker of his/her rights and responsibilities under Title 51 RCW. A completed copy of the self-insurer accident report (SIF-2), with an assigned department claim number, is to be provided to the worker within five working days of the date an injured worker submits the SIF-2 to the employer.

(b) A self-insurer, upon closure of a medical only claim, shall issue an order on a form prescribed by the department entitled self-insurer's claim closure order and notice (F207-020-111), which will be supplied to all self-insurers, and by the self-insurers to their employees, in compliance with reporting responsibilities under the law, a copy of which shall be sent to the attending physician.

The self-insurer shall submit monthly statistical information on medical only claims closed during the month by copy of the accident report (SIF-2). In medical only claims where vocational rehabilitation services have been provided, the self-insurer shall submit a rehabilitation outcome report with the self-insurer accident report (SIF-2) at the time of reporting claim closure.

(c) A self-insurer, upon closure of a temporary disability claim, shall issue an order on a format substantially similar to labor and industries Form No. F207-070-000, self-insured employers' time loss claim closure order and notice. The self-insurer shall send a copy of the closing order and final SIF-5 to the claimant and the department at the time of closure of a temporary disability claim.

(d) When the department requests claim information by certified mail, the self-insurer shall submit all information in its possession dealing with the claim in question, within ten working days from the date of receipt of such certified mail.

(e) In any case where the department or the self-insured employer has issued an appealable order on a medical only

claim, all subsequent orders in that claim shall be issued by the department.

(f) When an application for reopening of claim for aggravation of condition is received by a self-insured employer or its authorized representative, it shall be the responsibility of the self-insured employer to forward it to the department within five working days from the date of receipt.

[Statutory Authority: RCW 51.04.020. 94-17-069, § 296-15-070, filed 8/15/94, effective 9/15/94; 90-14-009, § 296-15-070, filed 6/25/90, effective 8/1/90; 88-12-096 (Order 88-07), § 296-15-070, filed 6/1/88; 86-18-037 (Order 86-35), § 296-15-070, filed 8/28/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-070, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.04.020 and Title 51 RCW. 82-12-035 (Order 82-23), § 296-15-070, filed 5/27/82, effective 7/1/82; 81-24-040 (Order 81-29), § 296-15-070, filed 11/30/81; Order 77-19, § 296-15-070, filed 9/26/77; Order 72-15, § 296-15-070, filed 8/4/72; Order 71-15, § 296-15-070, filed 12/1/71.]

WAC 296-15-072 Employer claim closures. (1) A self-insurer may close certain compensable claims if the following criteria are met:

(a) The claim was accepted after June 30, 1986;

(b) At the time medical treatment is concluded, it does not involve permanent disability;

(c) The department has not intervened; and

(d) The worker has returned to work with the employer of record either at the worker's previous job or at a job that has comparable wages and benefits.

(2) Upon closure, the self-insurer must submit to the department a copy of the closing order and an SIF-5 pursuant to the provisions of WAC 296-15-070.

(3) If within two years of closure, the department determines that the self-insurer has made an error in the payment of benefits or discovers a violation of the conditions of claim closure, the department may require the self-insurer to correct the benefits paid or payable. The application of RCW 51.32.240 is not limited by this provision.

(4) For the purpose of determining whether a worker has returned to a job that has "comparable wages and benefits" under this rule, the new wages and benefits cannot exceed a five percent loss in comparison to those received in the previous job held by the worker at the time of the industrial injury.

(5) This rule does not affect self-insured employers' ability to close noncompensable claims.

[Statutory Authority: RCW 51.04.020. 94-17-069, § 296-15-072, filed 8/15/94, effective 9/15/94; 86-18-037 (Order 86-35), § 296-15-072, filed 8/28/86.]

WAC 296-15-080 Statement of financial condition. Every self-insured employer shall, not later than six months following the end of its financial reporting period, submit a fully audited financial statement to the department. This statement shall be for the year just ended, and must be prepared by accountants independent of the employer. It may be the financial statement of the self-insurer's parent, but must include the financial condition of all subsidiary operations. A self-insurer whose financial statement is not available from an accounting firm within this time must make a written request to the department for an extension of the filing time. Any self-insured employer who is a political subdivision of the state, a municipal corporation, or other public entity who is subject to audit by the state auditor may submit a state auditor's report containing the employer's audited financial statement. Public entities which are audited less than once a year by the state auditor must submit a financial statement prepared internally for the years between reports of the state auditor.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-080, filed 7/1/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-080, filed 12/1/83, effective 1/1/84; Order 77-19, § 296-15-080, filed 9/26/77; Order 74-38, § 296-15-080, filed 11/18/74, effective 1/1/75; Order 74-29, § 296-15-080, filed 5/29/74, effective 7/1/74.]

WAC 296-15-090 Application of supplemental moneys in payment of compensation. Each employer authorized to self-insure the liabilities imposed by the industrial insurance law (Title 51 RCW) shall provide the department with a statement of their current policy of applying sick leave, health and welfare insurance benefits or any other compensation in conjunction with or as a substitute for the time loss compensation required in RCW 51.32.090.

(a) Where a self-insurer maintains a person on full salary during a period of temporary total disability due to an injury or illness compensable under Title 51 RCW, a report shall be filed with the department in accordance with WAC 296-15-070.

This report shall indicate the amount of compensation the injured worker is entitled to when computed in accordance with RCW 51.32.060. The amount, so computed and reported, shall be included in the self-insurers total claim costs and therefore be included on the quarterly report of self-insured employer (SIF #6) for the purpose of computing their administrative assessment.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-090, filed 7/1/86; Order 77-19, § 296-15-090, filed 9/26/77; Order 74-38, § 296-15-090, filed 11/18/74, effective 1/1/75.]

WAC 296-15-100 Permanent partial disability awards. Whenever a self-insured employer receives an order and notice establishing a permanent partial disability (PPD) award, on behalf of a worker injured in its employment, the self-insurer shall make payment of the award without delay and in accordance with RCW 51.32.080(4). In all cases, the self-insured employer will notify the department of the date the award is paid.

When the amount of the award exceeds three times the average monthly wage in the state, as established at the date of the workers injury, a schedule of payments shall be prepared. Such schedule shall include all the following information:

The total amount of the disability award.

The amount of the initial payment and the date such payment was made.

The amount of the remaining balance.

The amount of interest earned on the unpaid balance.

The date each subsequent payment will be made.

The amount of each subsequent payment until all moneys have been dispersed.

A copy of this schedule shall accompany the initial payment to the claimant and a copy shall be forwarded to the department in substantially the same form as set forth below.

SCHEDULE OF FUTURE PAYMENTS
FOR THE
BALANCE OF THE PERMANENT PARTIAL DISABILITY AWARD

EMPLOYER: . . . . . FIRM NO. . .

NAME OF CLAIMANT: . . . . . .

ADDRESS: . . . . . .

CLAIM #: . . . . . .

AMOUNT OF AWARD: . . . . . .

INITIAL PAYMENT: . . . . . .

UNPAID BALANCE: . . . . . .

DATE OF PAYMENT	UNPAID BALANCE	INTEREST	TIME LOSS SCHEDULE	AMT. OF PAYMENT
. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
*	*	*	*	*

DATE PAID . . . . . .

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-100, filed 7/1/86; Order 77-19, § 296-15-100, filed 9/26/77; Order 74-38, § 296-15-100, filed 11/18/74, effective 1/1/75.]

WAC 296-15-110 Contract with a service organization. Every self-insuring employer utilizing a service organization independent of the self-insurers firm, to aid or participate in any manner in the administration of their responsibilities; including but not limited to: Claims-handling, payment of compensation, accumulation of data and completion of required reports, (both quarterly and annual) or any other such administrative function; shall forward to the department, a copy of the contract which exists between the two, or more, parties for such services: *Provided,* That any clause or clauses in such contract relating to the monetary consideration between the parties may be deleted: *Provided further,* That any provision in such contract relating to the monetary consideration which may increase or decrease such consideration on the basis of an increase or decrease of an employer's claims must be explained in detail and the department may require the employer to supply an unaltered copy of the agreement where it appears reasonably necessary for the purpose of clarification.

Any time a self-insurer elects to change service organizations, or change or modify the existing contract, a copy shall be forwarded to the department within ten working days of the effective date of the new contract or change.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-110, filed 7/1/86; Order 74-38, § 296-15-110, filed 11/18/74, effective 1/1/75.]

WAC 296-15-120 Log of occupational injuries and illnesses. Each self-insured employer shall, upon request, provide the department any or all information contained on the log of occupational injuries and illnesses (WISHERS #100) maintained in accordance with chapter 296-27 WAC.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-120, filed 7/1/86; Order 74-38, § 296-15-120, filed 11/18/74, effective 1/1/75.]

WAC 296-15-130 Administration of self-insurance. Every self-insurer shall conduct the administration of its self-insurance plan through the services of a person knowledgeable in the application of the industrial insurance law and the rules and regulations for self-insurance.

The person or persons employed or retained as administrators, by either a self-insurer or an employer making application for certification as a self-insurer, must be able to:

(1) Demonstrate, in a manner satisfactory to the department, a thorough knowledge of the industrial insurance laws and the rules and regulations for self-insurance, and

(2) Demonstrate, in a manner satisfactory to the department, an expertise in the adjudication of claims, and

(3) Have the authority and ability to make prompt payment of all compensation and assessments which may become due from such self-insurer; and

(4) Have the authority to make prompt decisions regarding claims adjudication and awards required by Title 51 RCW.

[Order 74-38, § 296-15-130, filed 11/18/74, effective 1/1/75.]

WAC 296-15-135 Contact person. Each self-insurer shall provide the department with the name, title, address, and phone number of a contact person who will be the liaison with the department regarding self-insurance matters, and to whom all self-insurance correspondence will be sent. The self-insurer is to give written notice of any change in contact person within ten working days of the change.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-135, filed 7/1/86.]

WAC 296-15-140 Expense of out-of-state audit. The audit of self-insurance plans at locations outside the state of Washington, shall be at the expense of the self-insurer and the expense incurred in making such audit shall be paid by the self-insurer.

Such expenses shall be calculated at the usual and normal per diem and travel expense rates established by law and in effect at the time the expenses are incurred.

[Order 74-38, § 296-15-140, filed 11/18/74, effective 1/1/75.]

WAC 296-15-145 Expense of withdrawn certificate audit. A self-insurer whose certificate has been withdrawn, whether surrendered voluntarily with the director's approval or involuntarily by order of the director, shall pay expenses incurred by the director, or his representative, in conducting an audit as may be required for the purposes of RCW 51.14.050 through 51.14.090.

[Order 74-38, § 296-15-145, filed 11/18/74, effective 1/1/75.]

WAC 296-15-150 Accident prevention program. Applicants for self-insurance certification are required by RCW 51.14.030(4) to demonstrate to the department the existence of a safety organization which indicates a record of accident prevention within their places of business. Chapter 296-24 WAC sets forth the requirements for an employer's accident prevention program. Accident prevention programs must comply with these rules in order for certification to be granted. Applicants whose programs do not meet these requirements will be denied certification.

Employers who are denied certification due to deficient accident prevention programs may be required to wait six months before being considered for certification again. The self-insurer's maintenance of an accident prevention program is also a requirement for continued certification. (RCW 51.14.080(1).)

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-150, filed 7/1/86; Order 74-38, § 296-15-150, filed 11/18/74, effective 1/1/75.]

WAC 296-15-160 Order on self-insured claims. (1)(a) Upon receipt of an SIF-5 reporting the first payment of time loss compensation, the department will issue an allowance, segregation or interlocutory order unless a request for denial has been received on an SIF-4.

(b) In cases of medical or treatment only claims where claim allowance is at issue, a request for denial (SIF-4) or a request for an interlocutory order (SIF-5) must be submitted within sixty days from the date the claim is filed.

(2) Interlocutory orders may be issued upon the application for such by a self-insurer. Such orders will be issued at the discretion of the department. The request from the self-insurer must be accompanied by substantiating documentation and a reasonable explanation as to why an investigation is in order.

(3) Interlocutory orders shall be effective from the date the self-insurer has knowledge or notice of the industrial injury or occupational disease. During this period, the claim shall remain in provisional status.

(4) All orders shall be issued in accordance with RCW 51.52.050.

[Statutory Authority: RCW 51.04.020. 94-17-069, § 296-15-160, filed 8/15/94, effective 9/15/94; 86-14-079 (Order 86-25), § 296-15-160, filed 7/1/86; Order 77-19, § 296-15-160, filed 9/26/77; Order 75-28, § 296-15-160, filed 8/29/75, effective 1/1/76.]

WAC 296-15-170 Cessation of business—Change of status. (1) A self-insurer that proposes to cease doing business entirely, or proposes to cease doing business in Washington, or proposes to dispose of, by sale or otherwise, the controlling interest of the business for which the certificate was issued shall immediately notify the department in writing of such proposed action and shall, upon request, surrender its certificate for cancellation.

(2) A self-insurer that amends its articles, charter or agreement of incorporation, association, copartnership or sole proprietorship so as to change its identity or business structure or in any manner so as to materially alter its status as a self-insured employer as it existed at the time of the issuance of its certificate shall, within thirty days, notify the department, in writing, of such action and provide the department with information regarding any change in the status of such self-insured employer. The department may, at its discretion, ask for copies of any documents deemed necessary regarding such transactions.

(3) When a self-insurer sells, divests, or spins off a part of itself, self-insurance coverage for the separated part ends with the date of separation from the self-insurer. The selling self-insurer remains responsible for the liability for claims against the separated part occurring up to the date of the separation unless the department approves an alternative. If the separating part desires to be a self-insurer, an application for certification must be received by the department thirty days before the date of certification. If certification cannot be granted before the date of separation, industrial insurance coverage must be purchased effective with the date of separation.

(4) An employer which voluntarily surrenders its certificate to self-insure or which has had its certificate withdrawn by the department must continue to provide for the payment of benefits on all claims occurring during its period of self-insurance.

[Statutory Authority: RCW 51.04.020. 94-05-042, § 296-15-170, filed 2/9/94, effective 3/14/94; 88-12-096 (Order 88-07), § 296-15-170, filed 6/1/88; Order 75-28, § 296-15-170, filed 8/29/75, effective 1/1/76.]

WAC 296-15-180 Examinations for rating disability. In any case where a self-insured employer obtains information from a physician, other than the attending physician, for the purpose of rating or classifying disability, following the receipt of medical evidence that the worker's injury has become medically stabilized, such employer shall request from the attending physician whether or not he concurs in the examining physician's conclusions. If the attending physician is not in agreement with such conclusions or refuses to give an opinion on such conclusions, the self-insured employer may arrange another medical evaluation or forward all medical information to the department. The department may require additional medical examinations.

All costs for such medical examinations and all reasonable expenses incurred by the injured worker shall be paid by the self-insurer to the extent required by RCW 51.32.110.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-180, filed 7/1/86; Order 75-28, § 296-15-180, filed 8/29/75, effective 1/1/76.]

WAC 296-15-190 Notification of rights and obligations. (1) Self-insurers shall develop and maintain a comprehensive program designed to inform their employees about self-insurance and their rights and obligations. Such a program must include all present employees. Newly hired employees must be thoroughly advised of their industrial insurance rights and obligations during the first thirty calendar days of employment. The method and manner of advising employees of this program must have the approval of the department.

(2) This program shall include, but not be limited to the following:

(a) An explanation of the employees' industrial insurance rights and obligations.

(b) An explanation of the employer's claim processing system.

(c) A statement telling which employees are covered and under what circumstances coverage is provided.

(d) A complete explanation of the payment of all medical bills and the time loss compensation an injured worker can expect to receive if forced to lose time from work due to an injury, or occupational disease sustained at work and an explanation of the method used to periodically determine continued time loss certification.

(e) The extent of the coverage provided and the procedure for closing a claim.

(f) An explanation of the law and rules of the department relating to the payment of medical expenses incurred by an on-the-job injury or occupational disease and the procedure for making an application for reopening a closed claim.

(g) An explanation of the role of the department in claims processing. Such explanation shall include a description of the method and manner of requesting reconsideration of department orders and appealing orders of the department to the Board of Industrial Insurance Appeals. Further, the mailing address and phone number of the self-insurance offices shall be made known and available to all employees.

(h) An explanation of the supplemental pension fund assessment and the deduction made for that purpose.

(i) An explanation of the way an injured worker, or someone in his/her behalf, must file a claim. Such an explanation must include the statutory requirement that a claim be filed within one year of the date of the injury or within two years following the date the worker received written notice from a physician of the existence of an occupational disease and that the injured worker is responsible for filing the claim with his/her employer along with the certification of a licensed physician as stated in RCW 51.28.020.

(j) An explanation of both scheduled and unscheduled permanent partial disability (PPD) awards.

(3) A self-insurer shall designate a person or persons reasonably accessible to the work locations to whom an injured worker or any employee may direct questions about industrial insurance matters. This individual should have sufficient knowledge to answer routine questions and have the responsibility of seeking answers to more complex problems.

[Statutory Authority: RCW 51.04.020. 88-12-096 (Order 88-07), § 296-15-190, filed 6/1/88; Order 75-28, § 296-15-190, filed 8/29/75, effective 1/1/76.]

WAC 296-15-200 Claims log—Evaluation. Beginning January 1, 1976, each self-insurer shall maintain a log of all claims filed by any worker injured in its employ or any worker having contracted an occupational disease as a result of his/her employment with the self-insurer.

The claims log shall contain the following minimum information: The injured worker's name, the date of the injury or first knowledge of an occupational disease, the claim number assigned by the department, the date the claim is closed, and whether the claim is compensable or treatment only. Additional information may be recorded at the discretion of the employer.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-200, filed 7/1/86; 83-07-009 (Order 83-8), § 296-15-200, filed 3/8/83; Order 77-19, § 296-15-200, filed 9/26/77; Order 75-28, § 296-15-200, filed 8/29/75, effective 1/1/76.]

WAC 296-15-210 Supplementation of temporary total disability compensation by self-insured employers. Self-insured employers shall make benefit payments to workers injured in their employ in accordance with RCW 51.32.090 and such increased payments as required by RCW 51.32.073.

When a self-insured employer is required to increase the amount of temporary total disability benefits being paid an injured worker and where legislation provides for such increased benefits to be paid from the supplemental pension fund, the department will reimburse the employers in the amount of the increase.

Self-insured employers will be reimbursed from the supplemental pension fund upon their certification that payment was made of such increased benefits to qualified injured workers. Applications for reimbursement from the supplemental pension fund shall be filed quarterly on forms provided by the department.

[Order 77-19, § 296-15-210, filed 9/26/77; Order 75-36, § 296-15-210, filed 10/28/75.]

WAC 296-15-21002 Form—SIF #4—Self-insured employer's notice of denial of claim.

SELF-INSURED EMPLOYER'S NOTICE OF DENIAL OF CLAIM

Claim No. . . . . .

Date of Notice . . . . . .

Dear

This will notify you that your claim for benefits filed in reference to your injury or occupational disease of . . . . . has been received and investigated. The company hereby denies your claim for the following reason(s):

1. . . . . .
. . . . . .
2. . . . . .
. . . . . .
3. . . . . .
. . . . . .

The Department of Labor and Industries will review this matter and send you an official order on the claim. Either it will reject the claim or issue an allowance order. If you are aggrieved by that order, you may request reconsideration by the Department of Labor and Industries, or you may appeal to the Board of Industrial Insurance Appeals.

THIS LETTER DOES NOT CONSTITUTE OFFICIAL NOTIFICATION OF REJECTION OF YOUR BENEFITS

. . . . . .
(Firm Name)

By . . . . . .

cc: Director, Department of Labor and Industries
Attending physician

SIF #4

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), §296-15-21002, filed 7/1/86; Order 71-15, Form SIF #4 (codified as WAC 296-15-21002), filed 12/1/71.]

WAC 296-15-215 Cash, bond or assignment of account alternative for death or permanent total disability. An "assignment of account" as used in this rule means a legal instrument executed by a self-insurer and a federally or state charted [chartered] commercial banking institution authorized to conduct business in the state of Washington, for the benefit of the department of labor and industries, which accomplishes the following:

(1) Identifies an existing account on deposit with the banking institution in the name of the self-insurer, which

account contains an amount no less than the amount deemed by the department to be sufficient to insure the payment of pension benefits required by law for the claim on which the assignment of account is made, above and beyond any and all other existing assignments on that account.

(2) Binds the self-insurer to maintain a balance in that account at least equal to the current present cash value of the pension benefits provided by law on the claim for which the assignment of account is made, above and beyond all other assignments on that account, for the life of the claim. Present cash values shall be revised annually by the department in conjunction with the insurance commissioner's report as prescribed in RCW 51.44.140. Quarterly payments of pension, if made from the assigned account, shall not reduce the account balance below the present cash value last established by the department on the claim.

(3) Authorizes the department of labor and industries, upon default of the self-insurer, in any payment of any obligation on the claim for which the assignment of account has been made, to immediately without notice withdraw from the account without obligation of reimbursement of any amount, up to and including the entire amount specified in the assignment of account document, necessary to implement the cash alternative prescribed in RCW 51.44.070(1).

Upon establishment of a death or permanent total disability obligation, the self-insured employer may elect to pursue the bond or assignment of account alternative outlined in RCW 51.44.070(2). In all such cases, cash, bond or assignment of account, the department shall commence to pay benefits immediately upon issuance of an order establishing such obligation. In the event there is a retroactive payment of benefits in the establishment of such obligation, and the self-insured employer elects to pursue RCW 51.44.070(2), this payment shall be made at the time the employer submits the required cash deposit. All further obligations paid by the department from the pension reserve fund shall be reimbursed to the department by the self-insured through the quarterly report system in accordance with RCW 51.44.070(2). Upon election of RCW 51.44.070(2) the self-insured employer shall submit a bond or assignment of account in the amount deemed by the insurance commissioner to be reasonably sufficient to insure payment of the pension benefits provided by law. Such bond or assignment of account and required cash deposit shall be filed with the self-insurance section no later than sixty days after the funding order establishing the amount of the death or permanent total disability obligation was communicated to the parties. The bond or assignment of account alternative as prescribed by RCW 51.44.070(2) shall be allowed only once on any given claim elected at the time of the establishment of such obligation. In the event the amount of the bond is subsequently deemed insufficient and the self-insurer is unable to secure the required bond obligation the employer shall deposit cash into the reserve fund, pursuant to RCW 51.44.070(1), to replace the bond obligation. In the event the amount of the assignment of account is subsequently deemed insufficient and the self-insurer is unable to provide the required assignment of account, the employer shall deposit cash into the reserve fund, pursuant to RCW 51.44.070(1), to replace the assignment of account. Funds available within the existing assignment of account shall, in this instance, be withdrawn by the department, deposited in the reserve fund, and credited toward the employer's obligation for the claim pursuant to RCW 51.44.070(1).

A separate assignment of account shall be established for each pension and, in case of failure of a banking institution carrying an assignment of account, the employer is responsible for the total amount of the obligation. Upon such failure of a banking institution, the self-insured employer shall, within thirty days, 1) establish a new assignment of account pursuant to this rule, or 2) deposit cash into the reserve fund to replace the obligation. If an employer terminates its self-insured status, the assignment of account will be placed with the department. The required reserve will be determined by the insurance commissioner and any excess will be returned to the employer.

[Statutory Authority: RCW 51.04.020. 88-12-096 (Order 88-07), § 296-15-215, filed 6/1/88; 85-06-031 (Order 85-6), § 296-15-215, filed 3/1/85. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-215, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.04.020 and Title 51 RCW. 81-23-047 (Order 81-27), § 296-15-215, filed 11/18/81.]

WAC 296-15-220 Second injury fund. This rule is promulgated pursuant to RCW 51.16.120 and 51.44.040 and is intended to administrate the second injury fund requirements in RCW 51.16.120 and 51.44.040:

(1) There will be a separate accounting of state fund and self-insurance transactions within the second injury fund. Self- insurance second injury claim costs and contributions will be recorded in the self-insurers' account. State fund second injury claim costs and contributions will be recorded in the state fund account.

(2) Self-insurer contributions into the second injury fund will be made quarterly in amounts deemed sufficient to meet anticipated self-insurers' second injury claim costs. The self-insurer assessment base shall be total claim payments, as defined for administrative assessments. During the period of time before the first self-insurer second injury claim is approved, self-insurer contributions will be discontinued if the balance in the self-insurer account exceeds $200,000.

(3) State fund payments into the second injury fund will be made from the accident fund and will be the difference between the total cost of all second injury fund claims and the contributions received from self-insurers.

[Order 77-19, § 296-15-220, filed 9/26/77.]

WAC 296-15-230 Third party actions. When the injury to a worker is due to the negligence or wrong of a third person not in the same employ, the injured worker or beneficiary or the self-insured employer may elect to seek damages from the third party as provided by RCW 51.24.020.

(1) When such a third party action is undertaken, the self-insured employer shall report to the department of labor and industries:

(a) The name and claim number of the injured worker;

(b) A written indication of election taken by the injured worker or beneficiary.

(2) When third party action is completed, the self-insured employer shall provide the department the following:

(a) The date the judgment was rendered in the case, and a copy of the court order establishing the total amount of the

final judgment and the amount of attorney fees and costs involved, or:

(b) The date of any agreement of parties to settle the action, and a copy of any agreement of parties to settle the case, including the total amount of the agreed settlement.

(c) A statement of the total amount of attorney fees and costs involved, and;

(d) A statement of the employer's total costs, including temporary total disability, permanent partial disability and medical costs.

[Statutory Authority: RCW 51.04.020. 85-06-031 (Order 85-6), § 296-15-230, filed 3/1/85. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-230, filed 12/1/83, effective 1/1/84; Order 77-19, § 296-15-230, filed 9/26/77.]

WAC 296-15-240 Procedure in cases appealed to the superior court. In all cases when any party has appealed to the superior court from a decision of the board of industrial insurance appeals in a case involving a self-insurer, or from the superior court to any appellate court, such a self-insurer shall promptly forward to the department copies of the notice of appeal, judgment, and such other information relevant to any such appeal to a superior or appellate court as the department may require.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-240, filed 7/1/86; Order 77-19, § 296-15-240, filed 9/26/77.]

WAC 296-15-250 Representation in self-insured appeals. Pursuant to the authority granted by RCW 51.52.100, the department may, through the office of the attorney general, appear in proceedings before the board of industrial insurance appeals to defend any of the department orders appealed to the board of industrial insurance appeals by a self-insured employer or a claimant or beneficiaries when such action is deemed necessary to protect the department's interests. The department may support medical and other witness fees which, in the department's opinion, are necessary to defend its order.

This rule will apply to appeals filed with the board of industrial insurance appeals on or after the effective date of this rule.

[Statutory Authority: RCW 51.04.020. 88-12-096 (Order 88-07), § 296-15-250, filed 6/1/88. Statutory Authority: RCW 51.14.020(1). 83-18-038 (Order 83-28), § 296-15-250, filed 9/1/83.]

WAC 296-15-255 Hearings for corrective action or withdrawal of certification. (1) This section applies only to proceedings to withdraw certification or for corrective action instituted by the director in response to a petition filed with the department pursuant to RCW 51.14.090. This section shall not apply to actions instituted by the director to withdraw certification pursuant to RCW 51.14.080 nor to corrective action instituted by the director pursuant to RCW 51.14.095.

(2) The director is authorized to institute proceedings which may result in corrective action or decertification of a self-insured employer when there is a petition for such action by any employee or union or association having a substantial number of employees in the employ of the self-insured.

When such proceedings are instituted in response to a petition filed under RCW 51.14.090, there shall be a hearing before the director to review and determine findings pertaining to the alleged grounds for action. Any such hearing shall be conducted in accordance with the department's rules governing administrative hearings. The director will notify all parties at least twenty days prior to the date of the hearing. The notice shall include the following:

(a) Nature of proceedings;

(b) Legal authority for holding the hearing;

(c) Reference to the section of statutes and rules involved;

(d) A description of matters asserted;

(e) The date, time, and place of the hearing.

All parties will be allowed to respond and present evidence and arguments on the issues involved.

Within thirty days of the hearing date, the department will provide written notification of the proceedings, findings, and conclusions to all hearing participants.

(3) If, following the hearing, the decision is to withdraw certification or take corrective action, such action shall comply with the provisions of RCW 51.14.090 (2) and (3) in the case of withdrawal of certification, and RCW 51.14.095 (1), (2), and (3) in the case of corrective action.

[Statutory Authority: RCW 51.04.020. 86-18-037 (Order 86-35), § 296-15-255, filed 8/28/86.]

WAC 296-15-260 Corrective action or withdrawal of certification. (1) Corrective action against a self-insured employer shall be by order and notice. A notice of corrective action shall include the nature and specifics of the findings and may include the following:

(a) Probationary certification status for the self-insured employer for a period not to exceed one year;

(b) Mandatory training to correct areas of program deficiency to be approved by the department.

The subject matter to be covered shall be specified in the notice of corrective action. Personnel required to attend and the time period within which the training is to be conducted will also be identified.

(c) Monitoring activities of the self-insured employer for a specified period of time to determine progress regarding correction of program deficiencies may be required. The department may require submission of complete and accurate records and/or conduct an audit to verify program compliance.

(d) If there is a contract between the self-insured employer and a service organization which has been filed with the department (WAC 296-15-110), the corrective action order may specify and require that the service organization be subject to mandatory training and monitoring of activity provisions of the order.

(e) The corrective action order shall specify a time frame for submission of progress reports to the department's self-insurance administrator.

(f) During the first thirty days following the corrective action order, the self-insured employer shall submit a plan for the implementation of corrective action which shall include specific completion dates. If the plan is determined to be incomplete or inadequate, the department's self-insurance administrator shall notify the self-insurer of the necessary requirements or changes needed, and shall specify the date by which an amended plan shall be submitted.

(2) If sufficient grounds for decertification exist, an order and notice will be issued. The order and notice will include the following:

(a) The grounds upon which the determination is based.

(b) The period of time within which the grounds existed or arose.

(c) A statement to the self-insurer specifying the means by which the program deficiencies may be corrected.

(d) The date, not less than thirty days after the self-insured employer's receipt of the order and notice, when certification will be withdrawn in absence of satisfactory remedial action.

(e) Provisions as stipulated by RCW 51.14.090.

(3) Upon conclusion of the probationary certification period in the case of corrective action, or the remedial action period in the case of decertification, the program deficiencies requiring corrective or remedial action by the self-insured employer shall be evaluated by the department and a written report sent to affected parties. Program activities may be reaudited beyond the stated time period in order to assess continuing compliance with the objectives of the corrective action directives.

(4) If, at the conclusion of the probationary period or remedial action period, program deficiencies continue to exist, the department shall decide whether to extend the period of probation, require additional corrective action or proceed with decertification of the self-insured employer. An order and notice stating the decision shall be issued.

[Statutory Authority: RCW 51.04.020. 86-18-037 (Order 86-35), § 296-15-260, filed 8/28/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-260, filed 12/1/83, effective 1/1/84.]

WAC 296-15-265 Penalties. The department may assess penalties against a self-insurer at any time it is determined that grounds exist for such penalties as provided for in Title 51 RCW. The department shall issue an order and notice which shall state the grounds for which the penalty is assessed and the amount assessed. Upon receipt of the order and notice, the self-insurer shall pay the penalty assessment within 10 days following the date the order becomes final and binding.

[Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-265, filed 12/1/83, effective 1/1/84.]

Chapter 296-15A WAC
INDUSTRIAL INSURANCE DISCRIMINATION

WAC

WAC 296-15A-010 Definitions. For the purposes of this chapter, the following words shall have these meanings:

(1) "Director" shall mean the director of the department of labor and industries of the state of Washington.

(2) "Employee" shall have the same meaning as that defined in [RCW] 51.08.180 and 51.08.185.

(3) "Employer" shall have the same meaning as defined in RCW 51.08.070.

[Statutory Authority: 1985 c 347 § 8 and RCW 51.04.020. 86-01-016 (Order 85-35), § 296-15A-010, filed 12/9/85.]

WAC 296-15A-020 Filing a complaint of discrimination. (1) Any employee who believes that he or she has been discharged or otherwise discriminated against by an employer in violation of this section may file a complaint with the director alleging discrimination within ninety days of the date of the alleged violation. Upon receipt of such complaint, the director shall cause an investigation to be made as the director deems appropriate. Within ninety days of the receipt of the complaint filed under this section, the director shall notify the complainant of his or her determination. If upon investigation, it is determined that this section has been violated, the director shall bring an action in the superior court of the county in which the violation is alleged to have occurred.

(2) Who may file. A complaint of discrimination may be filed by the employee.

(3) Nature of filing. A complaint must be filed in writing; however, no particular form of complaint is required.

(4) Place of filing. The complaint should be filed with the director of the department of labor and industries. The complaint should be sent to the Director of the Department of Labor and Industries, Olympia, Washington 98504.

[Statutory Authority: 1985 c 347 § 8 and RCW 51.04.020. 86-01-016 (Order 85-35), § 296-15A-020, filed 12/9/85.]

Chapter 296-16 WAC
EMPLOYER—WORKER REEMPLOYMENT INCENTIVES

WAC

WAC 296-16-010 Premium waived for employment of preferred worker. In order to implement the provisions of RCW 51.16.120(3) by way of encouraging employment of injured workers who are not reemployed by the employer at the time of injury, the following provisions are adopted:

Any employer who employs a "preferred worker" as defined in these rules shall be excused from the payment of industrial insurance premiums and/or accident costs under the circumstances and conditions herein provided:

(1) A "preferred worker" may be classified as such by the department when the supervisor or his or her designee shall determine, in his or her discretion, that such person has sustained an industrial injury or occupational disease under our state Industrial Insurance Act which prevents the worker from returning to work with the former employer and that such injury or occupational disease is substantially impairing the likelihood of such worker's reemployment with other employers. A worker may be certified as a preferred worker for a period not to exceed thirty-six calendar months.

(2) Any state fund employer, other than the employer at the time of injury or exposure, who employs a "preferred worker" shall be excused, during the period of employment of such worker but not to exceed thirty-six calendar months, from the payment of any accident fund premiums and medical aid premiums which would otherwise be due based upon such employment.

(3) In the event that a further injury or occupational disease is sustained by a reemployed "preferred worker"

during the first thirty-six months subsequent to the hiring of such "preferred worker," while in the employ of the accepting employer, such employer, whether insured by the state fund or self-insured, shall not be charged with the costs of any such claim which would otherwise be charged to or paid by such employer. Such costs shall be charged against the second injury fund.

The provisions of subsections (2) and (3) of this section shall apply only if the intent to hire form is completed and received by the department within sixty days from the first day of employment. Receipt of the intent to hire form authorizes the department to assign the appropriate risk classification to the employers' account.

[Statutory Authority: RCW 51.16.120(3) and 51.32.095. 88-21-022 (Order 88-24), § 296-16-010, filed 10/10/88. Statutory Authority: RCW 51.04.020(1) and 51.16.120(3). 85-13-027 (Order 85-12), § 296-16-010, filed 6/11/85. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-033 (Order 80-24), § 296-16-010, filed 12/1/80, effective 1/1/81.]

Chapter 296-17 WAC

MANUAL OF RULES, CLASSIFICATIONS, RATES, AND RATING SYSTEM FOR WASHINGTON WORKERS' COMPENSATION INSURANCE

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-17-010 Seventy-five percent of average cost of pension claims—Industrial insurance base rates and medical aid rates. [Order 70-11, § 296-17-010, filed 11/30/70, effective 1/1/71; Order 69-5, § 296-17-010, filed 12/1/69; Order 68-8, § 296-17-010, filed 11/27/68, effective 1/1/69; General Order 1-67, filed 11/20/67, effective 1/1/68; General Order 1-66, filed 11/28/66, effective 1/1/67; General Order 1-65, filed 11/30/65, effective 1/1/66.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-020 Agricultural workers. [Order 68-9, § 296-17-020, filed 2/26/69, effective 4/1/69.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-030 Agricultural workers—Definition of casual employee. [Order 68-9, § 296-17-030, filed 2/26/69, effective 4/1/69.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-040 Agricultural workers—Payroll audit equivalent for hours of work. [Order 68-9, § 296-17-040, filed 2/26/69, effective 4/1/69.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-100 Premium payments—Quarterly reports. [Order 72-12, § 296-17-100, filed 7/18/72; Order 71-14, § 296-17-100, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-110 Determining accident fund premiums—Cost experience. [Order 72-19, § 296-17-110, filed 11/30/72, effective 1/1/73; Order 71-14, § 296-17-110, filed 2/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-120 Merit rating plan. [Order 72-19, § 296-17-120, filed 11/30/72, effective 1/1/73; Order 71-14, § 296-17-120, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-130 Credibility table for industrial insurance rates. [Order 72-19, § 296-17-130, filed 11/30/72, effective 1/1/73; Order 71-14, § 296-17-130, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/19/73, effective 1/1/74.

296-17-140 Average cost of pension claims—Effective date. [Order 71-14, § 296-17-140, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-150 Basis for determining medical aid premium. [Order 71-14, § 296-17-150, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-160 Qualifications for employer groups or workmen's compensation insurance. [Order 71-14, § 296-17-160, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-170 Dividends. [Order 71-14, § 296-17-170, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-180 Industrial insurance (accident fund) base rates and medical aid rates by class of industry. [Order 72-19, § 296-17-180, filed 11/30/72, effective 1/1/73; Order 72-12, § 296-17-180, filed 7/18/72; Order 71-14, § 296-17-180, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-190 Notice of employer inclusion—Reporting of hours. [Order 71-14, § 296-17-190, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-200 Minimum premium for elective adoption. [Order 71-14, § 296-17-200, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-210 Assessment for supplemental pension fund. [Order 73-16, § 296-17-210, filed 8/27/73; Order 72-16, § 296-17-210, filed 8/4/72; Order 71-14, § 296-17-210, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. Second repeal by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-330 Officers or members of a corporate employer. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-330, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-330, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-330, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-330, filed 11/27/78, effective 1/1/79; Order 75-28, § 296-17-330, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-330, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-330, filed 11/9/73, effective 1/1/74.] Repealed by 87-24-060 (Order 87-26), filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.16.035.

296-17-340 Sole proprietors and partners. [Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-340, filed 5/29/87, effective 7/1/87; 84-24-016 (Order 84-23), § 296-17-340, filed 11/28/84, effective 1/1/85; Order 75-28, § 296-17-340, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-340, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-340, filed 11/9/73, effective 1/1/74.] Repealed by 87-24-060 (Order 87-26), filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.16.035.

296-17-349 Corporate officer and limited partner—Coverage extended. [Statutory Authority: RCW 51.16.035. 88-06-048 (Order 88-01), § 296-17-349, filed 3/1/88, effective 4/1/88.] Repealed by 91-24-057, filed 11/29/91, effective 1/1/92. Statutory Authority: RCW 51.04.120.

296-17-351 Periodic review of cash deposit. [Statutory Authority: RCW 51.04.020 and Title 51 RCW. 82-10-034 (Order 82-16), § 296-17-351, filed 4/30/82. Statutory Authority: RCW 51.16.035. 80-17-016 (Order 80-23), § 296-17-351, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-351, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-351, filed 11/30/76; Order 74-29, § 296-17-351, filed 5/29/74, effective 7/1/74.] Repealed by 91-20-078, filed 9/27/91, effective 10/28/91. Statutory Authority: HB 1206 and RCW 51.04.020.

296-17-35101 Employer's surety bond in lieu of a cash deposit. [Statutory Authority: RCW 51.04.020(1). 84-06-018 (Order 84-3), § 296-17-35101, filed 2/29/84.] Repealed by 91-20-078, filed 9/27/91, effective 10/28/91. Statutory Authority: HB 1206 and RCW 51.04.020.

296-17-375 Work done by contract. [Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-375, filed 11/30/83, effective 1/1/84.] Repealed by 85-12-024 (Order 85-11), filed 5/31/85. Statutory Authority: RCW 51.16.035.

296-17-480 Penalty assessment for failure to keep records, or file quarterly reports and pay premiums under Title 51 RCW. [Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-480, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-480, filed 2/9/83.] Repealed by 87-24-060 (Order 87-26), filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.16.035.

296-17-506 Classification 0106. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-506, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-506, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-506, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-506, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-506, filed 11/9/73, effective 1/1/74.] Repealed by 94-12-051, filed 5/27/94, effective 7/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-514 Classification 0401. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-514, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-514, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-514, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-514, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-514, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-514, filed 11/9/73, effective 1/1/74.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-515 Classification 0402. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-515, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-515, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-515, filed 11/9/73, effective 1/1/74.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-518 Classification 0503. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-518, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-518, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-518, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-518, filed 11/9/73, effective 1/1/74.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-520 Classification 0505. [Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-520, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-520, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-520, filed 5/29/87, effective 7/1/87; 86-12-041 (Order 86-18), § 296-17-520, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-520, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-520, filed 5/31/85; 83-24-017 (Order 83-36), § 296-17-520, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-520, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-520, filed 11/30/76; Order 75-38, § 296-17-520, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-520, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-520, filed 11/9/73, effective 1/1/74.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-531 Classification 8-6. [Order 73-22, § 296-17-531, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-533 Classification 9-2. [Order 73-22, § 296-17-533, filed 11/9/73, effective 1/1/74.] Repealed by 80-17-016 (Order 80-23), filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.16.035.

296-17-543 Classification 14-3. [Order 73-22, § 296-17-543, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-547 Classification 16-2. [Order 73-22, § 296-17-547, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-553 Classification 18-2. [Order 73-22, § 296-17-553, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-554 Classification 18-3. [Order 73-22, § 296-17-554, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-558 Classification 2005. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-558, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-558, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-558, filed 11/9/73, effective 1/1/74.] Repealed by 94-12-063, filed 5/30/94, effective 6/30/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-559 Classification 20-6. [Order 73-22, § 296-17-559, filed 11/9/73, effective 1/1/74.] Repealed by 80-17-016 (Order 80-23), filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.16.035.

296-17-576 Classification 3301. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-576, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-576, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-576, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-576, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-576, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-576, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-576, filed 11/9/73, effective 1/1/74.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-57601 Classification 3302. [Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-57601, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-57601, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-57601, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-57601, filed 11/27/78, effective 1/1/79.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-577 Classification 33-8. [Order 73-22, § 296-17-577, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-588 Classification 35-4. [Order 73-22, § 296-17-588, filed 11/9/73, effective 1/1/74.] Repealed by 79-12-086 (Order 79-18), filed 11/30/79. Statutory Authority: RCW 51.04.030 and 51.16.035.

296-17-589 Classification 35-5. [Order 73-22, § 296-17-589, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-591 Classification 35-7. [Order 73-22, § 296-17-591, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-592 Classification 3508. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-592, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-592, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-592, filed 11/9/73, effective 1/1/74.] Repealed by 91-12-014, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-593 Classification 36-1. [Order 73-22, § 296-17-593, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-598 Classification 3606. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-598, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-598, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-598, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-598, filed 11/9/73, effective 1/1/74.] Repealed by 88-12-050 (Order 88-06), filed 5/31/88, effective 7/1/88. Statutory Authority: RCW 51.16.035.

296-17-601 Classification 37-3. [Order 73-22, § 296-17-601, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Repealed by 85-06-026 (Order 85-7), filed 2/28/84, effective 7/1/85. Statutory Authority: RCW 51.16.035.

296-17-602 Classification 37-6. [Order 73-22, § 296-17-602, filed 11/9/73, effective 1/1/74.] Repealed by 79-12-086 (Order 79-18), filed 11/30/79. Statutory Authority: RCW 51.04.030 and 51.16.035.

296-17-603 Classification 3707. [Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-603, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-603, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-603, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-603, filed 11/9/73, effective 1/1/74.] Repealed by 91-12-014, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-607 Classification 38-3. [Order 73-22, § 296-17-607, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-608 Classification 38-4. [Order 73-22, § 296-17-608, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-609 Classification 38-5. [Order 73-22, § 296-17-609, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-610 Classification 38-6. [Order 73-22, § 296-17-610, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-611 Classification 38-7. [Order 73-22, § 296-17-611, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-613 Classification 38-9. [Order 73-22, § 296-17-613, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-617 Classification 39-4. [Order 73-22, § 296-17-617, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-621 Classification 41-2. [Order 73-22, § 296-17-621, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-623 Classification 41-4. [Order 73-22, § 296-17-623, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-624 Classification 41-5. [Order 73-22, § 296-17-624, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-625 Classification 41-6. [Order 73-22, § 296-17-625, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-632 Classification 4303. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-632, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-632, filed 11/9/73, effective 1/1/74.] Repealed by 86-12-041 (Order 86-18), filed 5/30/86, effective 7/1/86. Statutory Authority: RCW 51.16.035.

296-17-639 Classification 45-3. [Order 75-38, § 296-17-639, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-639, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-642 Classification 47-1. [Order 73-22, § 296-17-642, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-648 Classification 48-7. [Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-648, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-648, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-648, filed 11/9/73, effective 1/1/74.] Repealed by 85-06-026 (Order 85-7), filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.16.035.

296-17-662 Classification 5102. [Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-662, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-662, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-662, filed 11/9/73, effective 1/1/74.] Repealed by 89-24-051 (Order 89-22), filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-664 Classification 51-4. [Order 73-22, § 296-17-664, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-665 Classification 51-5. [Order 73-22, § 296-17-665, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-667 Classification 51-7. [Order 75-38, § 296-17-667, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-667, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-671 Classification 52-2. [Order 73-22, § 296-17-671, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-672 Classification 52-3. [Order 73-22, § 296-17-672, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-674 Classification 52-5. [Order 73-22, § 296-17-674, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-683 Classification 61-6. [Order 73-22, § 296-17-683, filed 11/9/73, effective 1/1/74.] Repealed by 78-12-043 (Order 78-23), filed 11/27/78, effective 1/1/79. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-702 Classification 63-7. [Order 73-22, § 296-17-702, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-705 Classification 64-1. [Order 73-22, § 296-17-705, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-720 Classification 65-7. [Order 73-22, § 296-17-720, filed 11/9/73, effective 1/1/74.] Repealed by 81-24-042 (Order 81-30), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.16.035.

296-17-728 Classification 66-6. [Order 73-22, § 296-17-728, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-731 Classification 6609. [Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-731, filed 5/31/88; 85-24-032 (Order 85-33), § 296-17-731, filed 11/27/85, effective 1/1/86; 81-24-042 (Order 81-30), § 296-17-731, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-731, filed 11/13/80, effective 1/1/81; Order 73-22, § 296-17-731, filed 11/9/73, effective 1/1/74.] Repealed by 89-16-001 (Order 89-07), filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.04.020(1).

296-17-73101 Classification 6610. [Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-73101, filed 5/31/88.] Repealed by 89-16-001 (Order 89-07), filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.04.020(1).

296-17-73102 Classification 6611. [Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-73102, filed 5/31/88.] Repealed by 89-16-001 (Order 89-07), filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.04.020(1).

296-17-73103 Classification 6612. [Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-73103, filed 5/31/88.] Repealed by 89-16-001 (Order 89-07), filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.04.020(1).

296-17-73104 Classification 6613. [Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-73104, filed 5/31/88.] Repealed by 89-16-001 (Order 89-07), filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.04.020(1).

296-17-732 Classification 67-1. [Order 73-22, § 296-17-732, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-733 Classification 67-2. [Order 73-22, § 296-17-733, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-734 Classification 67-3. [Order 73-22, § 296-17-734, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-86501 Building industry experience modification limitations. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-86501, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-86501, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 87-24-049 (Order 87-27), § 296-17-86501, filed 11/30/87, effective 1/1/88.] Repealed by 91-24-053, filed 11/27/91, effective 1/1/92. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-87307 Revision or withdrawal of experience modifications. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87307, filed 11/30/79, effective 1/1/80.] Repealed by 90-20-092, filed 10/1/90, effective 11/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-87308 Experience modification. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-87308, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87308, filed 11/30/79, effective 1/1/80.] Repealed by 90-20-092, filed 10/1/90, effective 11/1/90. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-87309 Classification assignments—Applicability. [Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87309, filed 11/30/79, effective 1/1/80.] Repealed by 87-12-032 (Order 87-12), filed 5/29/87, effective 7/1/87. Statutory Authority: RCW 51.16.035.

296-17-896 Christmas tree industry base rate revision. [Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-24-041, § 296-17-896, filed 11/30/90, effective 12/31/90.] Repealed by 93-12-093, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

WAC 296-17-310 General rules and instructions.

This section constitutes general rules and instructions for chapter 296-17 WAC.

(1) **Purposes.** This chapter of the Washington Administrative Code, including classifications of risk, premium rates, the experience rating plan, and all other rules contained herein governing the use thereof, is herein referred to as the manual. This manual is promulgated by the department of labor and industries pursuant to RCW 51.16.035. This manual contains a formulation of the rules and regulations providing for basic classifications, rates of premium, method of premium calculation and collection, and a rating system, consistent with recognized principles of workers' compensation insurance. This manual governs the department's underwriting of workers' compensation insurance and assessment of other monetary obligations, under the industrial insurance law of the state of Washington, Title 51 RCW.

(2) **Overview.** Washington law (RCW 51.16.035) requires that the department of labor and industries classify all occupations or industries by degree of hazard. To accomplish this, the department has established approximately three hundred classifications of risk embracing the various industries within the state (the actual number may vary from

year to year). These classifications are set forth in WAC 296-17-501 through 296-17-779. The general principles and objectives of the basic classification system are set forth in WAC 296-17-310.

The first step in determining the appropriate classification for an employer is to determine the nature of the employer's business being insured in this state. If the department determines that an employer's business consists of a single operation or a number of separate operations which normally prevail in that business then the single enterprise rule (WAC 296-17-380) is applicable. This rule provides that the department is to assign the single basic classification which most accurately describes the employer's entire enterprise. This process begins with the search for a basic classification which specifically describes the employer's business. If such a basic classification is found the process of assigning a basic classification is complete.

If the employers' business operation is not specifically described by any basic classification then the employer's business is to be classified as provided for in WAC 296-17-360 (assignment of classification by analogy). In classifying by analogy the department examines the process and hazard of the employer's business and compares it to that of other basic classifications with processes and hazards that are similar to those of the employer's business and assigns the most analogous classification on that basis.

In the event that a review of the employer's business operations indicates the possibility that the employer conducts more than one business within this state, a determination will be made as to whether any additional basic classifications should be assigned on the basis of the criteria set out in the multiple enterprise rule (WAC 296-17-390).

Once the employer's basic classification has been established, the department must determine whether additional classifications should be assigned to apply to specific employments within an employer's business such as the standard exception rule (WAC 296-17-440), the general exclusion rule (WAC 296-17-430), the special exception rule (WAC 296-17-441), or those indicated by the language of any applicable basic classifications that permit or require separate reporting of any operations within that business or industry or as otherwise provided by this chapter.

(3) **Premium payments - quarterly reports.** Each employer shall, upon such forms as prescribed by the department, prior to the last day of January, April, July and October of each year, pay to the department for the preceding calendar quarter, for the accident fund, and for the medical aid fund, a certain number of cents for each worker hour or fraction thereof worked by the worker in their employ except when the rules of this manual provide for a different method of premium computation. Provided, that in the event an employer has no employment subject to coverage under Title 51 RCW during a calendar quarter the employer shall submit to the department, according to the schedule described above, a quarterly report indicating "no payroll" or be subject to the penalties provided for in RCW 51.48.210. The director may promulgate, change and revise such rates at such times as necessary, according to the condition of the accident and medical aid funds, and assign rates as appropriate to employers who voluntarily seek coverage under the elective adoption provisions of the law.

(4) **Determining accident fund premium.** The amounts to be paid into the accident fund shall be determined as follows: The department shall determine a manual premium rate for each classification which shall not be inadequate, excessive or unfairly discriminatory, taking into consideration past and prospective costs in each classification and the financial condition of the accident fund as a whole.

Every employer shall pay into the accident fund at the manual premium rate unless such employer meets the requirements for the experience rating plan provided elsewhere in this manual, in which event such employer's premium rate for the accident fund shall be paid according to their experience modification as determined under the experience rating plan.

(5) **Basis for determining medical aid premium.** The amounts to be paid into the medical aid fund shall be determined as follows: The department shall determine a manual medical aid rate for each classification which shall not be inadequate, excessive or unfairly discriminatory, taking into consideration past and prospective costs in each classification and the financial condition of the medical aid fund as a whole.

Every employer shall pay into the medical aid fund at the manual premium rate unless such employer meets the requirements for the experience rating plan provided elsewhere in this manual, in which event such employer's premium rate for the medical aid fund shall be paid according to their experience modification as determined under the experience rating plan.

(6) All section captions or titles or catch lines used in this manual, chapter 296-17 WAC, do not constitute any part of these rules.

(7) **Assignment of classifications.** The classifications in this manual are all basic classifications other than the standard exception classifications which are defined in WAC 296-17-440 and those classifications specified in subsection (9) of this section. Basic classifications are used to implement the object of the classification system, which is to assign the one basic classification which best describes the business of the employer within this state. Each basic classification includes all the various types of labor found in a business unless it is specifically excluded by language contained within the classification or covered by a separate rule found elsewhere in this chapter, such as "standard exceptions" or "general exclusions." The classification procedure used within this state is intended to classify the business undertaking of the employer and not the separate employments, occupations, or operations of individuals within a business.

In the event an employer operates a secondary business within this state, multiple basic classifications can be assigned provided that the conditions set forth in WAC 296-17-390 "multiple enterprises" have been met. However, construction or erection operations are to be assigned classifications as provided in WAC 296-17-45003 "Special construction industry rules."

(8) **Classification assignment of separate legal entities.** Each separate legal entity shall be assigned to the basic classification or classifications which best describe its operations within the state using the classification procedures outlined in subsections (2) and (7) of this section and WAC 296-17-45003.

(9) **All operations.** Each basic classification in this manual includes all the operations normally associated with the business undertaking without regard to the location(s) of such operation(s) unless an operation is specifically excluded from the manual language of the basic classification. The following classifications are not considered to be basic classifications and are limited in scope to the definition contained within each classification 4806, 4904, 5206, 6301, 6302, 6303, 7101 or the temporary help classifications 7104 through 7121.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-310, filed 5/31/91, effective 7/1/91; 89-24-051 (Order 89-22), § 296-17-310, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-16-012 (Order 88-12), § 296-17-310, filed 7/22/88, effective 1/1/89; 88-12-050 (Order 88-06), § 296-17-310, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-310, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-310, filed 5/29/87, effective 7/1/87; 86-12-041 (Order 86-18), § 296-17-310, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-310, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-310, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-310, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-310, filed 11/30/77, effective 1/1/78; Order 75-28, § 296-17-310, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-310, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-310, filed 11/9/73, effective 1/1/74.]

WAC 296-17-320 General definitions. For the purpose of interpretation of this manual, chapter 296-17 WAC, or administering Title 51 RCW, the following terms shall have the meanings given below:

(1) "Workers' compensation" means the obligation imposed upon an employer by the industrial insurance laws of the state of Washington, to insure the payment of benefits prescribed by such laws.

(2) "Risk" means and includes all insured operations of one employer within the state of Washington.

(3) "Classification" means a grouping of businesses or industries having common or similar exposures without regard to the separate employments, occupations, or operations normal to the business or industry.

(4) "Basic classification" shall be understood to have the same meaning as classification defined in subsection (3) of this section.

(5) "Exposure" means worker hours, worker days, payroll or other measure of the extent to which an employer's workers have been exposed to the hazards found within a particular business or industry classification.

(6) "Rate" means the amount of premium for each unit of exposure. All rates are rates per worker hour except where specifically provided otherwise in this manual.

(7) "Premium" means the sum derived from the application of the rates to the exposures in each classification, after application of any duly authorized experience modification, except where the rules of this manual indicate otherwise.

(8) Unless the context indicates otherwise, the words used in this manual shall have the meanings given in Title 51 RCW.

(9) "Free from control or direction" shall mean that the contracted individual has the responsibility to deliver a finished product or service without the contracting firm or individual either exercising direct supervision over the work hours or the methods and details of performance or having the right to exercise that authority under the contract.

(10) "Principle place of business" shall be the physical location of the business from which the contract of service is directed and controlled.

(11) "Within a reasonable period" for establishing an account with state agencies shall be the time prior to the first date on which the individual begins performance of service toward the contract or the date upon which the individual is required to establish an account with a state agency, as otherwise required by law, whichever event shall last occur.

(12) "Bona fide officer" means any person empowered in good faith by stockholders or directors, in accordance with articles of incorporation or bylaws, to discharge the duties of such officer.

(13) "Related by blood within the third degree" means the degree of kinship as computed according to the rules of the civil law.

(14) "Related by marriage" means the union subject to legal recognition under the domestic relations laws of this state.

[Statutory Authority: RCW 51.04.120. 91-24-057, § 296-17-320, filed 11/29/91, effective 1/1/92. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-320, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-320, filed 5/30/86, effective 7/1/86; 85-06-026 (Order 85-7), § 296-17-320, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-320, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-320, filed 11/9/73, effective 1/1/74.]

WAC 296-17-345 Professional and semiprofessional athletic teams. Athletes assigned to a Washington-domiciled sports team are mandatorily covered by Washington industrial insurance: *Provided,* That a professional athlete who is under contract with a parent team domiciled outside of the state of Washington while assigned to a team domiciled within Washington is subject to mandatory coverage by Washington industrial insurance unless the player and employer (parent team) have agreed in writing as to which state shall provide coverage in accordance with RCW 51.12.120(5).

The following rules shall apply to the written agreement:

(1) Agreement must be in writing and signed by the employer and the individual athlete.

(2) Agreement must specify the state that is to provide coverage. The state agreed upon to provide coverage must be a state in which the player's team, during the course of the season, will engage in an athletic event. For example, if the Washington-based team is a part of a league with teams in only Washington, Oregon, and Idaho, the player and the employer can agree to any of those three states to provide coverage. However, they could not agree to have California provide the coverage as this would not qualify as a state in which the player regularly performs assigned duties.

(3) The state agreed upon accepts responsibility for providing coverage and acknowledges such to the department by certified mail.

(4) Agreement and certification by the other state must be received by this department's underwriting section prior to any injury incurred by the athlete.

(5) Agreement will be for one season only commencing with the assigning of the player to a particular team. A

separate agreement and certification must be on file for each additional season.

Failure to meet all of these requirements will result in the athlete being considered a Washington worker for premium and benefit purposes until such time as all requirements have been met.

Professional sports teams who are domiciled outside the state of Washington and who participate in sporting events with Washington-domiciled teams are not subject to Washington industrial insurance for their team members while in this state. These out-of-state teams are not considered employers subject to Title 51 on the basis that they are not conducting a business within this state.

[Statutory Authority: RCW 51.04.020(1). 84-19-024 (Order 84-19), § 296-17-345, filed 9/13/84.]

WAC 296-17-350 Assumed worker hours. Assumed number of worker hours must be, and hereby, is established:

(1) **Excluded employments.** Any employer having any person in their employ excluded from industrial insurance whose application for coverage under the elective adoption provisions of RCW 51.12.110 or authority of RCW 51.12.095 or 51.32.030 has been accepted by the director shall report and pay premium on the actual hours worked for each such person who is paid on an hourly, salaried-part time, percentage of profit or piece basis; or one hundred sixty hours per month for any such person paid on a salary basis employed full time. In the event records disclosing actual hours worked are not maintained by the employer for any person paid on an hourly, salaried-part time, percentage of profits or piece basis the worker hours of such person shall be determined by dividing the gross wages of such person by the state minimum wage for the purpose of premium calculation. However, when applying the state minimum wage the maximum number of hours assessed for a month will be one hundred sixty.

(2) **Building or property management.** Resident managers, caretakers, or similar employments that are employed for irregular periods and whose compensation is for a stipulated sum in money or a substitute for money shall be reported for the purpose of premium calculation by dividing total compensation by the average hourly wage for classification 4910 as contained in WAC 296-17-89501 "average hourly wages" to determine reportable assumed hours. Provided that the reportable exposure calculated under this subsection shall not exceed 520 hours per quarter for each worker.

(3)(a) **Commission personnel—Inside employments.** Commission personnel—inside employments are persons whose compensation is based upon a percentage of the amount charged for the commodity or service rendered and who are employed exclusively within an office having no duties away from the office. Commission personnel—inside employments are to be reported for premium purposes at a minimum of assumed worker hours of not less than eight worker hours a day for part-time employment, or not less than 40 worker hours per week for full-time employment unless the employer maintains and presents to the department's representative at the time of audit payroll records that show in detail the name of each such commissioned worker, the actual number of hours worked for each such worker and the date or dates the services were rendered. If actual time records are maintained then such actual hours shall be reported to the department and premiums paid on such actual hours.

(b) **Commission personnel—Outside employments.** Commission personnel—outside employments are persons whose compensation is based upon a percentage of the amount charged for the commodity or service rendered and who are employed to perform duties primarily away from the employers premises although some office work may be performed. Commission personnel—outside employments are to be reported for premium purposes at a minimum of assumed worker hours of not less than eight worker hours a day for part-time employment, or not less than 40 worker hours per week for full-time employment: *Provided,* That the assumed eight worker hours daily for part-time employment will apply only if the employer's books and records are maintained so as to show separately such person's actual record of employment.

(4) **Salaried personnel.** Salaried personnel for the purposes of this chapter means persons whose compensation is not governed by the number of hours devoted to employment for their employer. Employers having salaried personnel in their employ shall for the purpose of premium calculation report assumed worker hours based upon one hundred sixty worker hours for each month in which the employee is on salary: *Provided,* That if the employer maintains complete and accurate records, supported by original time cards or timebook entries, the employer may report and pay premium on the actual hours worked by salaried personnel: *Provided further,* That the department may, at its discretion, authorize some other method in assuming workers hours for premium calculating purposes in the case of contract personnel employed by schools and/or school districts.

(5) **Piece workers.** For employees whose compensation is based upon the accomplishment of a number of individual tasks whether computed on the number of pounds, items, pieces, or otherwise who are not subject to any federal or state law or rule which requires the reporting of actual hours worked, the employer shall for the purpose of premium calculation assume each two dollars of earnings of each employee as representing one worker hour: *Provided,* That if the average rate of compensation for the applicable classification is at least $3.00 but less than $3.50 per worker hour the assumed amount shall be $3.00 of earnings as representing one worker hour, and on a progressive basis, if the average compensation is at least $3.50 but less than $4.00 the assumed amount shall be $3.50 of earnings as representing one worker hour, and so forth. The records of the department as compiled for the preceding fiscal year ending June 30, shall be the basis for determining the average rate of compensation for each classification: *Provided further,* That an employer who maintains records but is not required to do so shall report the actual hours worked for the purpose of premium calculation. In the event an employer who is otherwise required by federal or state laws or rules to maintain records of actual hours worked by each employee fails to do so, the worker hours of such employees will be determined by dividing the gross wages of each employee by the state minimum hourly wage to determine the hours reported for the purpose of premium

calculation. Notwithstanding any other provisions of this section, workers employed in a work activity center pursuant to WAC 296-17-779 shall be reported on the basis of the piece worker rule.

(6) **Noncontact sports teams.** All employers having personnel in their employ as defined under WAC 296-17-745 shall for the purpose of premium calculations, report assumed worker hours based upon 40 worker hours for each week in which any duties are performed.

(7) **Jockeys and race drivers.** All employers having personnel in their employ as defined under WAC 296-17-739 shall, for the purpose of premium calculations, report assumed worker hours based upon ten hours for each mount in each horse race; professional drivers shall report worker hours based upon ten hours for each heat or race of any racing event: *Provided,* That any day such personnel do not ride or drive in a race, the premium calculation shall be made by assuming ten worker hours for any day in which duties are performed.

(8) **Pilots and flight crew members.** Pilots and flight crew members having flight duties during a work shift including preflight time shall have premium calculated by utilizing daily readings logged per federal requirements of the aircraft tachometer time: *Provided,* That if the total tachometer time for any day includes a fraction of an hour, the reportable time will be increased to the next full hour: *Provided further,* That pilots and flight crew members who assume nonflying duties during a work shift will have premium calculated in accordance with the appropriate rules and classifications applicable to nonflight duties.

[Statutory Authority: RCW 51.04.020(1). 94-12-050, § 296-17-350, filed 5/27/94, effective 7/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-350, filed 5/31/93, effective 7/1/93; 90-13-018, § 296-17-350, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-350, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-350, filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.16.035 and 51.04.020. 89-07-078 (Order 89-02), § 296-17-350, filed 3/21/89, effective 4/21/89. Statutory Authority: RCW 51.16.035. 88-14-076 (Order 87-31), § 296-17-350, filed 7/1/88, effective 1/1/89; 88-12-065 (Order 88-05), § 296-17-350, filed 5/31/88; 87-24-060 (Order 87-26), § 296-17-350, filed 12/1/87, effective 1/1/88; 85-06-026 (Order 85-7), § 296-17-350, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-350, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.020(1). 84-11-034 (Order 84-11), § 296-17-350, filed 5/15/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-350, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-350, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-350, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-350, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-350, filed 5/31/77; Order 76-18, § 296-17-350, filed 5/28/76, effective 7/1/76; Order 75-28, § 296-17-350, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-350, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-350, filed 11/9/73, effective 1/1/74.]

WAC 296-17-352 Audits. An audit of the employer's books, records and payrolls performed pursuant to the authority contained in RCW 51.48.040 may include but will not be limited to:

(1) An audit to determine whether an employer engaged in a business or trade has employment subject to the industrial insurance laws.

(2) A visual inspection of the employer's workplace or places for the purpose of determining appropriate classifications in accordance with the industrial insurance laws and rules as set forth in chapter 296-17 WAC.

(3) Audits containing a complete and detailed examination of the employer's books and records for a specific period to establish the reporting of the employer's payroll in accordance with the industrial insurance laws and the rules as set forth in chapter 296-17 WAC, and as well, chapter 296-15 WAC in the event the employer has been certified a self-insurer.

Except as otherwise provided in this rule any audit time period may be less than, but will not exceed, three years of the due dates of any payments from any employer where the department has requested submission of the employer's books, or three years of the due dates of any payments where the employer makes claim for adjustment, recomputation or alteration of any such payment: *Provided,* That an employer certified to self-insure pursuant to the authority contained in chapter 51.14 RCW, shall be subject to such audit as deemed necessary to guarantee its compliance with the industrial insurance laws and rules and regulations for self-insurers: *Provided further,* That an employer who fails to make any books and records, or certified copies thereof, available for audit in the state of Washington, will be charged for all costs incurred by the department in auditing any books and records maintained at other places: *Provided further,* That in any instance where fraud may be indicated with respect to underpayment or nonpayment of premiums the audit time period may be extended beyond that previously set forth.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-352, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-352, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-352, filed 11/30/76; Order 76-18, § 296-17-352, filed 5/28/76, effective 7/1/76.]

WAC 296-17-360 Assignment of classification by analogy. The classification section of this manual contains a listing of basic classifications covering most businesses and industries.

Any enterprise or operation which is not described by such classifications shall be assigned to the basic classification(s) most analogous from the standpoint of process and hazard.

The alphabetical index section of the manual includes a number of businesses and industries that are not contained in the rule part of this manual. When such a listing is identified by the letter "A" standing for analogy, it is the intended purpose of this symbol and listing of such operations in the index to be included in the same manner as if such operations were contained in the rule part of this manual.

The limitations and conditions of the basic classification(s) so assigned and all manual rules pertaining thereto shall be applicable: *Provided,* That when a basic classification carries the phraseology of N.O.C. and the business undertaking of the employer to be classified is not specifically described by a basic manual classification or listed in the alpha index but the classification containing the phraseology of N.O.C. contains common or similar businesses or industries it is intended that the operation be classified into the N.O.C. Code.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-360, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-360,

filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-360, filed 11/9/73, effective 1/1/74.]

WAC 296-17-370 Governing classification. The governing classification of a risk is defined as that classification, other than classifications 4806, 4904, 5206, 6301, 6302, 6303, 7101 or temporary help classifications 7104 through 7121, which carries the largest number of worker hours. Provided, that this rule is only applicable when multiple basic classifications are to be assigned to an employer's business undertakings.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-370, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-370, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-370, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-370, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-370, filed 11/9/73, effective 1/1/74.]

WAC 296-17-380 Single enterprise. If the employer's business, conducted at one or more locations, consists of a single operation or a number of separate operations which normally prevail in the business described by a single basic classification, that single classification which most accurately describes the entire enterprise shall be applied. Division of worker hours shall be made as provided hereinafter in respect to standard exceptions, general exclusions and special exceptions. No division of worker hours shall be permitted in respect to any other operation even though such operation may be specifically described by some other classification, unless the applicable classification phraseology or other manual provision specifically provides for such division of worker hours.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-380, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-380, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-380, filed 11/9/73, effective 1/1/74.]

WAC 296-17-390 Multiple enterprises. If an employer operates a secondary business within this state, an additional basic classification shall be assigned only if the following conditions exist:

(1) The secondary business does not normally prevail in the principal business undertaking of the employer.

(2) The secondary business is conducted as a separate undertaking or enterprise. This condition does not apply if the classification wording requires the assignment of an additional classification for specified employees or operations.

(3) Separate and distinct payroll records are maintained for each business undertaking.

(4) Each business is physically separated by structural partitions and is conducted without an interchange of labor.

(5) The assignment of the separate classification is not prohibited by the wording of the classification governing the principle business undertaking of the employer or any other classification assigned to the employer.

If all of the above conditions do not exist:

(a) All employees shall be assigned to the classification applicable to the principle business if the classification for the principle business carries a rate which is the same or higher than that for the classification of the secondary business.

(b) The secondary business shall be assigned to the classification which describes that business if such classification carries a rate higher than that applicable to the principal business.

(c) The principle business is the business with the greatest number of worker hours, excluding standard exception or general exclusion operations.

(6) Employers with more than one classification may have employees working in connection with several classifications. Payroll assignment for such employees is subject to WAC 296-17-410 "division of single employee's worker hours."

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-390, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-390, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-390, filed 11/9/73, effective 1/1/74.]

WAC 296-17-400 Mercantile operations. For mercantile operations the classification shall be separately determined for each separate location which is conducted as a separate enterprise without interchange of labor.

[Order 73-22, § 296-17-400, filed 11/9/73, effective 1/1/74.]

WAC 296-17-410 Division of single employee's worker hours. The worker hours of any one employee may be divided between two or more classifications, provided the employer has maintained complete and accurate records supported by original time cards or time book entries which show separately both by individual employee and in summary by operations performed the worker hours of such employees, except such division SHALL NOT BE ALLOWED:

(1) Between a basic classification and standard exception classification unless specifically provided for in other rules;

(2) Between two standard exception classifications;

(3) If the division is contrary to the classification phraseology; or

(4) If the division is prohibited by some other general or special rule found elsewhere in this chapter.

If the employer fails to keep complete and accurate records as provided in this rule, the entire number of worker hours of the employee shall be assigned to the highest rated classification representing any part of their work. Division of worker hours by means of percentages, averages, estimates, or any basis other than specific time records, shall not be accepted by the department.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-410, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-410, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-410, filed 11/30/83, effective 1/1/84; Order 75-28, § 296-17-410, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-410, filed 11/9/73, effective 1/1/74.]

WAC 296-17-411 Classification for employees supporting separate operations. Employees who perform duties which support separate operations which are subject to different basic classifications are to be reported in accordance with the language of that classification, applicable to the operations supported, which carries the largest number of worker hours for the employer. For purposes of this rule, "duties which support separate operations" shall mean duties

which remain the same and are performed at the same location(s) regardless of the operation being supported.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-411, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-411, filed 2/9/83.]

WAC 296-17-420 General inclusions. All of the basic classifications in this manual, other than standard exceptions, include certain operations which would be classified separately if they were run as separate business undertakings. These operations are referred to as general inclusions and are included in the scope of each basic classification. The following operations are included in all basic classifications unless they are specifically excluded by the language of the basic classification.

(1) Aircraft travel by employees, other than members of the flying crew.

(2) Commissaries and restaurants for the employers' employees. Provided that such operations conducted in connection with construction, erection, lumbering, or mining operations shall be assigned to Code 3905 "restaurants."

(3) Manufacture of containers, such as bags, barrels, bottles, boxes, cans, cartons, wooden pallets, or packing cases by employees of the employers for use in the employer's operations.

(4) Hospitals, medical facilities, or dispensaries operated by the employers for their employees.

(5) Printing, lithography, or similar operations of the employer when used exclusively for their own products.

(6) Maintenance or ordinary repair of the employer's building or equipment when performed by employees of the employer.

(7) Pick up and delivery when done by employees of the employer in connection with the business of the employer.

(8) Sales of all goods or products being manufactured by the employer.

(9) Warehousing, handling, packing, and shipping when done by an employee of the employer and done in connection with the business of the employer.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-420, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-420, filed 5/30/86, effective 7/1/86; 85-06-026 (Order 85-7), § 296-17-420, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-420, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-420, filed 11/9/73, effective 1/1/74.]

WAC 296-17-430 General exclusions. Some operations are so exceptional or unusual that they are excluded from the scope of all basic classifications. Such operations are referred to as general exclusions and are subject to the division of worker hours rules in all classifications including the standard exception classifications. The following operations are excluded from all basic classifications including the standard exception classifications unless they are specifically included.

(1) Aircraft operation - All operations of the flying crew.

(2) Racing operations - All operations of the drivers and pit crews.

(3) Diving operations - All operations of diving personnel and ship tenders who assist in diving operations.

In addition to the above three listed exclusions, the following operations are similarly excluded from all basic classifications, provided that no division of these operations shall be permitted between the basic classifications assigned to cover these operations and any standard exception classifications.

(a) New construction or alterations by employees of the employer.

(b) Musicians and entertainers.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-430, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-430, filed 5/29/87, effective 7/1/87; 85-06-026 (Order 85-7), § 296-17-430, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-430, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-430, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-430, filed 11/9/73, effective 1/1/74.]

WAC 296-17-440 Standard exceptions. The following employments referred to as standard exceptions are to be separately rated unless these employments are specifically included within the scope of a basic classification by use of words such as "including clerical office and outside sales." (Use of the words "clerical office" will also include draftsmen and use of the words "sales personnel" will also include collectors, messengers and corporate officers.) Provided that a division of a single employee's worker hours shall not be permitted between two standard exception classifications or between a standard exception classification and a basic business classification except as provided in the general exclusion rules of this manual.

The standard exceptions are defined below:

(1) Clerical office employees are defined as those employees whose duties are confined to keeping the books or records of the employer, or conducting correspondence or who are engaged wholly in office work where such books or records are kept or where such correspondence is conducted, having no other duty of any nature in or about the employer's premises. If any clerical office employee is exposed to any operative hazard of the business, their entire worker hours shall be assigned to the highest rated classification of work to which they are exposed. The clerical office classification shall be applied only to persons as herein described who are employed exclusively in separate buildings or on separate floors of buildings or in departments on such floors which are physically separated from all other work areas of the employer by structural partitions and within which no work is performed other than clerical office duties as defined in this paragraph.

(2) Draftsmen will be considered to be clerical office employees when their duties are limited to office work only and who are engaged strictly as draftsmen in such a manner that they are not exposed to the operative hazard of the business. If any draftsman is exposed to any operative hazard of this business, their entire worker hours shall be assigned to the highest rated classification of work to which they are exposed.

(3) "Sales personnel - outside" covered under risk classifications 6301, 6302, and 6303 are defined as those employees engaged in such duties away from the premises of the employer who sell or solicit new accounts or customers for the employer or who service existing accounts or customers for the employer. Provided that no employee

shall be assigned to a sales classification code if their duties include delivery, even though they may also solicit or collect. Employees having delivery duties, even if they walk or use public transportation, shall be assigned to the basic classification of the employer.

(4) Messengers will be considered sales employees, provided the following conditions are met:

(a) The messenger is used solely by the employer in connection with the administration of the employer's business operation.

(b) The operation is not provided to the public as a general delivery service.

(c) The employer's basic classification does not include the standard exception classification designations.

If all the above conditions do not exist, any employee assigned such duties shall be assigned to the governing classification of the employer when multiple basic classifications are assigned or to the basic classification in the event an employer has only a single basic classification assigned.

(5) Corporate officers are defined as those employees of a corporation elected and empowered in accordance with the articles of incorporation or bylaws as officers of the corporation who are also shareholders and serve on the board of directors of the corporation and whose duties are limited to administrative, clerical office and outside sales activities for the corporations. Any corporate officer who performs any duty that relates directly to the operational activities of the business shall be assigned to the basic classification(s) of the employer applicable to the work being performed. A corporate officer engaged exclusively in outside sales shall be assigned classification 6303. In no event however will a corporate officer be assigned the clerical office classification 4904.

With the exceptions of occupations falling within any classification that specifically includes clerical office, inside draftsmen or sales personnel, the following designated occupational classifications shall apply.

Classification 4904 clerical office employees including inside draftsmen.

Classification 6303 sales personnel, outside or away from the employers premises including collectors, counsellors, N.O.C., and messengers.

Classification 6301 automobile, truck, camper, trailer, mobile home, motorcycle and pleasure craft sales personnel.

Classification 6302 all door to door sales personnel.

Classification 7101 corporate officers.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-440, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-440, filed 5/31/91, effective 7/1/91; 89-24-051 (Order 89-22), § 296-17-440, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-440, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-440, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-440, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-440, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-440, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-440, filed 11/9/73, effective 1/1/74.]

WAC 296-17-44001 Business described by a standard exception classification. If the principle business undertaking of an employer is described by a standard exception classification, the operations of all employees not included in the definition of the standard exception classification shall be assigned to the separate basic classification which most accurately describes their operations.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-44001, filed 2/28/85, effective 4/1/85.]

WAC 296-17-441 Special exceptions. The following operations referred to as special exceptions are subject to division of worker hours in connection with all other classifications regardless of directional phrases beginning with "all employees" or "all operations," but only under the specific circumstances as shall be described by the following special exceptions:

(1) Security guards shall be subject to classification 6601 (WAC 296-17-723): *Provided,* The security guard is an employee of an employer engaged in logging or construction: *Provided further,* The security guard is for the purpose of guarding the employer's logging or construction sites: *And provided further,* The security guard is employed at the site only during those hours that the employer is not conducting any other operations at the site and provided any person employed as a security guard will have no other duties.

(2) Janitors shall be subject to classification 6602 (WAC 296-17-724): *Provided,* The janitorial services are performed solely within the employer's office: *Provided further,* The employer's other office employment is subject to classification 4904 (WAC 296-17-653) and provided the person employed to perform janitorial services is not otherwise regularly employed by the employer with clerical office duties that are subject to reporting under classification 4904.

(3) Logging truck drivers employed by logging companies shall be subject to classification 5003 (WAC 296-17-66001), provided this classification shall not apply to any logging truck driver for any work shift during which the driver has duties that would otherwise be subject to classification 5001 (WAC 296-17-659).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-441, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-441, filed 11/27/85, effective 1/1/86; 80-17-016 (Order 80-23), § 296-17-441, filed 11/13/80, effective 1/1/81.]

WAC 296-17-450 Special agricultural classification interpretations. Farming in classifications 4802 through 4806, 4808, 4809, 4810, 4811, 7301, 7302, and 7307 will include farm labor by contractors and farm machinery operations by contractors.

To qualify for separate ratings (classifications), separate and distinct payroll records of each such operation will be required.

If a single establishment or work comprises more than one of classifications 4802 through 4806, 4808, 4809, 4810, 4811, 7301, 7302, and 7307 and the language of the classifications under consideration allow for a division of payroll hours then the premiums shall be computed according to the payroll of each classification provided distinct payroll records have been kept for each such operation, otherwise, the operation will be assigned to the highest rated classification representing any portion of the work being performed. Separate agricultural classifications shall not be assigned to any agricultural operation which is within the scope of

another basic classification assigned to the business. For example an employer engaged in the business of raising livestock would not be permitted to report the growing of crops which is used to feed such animals under a separate classification since the risk classification governing livestock farms includes the raising of such crops. The department in its discretion may assess a single rate of premium for an agricultural establishment when a substantial portion of the operation falls within one classification, and in such cases, the entire operation will be required to be reported in such largest classification: *Provided,* That under no circumstance will the hand-picking classification (4806) apply for the purpose of single rating an entire establishment engaged in other phases of agricultural activities. Provided further, that farm labor contractors shall be assigned the classification(s) applicable to the agricultural establishment for whom they are providing services.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-450, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-450, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-450, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-450, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-450, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-450, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-450, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-450, filed 11/27/74, effective 1/1/75; Order 74-29, § 296-17-450, filed 5/29/74, effective 7/1/74; Order 73-22, § 296-17-450, filed 11/9/73, effective 1/1/74.]

WAC 296-17-45001 Special horse racing classification interpretation. For the purposes of administering the parimutuel horse racing classifications 6614 through 6617 the terms used such as parimutuel horse racing, trainers, grooms, etc., shall be given the same meanings as those contained in chapter 67.16 RCW "Horse Racing" or Title 260 WAC "Horse Racing Commission."

The term "major tracks" shall mean Yakima Meadows, Spokane Playfair, and Longacres in Renton.

The term "fair meets or bush tracks" shall mean all other parimutuel horse racing tracks licensed by the Washington state horse racing commission.

For premium purposes, owners shall contribute one hundred fifty dollars annually at the time of license issuance or renewal. The payment of premium by an owner does not imply an employer employee relationship but serves to help fund the premium obligation of the horse racing industry. Individuals involved in a syndication or percentage ownership of a parimutuel race horse and who become licensed by the horse racing commission shall pay premium according to their percentage ownership in the horse or horses.

[Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-45001, filed 7/20/89, effective 8/20/89.]

WAC 296-17-45002 Special trucking industry rules. The following subsection shall apply to all trucking industry employers as applicable.

(1) Insurance liability. Every trucking industry employer operating as an intrastate carrier or a combined intrastate and interstate carrier must insure their workers' compensation insurance liability through the Washington state fund or be self-insured with the state of Washington.

Washington employers operating exclusively in interstate or foreign commerce or any combination of interstate and foreign commerce must insure their workers' compensation insurance liability for their Washington employees with the Washington state fund, be self-insured with the state of Washington, or provide workers' compensation insurance for their Washington employees under the laws of another state when such other state law provides for such coverage.

Interstate or foreign commerce trucking employers who insure their workers' compensation insurance liability under the laws of another state must provide the department with copies of their current policy and applicable endorsements upon request.

Employers who elect to insure their workers' compensation insurance liability under the laws of another state and who fail to provide updated policy information when requested to do so will be declared an unregistered employer and subject to all the penalties contained in Title 51 RCW.

(2) Reporting. Trucking industry employers insuring their workers' compensation insurance liability with the Washington state fund shall keep and preserve all original time records/books including supporting information from drivers' logs for a period of three calendar years plus three months.

Employers are to report actual hours worked, including time spent loading and unloading trucks, for each driver in their employ. For purposes of this section, actual hours worked does not include time spent during lunch or rest periods or overnight lodging.

Failure of employers to keep accurate records of actual hours worked by their employees will result in the department estimating work hours by dividing gross payroll wages by the state minimum wage for each worker for whom records were not kept. However, in no case will the estimated or actual hours to be reported exceed five hundred twenty hours per calendar quarter for each worker.

(3) Exclusions. Trucking industry employers meeting all of the following conditions are exempted from mandatory coverage.

(a) Must be engaged exclusively in interstate or foreign commerce.

(b) Must have elected to cover their Washington workers on a voluntary basis under the Washington state fund and must have elected such coverage in writing on forms provided by the department.

(c) After having elected coverage, withdrew such coverage in writing to the department on or before January 2, 1987.

If all the conditions set forth in (a), (b), and (c) of this subsection have not been met, employers must insure their workers' compensation insurance liability with the Washington state fund or under the laws of another state.

(4) Definitions. For purposes of interpretation of RCW 51.12.095(1) and administration of this section, the following terms shall have the meanings given below:

(a) "Agents" means individuals hired to perform services for the interstate or foreign commerce carrier that are intended to be carried out by the individual and not contracted out to others but does not include owner operators as defined in RCW 51.12.095(1).

(b) "Contacts" means locations at which freight, merchandise, or goods are picked up or dropped off within the boundaries of this state.

(c) "Doing business" means having any terminals, agents or contacts within the boundaries of this state.

(d) "Employees" means the same as the term "worker" as contained in RCW 51.08.180.

(e) "Terminals" means a physical location wherein the business activities (operations) of the trucking company are conducted on a routine basis. Terminals will generally include loading or shipping docks, warehouse space, dispatch offices and may also include administrative offices.

(f) "Washington" shall be used to limit the scope of the term "employees." When used with the term "employees" it will require the following test for benefit purposes (all conditions must be met).

(i) The individual must be hired in Washington or must have been transferred to Washington; and

(ii) The individual must perform some work in Washington (i.e., driving, loading, or unloading trucks).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-45002, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-45002, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.12.095. 89-18-051 (Order 89-11), § 296-17-45002, filed 8/31/89, effective 10/1/89.]

WAC 296-17-45003 Special construction industry rule. (1) Construction or erection operations. Each distinct type of construction or erection operation at a job site or location shall be assigned to the basic classification describing that operation provided separate payroll/time records are maintained for each such operation and which show in detail the name, rate of pay, and actual hours worked for each employee.

In the event payroll/time records are not maintained to support separate classification assignments the entire number of work hours in question shall be assigned to the highest rated classification which applies to the job site or location where the operation is being performed. The department may upon request by an employer (contractor) prior to the commencement of a contract authorize the use of a single basic classification to cover an entire project.

Selection of the basic classification will be determined by estimating the work hours for each construction operation at the site or location and calculating the premiums by each applicable classification—total estimated premiums will then be divided by the total estimated hours to produce an average rate. The basic classification assigned to the employer that carries the rate nearest to the estimated average rate will be selected provided that if the estimated average rate is equally between two classifications assigned to the employer the lower of the two rates will be selected.

Separate construction or erection classifications shall not be assigned to any operation which is within the scope of another basic classification assigned to such a job site or location. For example a carpenter employed by a concrete contractor to build foundation forms is to be assigned to a concrete construction classification and not a carpentry classification.

(2) Subcontracted work. The general contractor as defined in RCW 18.27.010, who subcontracts work out to others must ensure that such subcontractors are properly registered and licensed under chapter 18.27 or 19.28 RCW as applicable to avoid being held liable for industrial insurance premiums for such subcontractors (RCW 51.12.070). At the time of audit or within thirty days thereafter the general contractor or specialist contractor as the case may be who has subcontracted work out to others must provide the department's traveling auditors, agents or assistants a list containing the names of such subcontractors, their contractors registration of license number, the expiration date of such registration or license, and their uniform business identifier or industrial insurance account number. Failure by the general contractor or specialist contractor to provide this record at the time of audit may result in a premium assessment being made for each subcontractor used by the general contractor or specialist contractor.

(3) Debris removal. Work hours related to the removal of construction materials equipment or debris from a job site or location by employees of a general contractor or specialist contractor are to be assigned to the construction classification applicable to the phase of construction work being supported by such clean up personnel. However, if clean up personnel are involved in general job site or location clean up then risk classification 0510 or 0518 will apply as applicable to the job site or location. Employees of a specialist contractor engaged exclusively in debris removal services shall be assigned to risk classification 0510 or 0518 as applicable to the job site or location serviced.

(4) Scaffolding, hoists, and towers. Work hours related to the installation, maintenance or removal of scaffolding, hod hoists, distributing towers, sidewalk bridges, and elevators by employees of a general contractor or specialist contractor are to be assigned to the construction classification applicable to the phase of construction being supported. However, if the scaffolding, hod hoists, distributing towers, sidewalk bridges and elevators being installed supports several phases of construction then risk classification 0510 or 0518 will apply as applicable to the jobsite or location. Employees of a specialist contractor engaged exclusively in work described in this subsection shall be assigned to risk classification 0510 or 0518 as applicable to the job site or location.

(5) Preoccupancy clean up. Work hours related to preoccupancy clean up by employees of a general contractor or specialist contractor are to be assigned to classification 6602 "Janitors, N.O.C." provided that the term "preoccupancy clean up" for purposes of this rule is limited in scope to dusting, washing windows, vacuuming carpets, mopping floors, and cleaning fixtures. A division of individual work hours between classification 6602 and any construction, erection, or shop classification is not allowed. Employees having duties that fall within a construction classification and who are also engaged in preoccupancy clean up are to be reported in the applicable construction classification.

(6) Shop or yard operations. Construction or erection contractors who maintain a permanent shop or yard operation may report the work hours of such employees in classification 5206, provided that this classification shall not apply to any yard or shop employee during any work shift in which the yard or shop employee has duties subject to another classification or if the classification assigned to the employer requires a separate treatment for shop operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-45003, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-45003, filed 12/1/89, effective 1/1/90.]

WAC 296-17-45004 Forest, range, or timber land services—Industry rule. Washington law (RCW 51.48.030) requires every employer to make, keep, and preserve records which are adequate to facilitate the determination of premiums (taxes) due to the state for workers' compensation insurance coverage for their covered workers. In the administration of Title 51 RCW, and as it pertains to the forest, range, or timber land services industry, the department of labor and industries has deemed the records and information required in the various subsections of this section to be essential in the determination of premiums (taxes) due to the state fund. The records so specified and required, shall be provided at the time of audit to any representative of the department who has requested them.

Failure to produce these required records within thirty days of the request, or within an agreed upon time period, shall constitute noncompliance of this rule and RCW 51.48.030 and 51.48.040. Employers whose premium computations are made by the department in accordance with subsection (4) of this section are barred from questioning, in an appeal before the board of industrial insurance appeals or the courts, the correctness of any assessment by the department on any period for which such records have not been kept, preserved, or produced for inspection as provided by law.

(1) General definitions. For purpose of interpretation of this section, the following terms shall have the meanings given below:

(a) "Actual hours worked" means each workers' composite work period beginning with the starting time of day that the employees' work day commenced, and includes the entire work period, excluding any nonpaid lunch period, and ending with the quitting time each day work was performed by the employee.

(b) "Work day" shall mean any consecutive twenty-four-hour period.

(2) Employment records. Every employer shall with respect to each worker, make, keep, and preserve original records containing all of the following information for three full calendar years following the calendar year in which the employment occurred:

(a) The name of each worker;

(b) The Social Security number of each worker;

(c) The beginning date of employment for each worker and, if applicable, the separation date of employment for each such worker;

(d) The basis upon which wages are paid to each worker;

(e) The number of units earned or produced for each worker paid on a piece-work basis;

(f) The risk classification(s) applicable to each worker;

(g) The number of actual hours worked by each worker, unless another basis of computing hours worked is prescribed in WAC 296-17-350. For purposes of chapter 296-17 WAC, this record must clearly show, by work day, the time of day the employee commenced work, and the time of day work ended;

(h) A summary time record for each worker showing the calendar day or days of the week work was performed and the actual number of hours worked each work day;

(i) In the event a single worker's time is divided between two or more risk classifications, the summary contained in (h) of this subsection shall be further broken down to show the actual hours worked in each risk classification for the worker;

(j) The workers' total gross pay period earnings;

(k) The specific sums withheld from the earnings of each worker, and the purpose of each sum withheld;

(l) The net pay earned by each such worker.

(3) Business, financial records, and record retention. Every employer is required to keep and preserve all original time records completed by their employees for a three-year period. The three-year period is specified in WAC 296-17-352 as the composite period from the date any such premium became due.

Employers who pay their workers by check are required to keep and preserve a record of all check registers and cancelled checks; and employers who pay their workers by cash are required to keep and preserve records of these cash transactions which provide a detailed record of wages paid to each worker.

(4) Recordkeeping - estimated premium computation. Any employer required by this section to make, keep, and preserve records containing the information as specified in subsections (2) and (3) of this section, who fails to make, keep, and preserve such records, shall have premiums calculated as follows:

(a) Estimated worker hours shall be computed by dividing the gross wages of each worker for whom records were not maintained and preserved, by the state's minimum wage, in effect at the time the wages were paid or would have been paid. However, the maximum number of hours to be assessed under this provision will not exceed five hundred twenty hours for each worker, per quarter for the first audited period. Estimated worker hours computed on all subsequent audits of the same employer that disclose a continued failure to make, keep, or preserve the required payroll and employment records shall be subject to a maximum of seven hundred eighty hours for each worker, per quarter.

(b) In the event an employer also has failed to make, keep, and preserve the records containing payroll information and wages paid to each worker, estimated average wages for each worker for whom a payroll and wage record was not maintained will be determined as follows: The employer's total gross income for the audit period (earned, received, or anticipated) shall be reduced by thirty-five percent to arrive at "total estimated wages." Total estimated wages will then be divided by the number of employees for whom a record of actual hours worked was not made, kept, or preserved to arrive at an "estimated average wage" per worker. Estimated hours for each worker will then be computed by dividing the estimated average wage by the state's minimum wage in effect at the time the wages were paid or would have been paid as described in (a) of this subsection.

(5) Reporting requirements and premium payments.

(a) Every employer who is awarded a forest, range, or timber land services contract must report the contract to the department promptly when it is awarded, and prior to any

work being commenced, except as provided in (c) of this subsection. Employers reporting under the provisions of (c) of this subsection shall submit the informational report with their quarterly report of premium. The report shall include the following information:

(i) The employers' unified business identification account number (UBI).

(ii) Identification of the landowner, firm, or primary contractor who awarded the contract, including the name, address, and phone number of a contact person.

(iii) The total contract award.

(iv) Description of the forest, range, or timber land services work to be performed under terms of the contract.

(v) Physical location/site where the work will be performed including legal description.

(vi) Number of acres covered by the contract.

(vii) Dates during which the work will be performed.

(viii) Estimated payroll and hours to be worked by employees in performance of the contract.

(b) Upon completion of every contract issued by a landowner or firm that exceeds a total of ten thousand dollars, the contractor primarily responsible for the overall project shall submit in addition to the required informational report described in (a) of this subsection, report the payroll and hours worked under the contract, and payment for required industrial insurance premiums. In the event that the contracted work is not completed within a calendar quarter, interim quarterly reports and premium payments are required for each contract for all work done during the calendar quarter. The first such report and payment is due at the end of the first calendar quarter in which the contract work is begun. Additional interim reports and payments will be submitted each quarter thereafter until the contract is completed. This will be consistent with the quarterly reporting cycle used by other employers. Premiums for a calendar quarter, whether reported or not, shall become due and delinquent on the day immediately following the last day of the month following the calendar quarter.

(c) A contractor may group contracts issued by a landowner, firm, or other contractor that total less than ten thousand dollars together and submit a combined quarterly report of hours, payroll, and the required premium payment in the same manner and periods as nonforestation, range, or timber land services employers.

(6) Out-of-state employers. Forest, range, or timber land services contractors domiciled outside of Washington state must report on a contract basis regardless of contract size for all forest, range, or timber land services work done in Washington state. Out-of-state employers will not be permitted to have an active Washington state industrial insurance account for reporting forest, range, or timber land services work in the absence of an active Washington forest, range, or timber land services contract.

(7) Work done by subcontract. Any firm primarily responsible for work to be performed under the terms of a forest, range, or timber land services contract, that subcontracts out any work under a forest, range, or timber land services contract must send written notification to the department prior to any work being done by the subcontractor. This notification must include the name, address, Social Security number, farm labor contractor number, (UBI) of each subcontractor, and the amount and description of contract work to be done by subcontract.

(8) Forest, range, or timber land services contract release - Verification of hours, payroll, and premium. The department may verify reporting of contractors by way of an on-site visit to an employers' work site. This on-site visit may include close monitoring of employees and employee work hours. Upon receipt of a premium report for a finished contract, the department may conduct an audit of the firm's payroll, employment, and financial records to validate reporting. The department will notify the contractor, and the entity that awarded the contract, of the status of the contractors' account immediately after verification. The landowner, firm, or contractors' premium liability will not be released until the final report for the contract from the primary contractor and any subcontractors has been received and verified by the department.

(9) Premium liability - work done by contract. Washington law (RCW 51.12.070) places the responsibility for industrial insurance premium payments primarily and directly upon the person, firm, or corporation who lets a contract for all covered employment involved in the fulfillment of the contract terms. Any such person, firm, or corporation letting a contract is authorized to collect from the contractor the full amount payable in premiums. The contractor is in turn authorized to collect premiums from any subcontractor they may employ his or her proportionate amount of the premium payment.

To eliminate premium liability for work done by contract permitted by Title 51 RCW, any person, firm, or corporation who lets a contract for forest, range, or timber land services work must submit a copy of the contract they have let to the department and verify that all premiums due under the contract have been paid.

Each contract submitted to the department must include within its body, or on a separate addendum, all of the following items:

(a) The name of the contractor who has been engaged to perform the work;

(b) The contractor's UBI number;

(c) The contractor's farm labor contractor number;

(d) The total contract award;

(e) The date the work is to be commenced; a description of the work to be performed including any pertinent acreage information;

(f) Location where the work is to be performed;

(g) A contact name and phone number of the person, firm, or corporation who let the contract;

(h) The total estimated wages to be paid by the contractor and any subcontractors;

(i) The amount to be subcontracted out if such subcontracting is permitted under the terms of the contract;

(j) The total estimated number of worker hours anticipated by the contractor and his/her subcontractors in the fulfillment of the contract terms;

(10) Reports to be mailed to the department. All contracts, reports, and information required by this section are to be sent to:

The Department of Labor and Industries
Reforestation Team 8
P.O. Box 44168
Tumwater, Washington 98504-4168

(11) Rule applicability. If any portion of this section is declared invalid, only that portion is repealed. The balance of the section shall remain in effect.

[Statutory Authority: RCW 51.04.020. 94-24-008, § 296-17-45004, filed 11/28/94, effective 1/1/95. Statutory Authority: RCW 51.04.020(1), 51.16.035, 51.12.070 and 51.16.060. 92-18-065, § 296-17-45004, filed 8/31/92, effective 10/1/92.]

WAC 296-17-45005 Logging and/or tree thinning—Mechanized operations—General reporting rule. The following subsection shall apply to all employers assigned to report worker hours in risk classification 5005, WAC 296-17-66003.

(1) Every employer having operations subject to risk classification 5005 "logging and/or tree thinning - mechanized operations" shall have their operations surveyed by labor and industries insurance services staff prior to the assignment of risk classification 5005 to their account. Annual surveys will be required after the initial survey to retain the risk classification assignment.

(2) Every employer as a prerequisite of being assigned risk classification 5005 and having exposure (work hours) which is reportable under other risk classifications assigned to the employer shall be required to establish a separate subaccount for the purpose of reporting exposure (work hours) and paying premiums under this risk classification (5005). Except as otherwise provided for in this rule, only exposure (work hours) applicable to work covered by risk classification 5005 shall be reported in this subaccount. In the event that the employer's only other reportable exposure (work hours) is subject to one of the standard exception risk classifications, or the shop or yard risk classification then all exposure (work hours) will be reported under a single main account.

(3) Every employer assigned to report exposure (work hours) in risk classification 5005 shall supply an addendum report with their quarterly premium report which lists the name of each employee reported under this classification during the quarter, the Social Security number of such worker, the piece or pieces of equipment the employee operated during the quarter, the number of hours worked by the employee during the quarter, and the wages earned by the employee during the quarter.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-051, § 296-17-45005, filed 5/27/94, effective 7/1/94.]

WAC 296-17-455 Special temporary help classification interpretation. For the purposes of administering the temporary help classifications 7104 through 7121, the term "temporary help" shall be given the same meaning as temporary service contractors defined in RCW 19.31.020(2) and shall mean any person, firm, association or corporation conducting a business which consists of employing individuals directly for the purpose of furnishing such individuals on a part-time or temporary help basis to others.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-455, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-455, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-455, filed 2/28/85, effective 4/1/85.]

WAC 296-17-460 Classification phraseology. (1) **N.O.C.** This expression is an abbreviation of the words "not otherwise classified." No classification so qualified shall be applied in any case where any other manual classification more accurately describes the enterprise or where the language of any manual classification so qualified prescribes other treatment.

(2) **Including.** If a classification carries a descriptive phrase "including" certain operations, division of worker hours shall not be made for such operations even though they may be specifically described by some other classification of this manual or may be conducted at a separate location.

(3) **All.** If a classification carries a descriptive phrase beginning with "all" as in the expression "all employees," "all other employees," "all operations," "all work to completion," division of worker hours shall not be made for any employees or operation (other than the standard exceptions, general exclusions or special exceptions), without regard to the location of such operations, except for an operation not incidental to and not usually associated with the enterprise described by such a classification.

(4) **Or.** The word "or" when used in the classification phraseology shall be understood to have the same meaning as though expressed "and/or."

(5) **And.** The word "and" when used in the classification phraseology shall be understood to have the same meaning as though expressed "and/or."

[Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-460, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-460, filed 11/9/73, effective 1/1/74.]

WAC 296-17-470 Penalty assessments for employers who fail to register under Title 51 RCW. (1) Any employer who has failed to secure payment of compensation for their workers covered under this title will be liable, subject to RCW 51.48.010, to a maximum penalty in a sum of five hundred dollars or in a sum double the amount of premiums due for the four quarters prior to securing payment of compensation under this title, whichever is greater, for the benefit of the medical aid fund.

(2) If an injury or occupational disease is sustained by a worker of an employer who has failed to secure payment of compensation under this title that employer may also be liable for the cost of such an injury or occupational disease at the time the claim for benefits is accepted by the department.

For the purposes of this section only the cost of such claim will be determined as follows:

The case reserve value shall be determined by the nature of the injury or occupational disease, the part of the body affected and other factors which will impact the cost, including but not limited to, age, education and work experience. The case reserve value will include actual costs paid to date and estimated future claim costs. No further adjustments or evaluations of the cost of the claim will be made for the purposes of this subsection after assessment for the cost of an injury or occupational disease is made by the department.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-470, filed 5/29/87, effective 7/1/87; 83-24-017 (Order 83-36), § 296-17-470, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-470, filed 2/9/83.]

WAC 296-17-501 Classification 0101.

Airports, landing strips, runways and taxi ways: Construction and repair

Alley and parking lot: Construction

Diking, N.O.C. - including oil spill clean-up involving diking and/or ditching work

Excavation work, N.O.C.

Forest trail construction, fire fighting and slash burning, N.O.C.

Grading work, N.O.C. - including land leveling and grading of farm lands by contractor

Highway, street and road, N.O.C.: Construction and repair - includes operations such as grading, grubbing, clearing, surfacing, striping, guard rail highway divider installation, highway lighting and highway sign installation

Humus or peat digging - including humus or peat dealers

Land clearing, N.O.C. - including slope grooming

Parking lot striping

Pit, crusher and bunker operations in connection with road, street and highway construction

Railroad line: Construction, maintenance and repair, N.O.C., - including the dismantling of tracks and the sale of salvaged track metal and ties

Retaining wall: Construction or repair when done in connection with road, street and highway construction, N.O.C.

Sand, gravel, or shale: Digging, N.O.C.

Tree topping and pruning services, N.O.C. - use of this subclassification is limited to employers engaged in providing a variety of tree care services such as tree topping and tree pruning. Work performed subject to this subclassification will generally take place in residential areas, or settings adjacent to roadways, parking lots, business parks, shopping malls. A primary purpose of this work is to remove tree or branch hazards from power lines or building structures. This subclassification includes all the incidental ground operations such as picking up branches and limbs, operating mobile chip machines used in connection with a tree topping or limbing operation, spraying or fumigating, and debris removal. This subclassification excludes tree pruning done in connection with an orchard operation which is to be reported separately in classification 4803; tree pruning done in connection with a nursery operation which is to be reported separately in classification 4805; tree topping or tree pruning done in connection with a public or private forest, range land operation which is to be reported separately in classification 5004; or tree pruning done in connection with a Christmas tree farm operation which is to be reported separately in classification 7307.

Tunnels and approaches - including lining, cofferdam work, shaft sinking, and well digging with caisson

This classification excludes bridge construction which is to be reported separately in classification 0201 although such a structure may be constructed as a part of a highway, street or road construction project; logging road construction which is to be reported separately in classification 6902; log railroad construction which is to be reported separately in classification 6902; and tunnels and approaches - including lining, cofferdam work, shaft sinking and well digging with caisson done in connection with dam construction which is to be reported separately in classification 0701.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-051, § 296-17-501, filed 5/27/94, effective 7/1/94; 93-12-093, § 296-17-501, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-501, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-501, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-501, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-501, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-501, filed 11/30/76; Order 75-38, § 296-17-501, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-501, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-501, filed 11/9/73, effective 1/1/74.]

WAC 296-17-502 Classification 0102.

Concrete and asphalt construction, N.O.C. - including concrete sawing, drilling and pumping

Concrete construction in connection with wood frame building construction such as foundations, sidewalks, driveways, and curbs including the placement of incidental reinforcing steel.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-502, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-502, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-502, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-502, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-502, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-502, filed 11/30/76; Order 73-22, § 296-17-502, filed 11/9/73, effective 1/1/74.]

WAC 296-17-503 Classification 0103.

Drilling, N.O.C.

Geophysical exploration, seismic detection of the mechanical properties of the earth

See construction classification applicable to work being done, for drilling done in connection with construction work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-503, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-503, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-503, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-503, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-503, filed 11/9/73, effective 1/1/74.]

WAC 296-17-504 Classification 0104.

Dredging, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-504, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-504, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-504, filed 11/9/73, effective 1/1/74.]

WAC 296-17-505 Classification 0105.

Fence erection or repair—all types, N.O.C.

Parking meter installation—report parking meter mechanism service or repair separately in risk classification 0606 (WAC 296-17-526), "vending or coin-operated machine service."

Placement of wire mesh on slopes for slope protection.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-505, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-505, filed 5/29/87, effective 7/1/87; 86-12-041 (Order 86-18), § 296-17-505, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-505, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-505, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-505, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-505, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50601 Classification 0107.

Invisible fence installation
Pipelaying, N.O.C.
Utility line construction: Underground type, N.O.C. - including television cable, power, and telephone lines.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-50601, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-50601, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-50601, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-50601, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-50601, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50601, filed 11/30/79, effective 1/1/80.]

WAC 296-17-50602 Classification 0108.

Ditches and canals, N.O.C.
Sewer construction
Septic tank installation, including drainfield construction
Tanks, N.O.C. - underground type: Installation, repair, or removal.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-50602, filed 5/30/94, effective 6/30/94; 93-12-093, § 296-17-50602, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-50602, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-50602, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-50602, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-50602, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-50602, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50602, filed 11/30/79, effective 1/1/80.]

WAC 296-17-507 Classification 0109.

Reinforcing steel installation - placing for concrete construction
Reinforcing steel installation in connection with the construction of tunnels, cofferdams, caissons, dams, bridges, and steel erection shall be assigned to the classification describing the construction with which such reinforcing steel installation is connected.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-507, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-507, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-507, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-507, filed 11/9/73, effective 1/1/74.]

WAC 296-17-508 Classification 0201.

Bridge, trestle, overhead crossing, viaducts, construction, maintenance and repair including the foundations and approaches
Breakwater, jetty, levee, construction, maintenance and repair
Bulkhead retaining walls, construction, maintenance and repair, riprapping - all water hazard
Concrete culverts or other types over 12 feet
Undercrossings and approaches - including lining
Debris removal and other work with water hazard, N.O.C., will be rated under bulkhead construction with water hazard.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-508, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-508, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-508, filed 11/9/73, effective 1/1/74.]

WAC 296-17-509 Classification 0202.

Diving operations and subaqueous work, N.O.C.
Pile driving or concrete piling construction
Wharf, pier, dock and marine railway: Construction, maintenance, and repair.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-509, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-509, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-509, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-509, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-509, filed 11/30/83, effective 1/1/84; Order 76-36, § 296-17-509, filed 11/30/76; Order 73-22, § 296-17-509, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50904 Classification 0206.

Commercial concrete construction such as but not limited to sewage disposal plants, swimming pools, fish hatcheries, water purification plants construction, and similar concrete projects
This classification will be used to report concrete construction projects other than concrete building construction reported in risk classification 0518; concrete construction done in connection with wood frame building construction reported in risk classification 0102; highway, street, and road construction projects reported in risk classification 0101; and bridge construction projects reported in risk classification 0201.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-50904, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-50904, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-50904, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-50904, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-50904, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-50904, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-50904, filed 11/29/82, effective 1/1/83.]

WAC 296-17-510 Classification 0301.

Landscape gardening
Lawn and yard care
This classification includes all work related to employers engaged in landscaping or lawn and yard care such as planting or replanting a lawn, including mixing and spreading top soil, seeding or sodding, chemical spraying or fertilizing; all lawn care such as mowing, edging, and thatching; planting and caring for trees, shrubs, and plants; installing, servicing, or repairing underground lawn or landscape sprinkler systems; weeding flower beds; spreading decorative rock or garden bark; and the construction of incidental arbors or trellis and rock or brick paver walkways when done in connection with landscaping or lawn care project or contract

This classification also includes the installation, service, and repair of above and below ground agricultural sprinkler/irrigation systems; and the planting, spraying or fumigating trees, shrubs, and plants when done separate from and not in connection with or incidental to tree care services and care of landscape for the beautification of median strips and roadsides

This classification excludes chemical spraying by aircraft which is to be reported separately in classification 6903; land clearing or grading operations which are to be reported separately in classification 0101; construction or maintenance of ditches or canals which are to be reported separately in classification 0108; tree care services by contractor which are to be reported separately in risk classification 0106; or contract forest and range land service activities for public or private landowners are to be reported separately.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-510, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-510, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-510, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-510, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-510, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-510, filed 11/30/76; Order 73-22, § 296-17-510, filed 11/9/73, effective 1/1/74.]

WAC 296-17-511 Classification 0302.

Brick and slate work, N.O.C.

Masonry, N.O.C., including chimney and fireplace construction

Plastering and stuccoing work - outside, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-511, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-511, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-511, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-511, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-511, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-511, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-511, filed 11/9/73, effective 1/1/74.]

WAC 296-17-512 Classification 0306.

Boilers, N.O.C., installation, service or repair including boiler scaling and tank erection within buildings

Hot water heater - installation, service, or repair

Plumbing, N.O.C.; including incidental side sewer hook ups (street to house) when performed by a plumbing contractor subject to this classification, and only when it is performed as a part of a plumbing contract which includes installation of water lines and waste carry systems within a building; and sewer pipe cleaning including services provided by Roto Rooter or similar service providers engaged in line cleaning or unplugging. Side sewer hookups done as a separate contract is to be separately reported in classification 0101 "Excavation"

Pump installation, service or repair, N.O.C.

Sprinkler installation - automatic

Steam pipe, boiler, etc., covering insulation

Water softening or treatment systems - installation of new equipment systems.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-512, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-512, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-512, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-512, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-512, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-512, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-512, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-512, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-512, filed 11/9/73, effective 1/1/74.]

WAC 296-17-513 Classification 0307.

Ventilating, air conditioning and refrigeration systems, installation, service and repair, N.O.C.

Furnaces, installation, service and repair including duct work cleaning

Heating systems, installation, service and repair including solar heating systems

Wood stove installation excluding masonry work rated under risk classification 0302 (WAC 296-17-511)

See risk classification 3404 (WAC 296-17-582) for sheet metal shop work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-513, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-513, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-513, filed 11/9/73, effective 1/1/74.]

WAC 296-17-516 Classification 0403.

Sign erection, painting, repair and maintenance or removal, including shop operations

Sign painting or lettering outside buildings or structures, N.O.C., including shop operations

Street and building decorating, hanging flags or bunting.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-516, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-516, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-516, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-516, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-516, filed 11/9/73, effective 1/1/74.]

WAC 296-17-517 Classification 0502.

Rug, linoleum, tile and other types of floor or drainboard covering installation excluding hardwood floor installation rated under risk classification 0513.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-517, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-517, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-517, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-517, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-517, filed 11/9/73, effective 1/1/74.]

WAC 296-17-519 Classification 0504.

Cleaning, washing, and/or sandblasting buildings, N.O.C. - including shop operations

Painting bridges, including incidental preparation work

Painting, coating or cleaning-oil or gas storage tanks, beer vats, and sewage treatment tanks

Painting, decorating or paperhanging, N.O.C., including incidental preparation, including shop

Painting towers, smokestacks and steel or iron structures

Plastering, stuccoing, and lathing buildings - interior work

Sandblasting, N.O.C., including shop operations

Wallboard taping and texturing, excluding wallboard installation rated under risk classification 0515 (WAC 296-17-52107)

Water proofing, N.O.C., excluding roofing or subaqueous work.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-519, filed 5/30/94, effective 6/30/94; 90-13-018, § 296-17-519, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-519, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-519, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-519, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-519, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-519, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-519, filed 11/30/76; Order 73-22, § 296-17-519, filed 11/9/73, effective 1/1/74.]

WAC 296-17-52001 Classification 0506.

Building raising or moving and underpinning
Wrecking or demolition of buildings.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52001, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-52001, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-52001, filed 11/29/82, effective 1/1/83.]

WAC 296-17-52002 Classification 0507.

Roofwork, all types, construction and repair
This classification excludes roof cleaning and moss removal which is to be reported separately under risk classification 6602 (WAC 296-17-724) not incidental to or part of a roofing contract. For purposes of this rule the term "roofwork" will include repairs to the subroof such as replacement of trusses, rafters, supports, sheathing, etc., but will not include the placement of trusses, rafters, or sheathing on new building construction.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-52002, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52002, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-52002, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-52002, filed 11/29/82, effective 1/1/83.]

WAC 296-17-521 Classification 0508.

Blast furnace and metal burners construction
Crane or derrick installation
Elevated railway, tram, lift, etc., construction, maintenance and repair
Exterior tanks - all types - erection, maintenance or repair, N.O.C.
Oil still or refinery construction. Excludes plant maintenance by contractor which is to be reported separately under risk classification 0603
Radio, television, water towers, poles and towers, N.O.C. - erection, maintenance and repair
Smokestacks - erection, maintenance and repair
Water cooling towers or structures - metal or wood: Erection, maintenance, and repair
Windmills - all types, erection, maintenance and repair, silo erection
This classification includes erection of skeletons for pillars, posts and like columns, all excavations, foundation work, and dismantling and repairing of above types of structures.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-521, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-521, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-521, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-521, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-521, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-521, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-521, filed 11/30/76; Order 75-38, § 296-17-521, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-521, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-521, filed 11/9/73, effective 1/1/74.]

WAC 296-17-52101 Classification 0509.

Overhead transmission, telephone, telegraph, and cable television lines, new construction or extension of lines, including poles or towers, erection, maintenance, repair by contractor.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52101, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-52101, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-52101, filed 11/29/82, effective 1/1/83.]

WAC 296-17-52102 Classification 0510.

Wood frame building construction or alteration, N.O.C.
For the purposes of this rule wood frame building construction means buildings erected exclusively of wood or wood products.
This classification includes all building framing activities done in connection with wood frame building construction including the placement of roof trusses, sheathing roofs, installation of exterior building siding, and installation of exterior doors and door frames whether performed by a general or specialty contractor.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-52102, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-52102, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-52102, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-52102, filed 11/27/85, effective 1/1/86.]

WAC 296-17-52103 Classification 0511.

Glass installation in buildings.
This classification includes installation of window/door glass, plastic, or similar materials; skylights, mirrors, storm windows, and window sashes in buildings and residences. Report installation of auto glass separately in risk classification 1108 (WAC 296-17-53805) glass merchants.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-52103, filed 5/30/86, effective 7/1/86.]

WAC 296-17-52104 Classification 0512.

Asbestos abatement - all operations
Insulation or soundproofing materials installation, N.O.C.
This classification includes installation of weather strip and caulking, roof or soffit ventilators, energy-efficient doors and related carpentry work done in connection with the weatherization or retrofitting of buildings and residences. Report installation of windows separately in risk classification 0511 (WAC 296-17-52103) "glass installation—buildings" and energy auditors with no installation or delivery duties separately in risk classification 6303 (WAC 296-17-698) "outside sales—estimators."

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-52104, filed 5/30/94, effective 6/30/94. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-52104, filed 5/29/87, effective 7/1/87; 86-12-041 (Order 86-18), § 296-17-52104, filed 5/30/86, effective 7/1/86.]

WAC 296-17-52105 Classification 0513.

Interior finish carpentry.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-52105, filed 5/29/87, effective 7/1/87.]

WAC 296-17-52106 Classification 0514.

Awnings and fire escapes: Installation, alteration, repair or removal

Garage or overhead door installation including automatic door openers when installed with a garage or overhead door

Shutter installation: Metal, plastic or wood - including repair or removal.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-52106, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-52106, filed 5/31/88, effective 7/1/88.]

WAC 296-17-52107 Classification 0515.

Wallboard installation

This classification excludes taping and texturing work which is to be reported separately in risk classification 0504 "wallboard taping and texturing."

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-52107, filed 5/31/88, effective 7/1/88.]

WAC 296-17-52108 Classification 0516.

Building repair and carpentry, N.O.C.

Playground equipment: Installation - wood.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-52108, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-52108, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-52108, filed 5/31/88, effective 7/1/88.]

WAC 296-17-52109 Classification 0517.

Mobile home set up by contractor - including installation of skirting, awnings and decks.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-52109, filed 12/1/89, effective 1/1/90.]

WAC 296-17-52110 Classification 0518.

Building construction, N.O.C., including alterations

Carport construction - metal: Erection

Service station canopy - metal: Erection.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-52110, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-52110, filed 12/1/89, effective 1/1/90.]

WAC 296-17-52111 Classification 0519.

Building construction: Sheet metal work, N.O.C., including installation of metal/aluminum siding and gutter/downspout work. This classification covers all types of interior and exterior sheet metal other than heating and ventilating systems which are to be reported separately in risk classification 0307 and roof work which is to be reported separately in risk classification 0507.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-52111, filed 12/1/89, effective 1/1/90.]

WAC 296-17-522 Classification 0601.

Electrical machinery and auxiliary apparatus installation and repair - including incidental wiring

Electrical wiring in buildings, and electrical wiring, N.O.C.

Erection of temporary floodlights - search light operation mounted on and generated by truck

Permanent flood lighting stadiums and parks

Television cable installation in buildings by contractor including drop line connection (pole to house hook-up).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-522, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-522, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-522, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-522, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-522, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-522, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-522, filed 11/9/73, effective 1/1/74.]

WAC 296-17-523 Classification 0602.

Elevators: Installation, service and repair - freight or passenger type

Elevator door bucks - installation.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-523, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-523, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-523, filed 11/9/73, effective 1/1/74.]

WAC 296-17-524 Classification 0603.

Commercial equipment installation, service and repair

Dynamos: Installation, service and repair including electrical generators and turbines

Engines and gas machines: Service and repair including installation, replacement of drive belts, erection of shafting

Machinery: Installation, service and repair - including installation and repair of escalator and conveyor systems, printing presses, and commercial laundry equipment N.O.C. and millwright work, N.O.C.

Playground equipment - metal: Installation and repair

This classification includes the dismantling of all the above types of machinery and will also include plant maintenance by contractor which will be rated as millwright work.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-524, filed 5/30/94, effective 6/30/94; 93-12-093, § 296-17-524, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-524, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-524, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-524, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-524, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-524, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-524, filed 11/9/73, effective 1/1/74.]

WAC 296-17-525 Classification 0604.

Scrap metal dealers or processors - collect, sort and reduction of scrap metal.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-525, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-525, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-525, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-525, filed 11/9/73, effective 1/1/74.]

WAC 296-17-526 Classification 0606.

Amusement devices, N.O.C.: Installation, service, repair, and removal - coin-operated in stores and shopping malls

Coin-operated machines - money collecting service

Fire extinguisher sales and service

Vending or coin-operated machines, operation, installation maintenance and service, includes product preparation by vending company

This classification excludes honor snack food services which will be reported under risk classification 1101 driver delivery sales, provided that in the event such an operation is conducted as a part of and in connection with an operation rated in this classification (0606), risk classification 0606 will be assigned to cover both operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-526, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-526, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-526, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-526, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-526, filed 11/9/73, effective 1/1/74.]

WAC 296-17-527 Classification 0607.

Advertising display service for stores within buildings

Dead bolt installation - new construction by locksmith

Drapes or curtain: Installation

Household appliances - electrical: Installation, service and repair

Meat slicer or grinder: Installation, service and repair

Rubber dock bumper: Installation

Safes and vaults: Installation and removal

Television antenna or satellite disc: Installation and repair

Venetian blinds and shades: Installation

This classification will include installation, service and repair of radio and television receiving sets, two-way radio, car stereo systems and radio-television repair.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-527, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-527, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-527, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-527, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-527, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-527, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-527, filed 11/9/73, effective 1/1/74.]

WAC 296-17-52701 Classification 0608.

Electrical alarm systems including smoke alarms

Intercom or audio call box

Telecommunication and PBX or similar equipment

Telephone service prewire by contractor

This classification includes installation, service or repair of the above types of equipment and includes all shop or yard operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-52701, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-52701, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-52701, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-52701, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-52701, filed 2/28/85, effective 4/1/85.]

WAC 296-17-528 Classification 0701.

Dam construction, all operations in damsite area

This classification applies to new dam construction only - all other activities to be separately rated.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-528, filed 5/30/94, effective 6/30/94. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-528, filed 11/27/85, effective 1/1/86; Order 76-36, § 296-17-528, filed 11/30/76; Order 73-22, § 296-17-528, filed 11/9/73, effective 1/1/74.]

WAC 296-17-529 Classification 0803.

Cities and towns, excluding municipal power and transit systems, law enforcement officers and fire fighters

This classification excludes clerical office, sales personnel and white collar employees rated under risk classification 5305 (WAC 296-17-678).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-529, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-529, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-529, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-529, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-529, filed 12/1/77; Order 75-38, § 296-17-529, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-529, filed 11/9/73, effective 1/1/74.]

WAC 296-17-530 Classification 0804.

Commercial production of sand, gravel and processing clay and stone products including rock crushing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-530, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-530, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-530, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-530, filed 11/9/73, effective 1/1/74.]

WAC 296-17-532 Classification 0901.

Ship building or repair, N.O.C., all types - including dismantling of ship hulls

This classification includes all shop and yard operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-532, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-532, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-532, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-532, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-532, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-532, filed 11/9/73, effective 1/1/74.]

WAC 296-17-534 Classification 1002.

Mills: Shake and shingle - automated processes

For purposes of this subclassification, automated processes refers to shake and shingle mills equipped with automatic feeders on all saws, adjustable packing and cutting stations, and fully automatic systems for conveying

material to work stations. All equipment must be equipped with automatic shut off switches. Within a shingle mill the operation of a trim saw must be performed by an individual as a separate function from that of the shingle saw operator (shingle sawyer is not to perform both functions). Shake splitters must be equipped with a gauge control mechanism which permits the operator to automatically set the thickness of the cut. Conveyor systems must have dual controls to allow the deckman and sawyer the ability to control incoming material to the work station.

Block mills must be equipped with an automated pallet dump to eliminate the handling of material to the sawyer work station or an adjustable scissor lift adjacent to the shingle saw or shake splitter. Blocked wood purchased by mills must be contained in pallets prior to entering the mill yard or premises. Log mills must be equipped with a fully mechanized log slip (used to move logs into the deck area), log levelers, stabilizers, and lifters must be present in the deck area, automatic deck cut-off saw, live deck for moving material from the deck to the splitting area and overhead mounted splitters. Trim saws, also referred to as clipper saws, must be equipped with a laser guide or quartz light. This lighting reveals to the operator where its saw blade is in relationship to the material being processed.

For purposes of this subclassification, the following terms or words shall be given the meanings below:

Automatic deck or cut-off saw - A large saw, usually circular, used to trim logs to a specified length (rounds) before they enter a manufacturing plant.

Clipper saw - A machine used to make shingle edges parallel.

Shingle - Roofing or siding material having sawn faces and backs, are of a standard thickness at the butt end and tapered finish at the other end.

Shake - Roofing or siding material having at least one surface with a natural grain textured split surface.

Live deck - A chain driven platform located in the same proximity as the deck saw and is used to convey cut rounds from the cutting area to the splitting area.

Log stabilizer - A levered device adjacent to the deck saw used to hold the log steady while it is being cut.

Log slip - A chain driven conveyor used to move logs into the deck area.

Laser or quartz guide light - An overhead mounted light above a saw that illuminates that portion of a work surface where the saw blade will pass or make a cut.

Log leveler - A levered device adjacent to the deck saw used to level a log automatically.

Overhead splitter - A ceiling mounted hydraulic, air or electrically operated apparatus with wedge shaped end that is used to split log rounds into block wood when activated by the splitterman.

Shingle saw - A machine used to make shingles.

Shake splitter - A machine used to split blocks into shake blanks.

Shake saw - A machine used to saw shake blanks into a finished wedged shape product.

Shake and shingle mills not meeting all the conditions as set forth above shall be separately classified in classification 1005 "Shake and shingle mills, N.O.C."

Sawmills, operation and maintenance

This subclassification excludes operations conducted in the woods rated under risk classification 5001 (WAC 296-17-659) logging, N.O.C.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-01-013 (Order 89-21), § 296-17-534, filed 12/8/89, effective 1/8/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-534, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-534, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-534, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-534, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-534, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-534, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-534, filed 11/30/76; Order 73-22, § 296-17-534, filed 11/9/73, effective 1/1/74.]

WAC 296-17-535 Classification 1003.

Creosote works, pile and pole treating - yard operations only

Pole yard

Masts and spars yards.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-535, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-535, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-535, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-535, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-535, filed 11/9/73, effective 1/1/74.]

WAC 296-17-53501 Classification 1004.

Log storage and log sorting yards independent from logging operations rated under risk classification 5001 (WAC 296-17-659)

This classification does not include any log trucking operations that are outside of the log storage and log sorting yards.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53501, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-53501, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-53501, filed 11/13/80, effective 1/1/81.]

WAC 296-17-53502 Classification 1005.

Shingle mills, operations and maintenance

Shake mills, operations and maintenance

This classification excludes operations conducted in the woods rated under risk classification 5001 (WAC 296-17-659) logging, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53502, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-53502, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-53502, filed 11/30/81, effective 1/1/82.]

WAC 296-17-53504 Classification 1007.

Foresters, forest rangers and timber cruisers

Geophysical exploration, N.O.C., no core drilling

Inspection and grading bureaus, N.O.C.

Log scaling and grading bureaus

Lumber inspection services

Prospectors

Rainmaking - not by aircraft

Surveyor services, N.O.C.

Testing and inspecting of pipe lines - radiographers

Weather stations

Weigh scale attendants, N.O.C.

X-raying by contractor at industrial plants or construction sites

Classification 1007, classification 5001, and classification 5004 shall not be assigned to the same risk unless the operations described by these classifications are conducted as separate and distinct businesses and each business has separate and distinct employees.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-53504, filed 5/30/94, effective 6/30/94; 93-12-093, § 296-17-53504, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53504, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-53504, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-53504, filed 11/29/82, effective 1/1/83.]

WAC 296-17-536 Classification 1101.

Armored car service

Automobile delivery drive away, automobile repossessing

Computer tape/accounting records delivery service

Delivery by retail, wholesale, combined wholesale and retail stores and distributors, N.O.C.

Delivery companies, deliver parcels and packages, no bulk merchandise

Distribution of sample merchandise by vehicle

Driver delivery sales, N.O.C.

Drivers of sound trucks

News agents or distributors of magazines, periodicals and telephone books, no retail dealer

Route food services, excludes food preparation to be reported under risk classification 3905 (WAC 296-17-618)

Septic tank pumping, excludes installation, repair or cleaning

Street sweeping, parking lot sweeping, portable chemical toilets servicing

Street vending vehicles.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-536, filed 5/30/94, effective 6/30/94; 89-24-051 (Order 89-22), § 296-17-536, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-536, filed 5/31/88, effective 7/1/88; 86-12-041 (Order 86-18), § 296-17-536, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-536, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-536, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-536, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-536, filed 11/30/81, effective 1/1/82; Order 77-27, § 296-17-536, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-536, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-536, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-536, filed 11/9/73, effective 1/1/74.]

WAC 296-17-537 Classification 1102.

Interstate and intrastate trucking including transport companies, express companies, freight hauling and trucking, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-537, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-537, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-537, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-537, filed 11/9/73, effective 1/1/74.]

WAC 296-17-538 Classification 1103.

Coal merchants, solid fuel yards, firewood dealers, excludes operations subject to risk classification 1004 (WAC 296-17-53501), risk classification 1702 (WAC 296-17-549), risk classification 1703 (WAC 296-17-550), risk classification 5001 (WAC 296-17-659).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-538, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-538, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-538, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-538, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-538, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-538, filed 11/9/73, effective 1/1/74.]

WAC 296-17-53801 Classification 1104.

Automobile or truck wrecking or dismantling

This classification includes over the counter sales of new or used parts and tow truck operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53801, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53801, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-53801, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-53801, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53803 Classification 1106.

Rental stores N.O.C.

This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53803, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53803, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-53803, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-53803, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53805 Classification 1108.

Auto glass merchants

Glass merchants - including bending, grinding, beveling, silvering or tempering of plate or sheet glass

Report installation of glass, mirrors, aluminum or wood window sashes or similar products away from the shop in risk classification 0511 (WAC 296-17-52103).

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-53805, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-53805, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53805, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-53805, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53806 Classification 1109.

Auto or truck towing companies.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-53806, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-53806, filed 11/27/85, effective 1/1/86.]

WAC 296-17-539 Classification 1301.

Bridge tenders, electrically operated bridges, vehicular tunnels operation

Electric light and power cooperatives

Electric light and power plants, cities, towns and counties

Electric light and power public utility districts

Electric systems, N.O.C.

Steam heat and power plants

This classification includes extension of lines and meter readers when done by employees of employers having operations subject to this classification

This classification excludes contractors engaged in underground line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); con-

tractors engaged in overhead line construction, maintenance or repair subject to risk classification 0509 (WAC 296-17-52101); and contractors engaged in wiring within buildings subject to risk classification 0601 (WAC 296-17-522).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-539, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-539, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-539, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-539, filed 11/9/73, effective 1/1/74.]

WAC 296-17-540 Classification 1303.

Telegraph companies, all other employees, operation and maintenance, extension of lines

Telephone companies, all other employees, operation and maintenance, extension of lines

This classification includes new construction and extension of lines when done by employees of employers having operations subject to this classification

This classification excludes contractors engaged in underground line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); contractors engaged in overhead line construction, maintenance or repair subject to risk classification 0509 (WAC 296-17-52101); and contractors engaged in wiring within buildings subject to risk classification 0608 (WAC 296-17-52701).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-540, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-540, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-540, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-540, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-540, filed 11/9/73, effective 1/1/74.]

WAC 296-17-541 Classification 1304.

Telephone companies, exchange operators, clerical office and sales personnel

Telegraph companies, clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-541, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-541, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-541, filed 11/9/73, effective 1/1/74.]

WAC 296-17-54101 Classification 1305.

Television cable companies, operation and maintenance, extension of lines all outside employments

This classification includes new construction and extension of lines when done by employees of employers having operations subject to this classification

This classification excludes contractors engaged in underground line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); contractors engaged in overhead line construction, maintenance or repair subject to risk classification 0509 (WAC 296-17-52101); and contractors engaged in wiring within buildings and telecable hookups within buildings subject to risk classification 0601 (WAC 296-17-522).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-54101, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-54101, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-54101, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-54101, filed 11/29/82, effective 1/1/83.]

WAC 296-17-542 Classification 1401.

Taxicab companies.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-542, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-542, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-542, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-542, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-542, filed 11/9/73, effective 1/1/74.]

WAC 296-17-544 Classification 1404.

Bus companies, transit systems, contract bus driving

Equipment escort and pilot car service

Vessels, ferries, tugs and steamboats operation, N.O.C. including dock employees - excluding maritime.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-544, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-544, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-544, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-544, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-544, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-544, filed 11/9/73, effective 1/1/74.]

WAC 296-17-54401 Classification 1405.

Ambulance services including mobile medic and patient transport services.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-54401, filed 5/29/87, effective 7/1/87.]

WAC 296-17-545 Classification 1501.

Counties and taxing districts, N.O.C., all other employees

Housing authorities, local public, all other employees including meter readers

Indian tribal councils, all other employees

This classification excludes public utility districts subject to risk classification 1301 (WAC 296-17-539) and 1507 (WAC 296-17-546); bus or transit services subject to risk classification 1404; port districts subject to risk classification 4201 (WAC 296-17-629); library districts, museum districts and school districts subject to risk classifications 6103 (WAC 296-17-680) and 6104 (WAC 296-17-681); hospital districts subject to risk classification 6105 (WAC 296-17-682); fire fighters subject to risk classification 6904 (WAC 296-17-749); and law enforcement officers subject to risk classification 6905 (WAC 296-17-750)

This classification also excludes clerical office and white collar employees.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-545, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-545, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-545, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-545, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-545, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-545, filed 12/1/77; Order 73-22, § 296-17-545, filed 11/9/73, effective 1/1/74.]

WAC 296-17-546 Classification 1507.

Irrigation ditches, operation, repair and maintenance when done by employees of firms subject to this classification
Waterworks including extension of lines and meter readers when done by employees of employers having operations subject to this classification
This classification excludes contractors engaged in waterline construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); and contractors engaged in ditch or canal construction, maintenance or repair subject to risk classification 0108 (WAC 296-17-50602).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-546, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-546, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-546, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-546, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-546, filed 11/9/73, effective 1/1/74.]

WAC 296-17-548 Classification 1701.

Ore reduction, by wet or dry process without application of heat at mine.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-548, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-548, filed 11/9/73, effective 1/1/74.]

WAC 296-17-549 Classification 1702.

Coal mines, underground
Coke ovens
Mines, N.O.C., underground.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-549, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-549, filed 2/28/85, effective 4/1/85; Order 75-38, § 296-17-549, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-549, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-549, filed 11/9/73, effective 1/1/74.]

WAC 296-17-550 Classification 1703.

Open cut mining, all types
Placer or hydraulic mining.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-550, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-550, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-550, filed 11/9/73, effective 1/1/74.]

WAC 296-17-551 Classification 1704.

Quarries, N.O.C., includes stone crushing at quarry site
Stone cutting, quarry hazard.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-551, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-551, filed 11/9/73, effective 1/1/74.]

WAC 296-17-552 Classification 1801.

Blast furnace operation
Lead manufacturing - red or white
Lead works - sheet, tinfoil manufacturing
Recovering, refining, or reprocessing metals
Rolling mills steel or iron, rolling mills, N.O.C.
Smelting, sintering or refining lead, manufacturing calcium carbide
Smelting, sintering or refining ores, N.O.C.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-552, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-552, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-552, filed 11/9/73, effective 1/1/74.]

WAC 296-17-55201 Classification 1802.

Aluminum smelting: Primary smelting of aluminum from alumina using an electrolytic reduction process.
This classification includes the alloying and casting of sheet ingots, T-ingots, rolling ingots, notched ingots, sows, pigs, extrusion logs, extrusion billets, and other primary production shapes when performed by a primary producer subject to this classification.
This classification excludes secondary processors who do not reduce aluminum from alumina, but whose principle business is casting, rolling, extruding, foiling, or recycling aluminum and aluminum alloys from molten aluminum, primary production shapes or used scrap and dross which are reported separately in risk classification 1801.

[Statutory Authority: RCW 51.16.035. 88-06-047 (Order 87-33), § 296-17-55201, filed 3/1/88.]

WAC 296-17-555 Classification 2002.

Freight handler services - packing, handling or shipping merchandise N.O.C.
Refrigeration car - loading, unloading or icing
This classification also includes employees engaged in repackaging of goods from damaged containers.
This classification excludes drivers or other employees with driving duties which are to be reported separately under risk classification 1102 without a division of work hours.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-555, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-555, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-555, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-555, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-555, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-555, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-555, filed 11/9/73, effective 1/1/74.]

WAC 296-17-556 Classification 2003.

Hide or leather dealers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-556, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-556, filed 11/9/73, effective 1/1/74.]

WAC 296-17-557 Classification 2004.

Iron or steel merchants, not junk or scrap dealers
This classification also includes wire rope and cable dealers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-557, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-557, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-557, filed 11/9/73, effective 1/1/74.]

WAC 296-17-560 Classification 2007.

Grain elevator or warehouse
Bean or pea elevator or warehouse.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-560, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-560, filed 11/24/75, effective 1/1/76; 73-22, § 296-17-560, filed 11/9/73, effective 1/1/74.]

WAC 296-17-561 Classification 2008.

Warehouses-field bonded, including clerical office at such location

This classification excludes drivers which are to be separately rated under risk classification 1102 (WAC 296-17-537).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-561, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-561, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-561, filed 11/9/73, effective 1/1/74.]

WAC 296-17-56101 Classification 2009.

Building material dealers, warehouse centers, home improvement centers, and lumber yards

Electrical supply dealers

Farm supply stores

Hardware stores with lumber or building material supplies

Pump, plumbing, irrigation pipe, and pipe supply dealers: Includes pump repair if done in shop

For the purposes of this rule the term "building materials" includes but is not limited to such items as wallboard, roofing, insulation, sheet metal, bricks, blocks, windows, etc.

This classification includes all store and yard operations with inventory of building material, lumber and lumber products. Such stores may also carry a variety of hardware items, hand and power tools, paints, floor coverings, garden supplies, housewares, and similar types of products. Transfer of product or material inventory between related stores is included within this classification

This classification excludes delivery drivers which are to be separately rated under risk classification 1101 "Delivery-stores: Retail/wholesale." This classification further excludes all other activities conducted away from the shop or plant operation.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-56101, filed 5/30/94, effective 6/30/94; 93-12-093, § 296-17-56101, filed 5/31/93, effective 7/1/93.]

WAC 296-17-562 Classification 2101.

Grain milling, feed mills, feed manufacture - including preparation of cereal or compound feeds for livestock

Flour mills

Hay, grain or feed dealers

Seed merchants including operation of seed sorting machinery.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-562, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-562, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-562, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-562, filed 11/9/73, effective 1/1/74.]

WAC 296-17-563 Classification 2102.

Grocery, fruit or produce distributors, wholesale or combined wholesale and retail. Drivers will be separately rated under risk classification 1101 (WAC 296-17-536) delivery by combined wholesale and retail stores

Recycle, collection and receiving stations, and dealers of rags, bottles, paper and metal containers, N.O.C., no junk dealers. Drivers will be separately rated under risk classification 1102 (WAC 296-17-537) trucking, N.O.C.

Warehouses - general merchandise. Wholesale dealers to be separately rated. Drivers will be separately rated under risk classification 1102 (WAC 296-17-537) trucking, N.O.C.

Wool or cotton merchants. Drivers will be separately rated under risk classification 1102 (WAC 296-17-537) trucking, N.O.C.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-563, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-563, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-563, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-563, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-563, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-563, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-563, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-563, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-563, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-563, filed 11/9/73, effective 1/1/74.]

WAC 296-17-564 Classification 2104.

Fruit packing - fresh

Vegetable packing - fresh

This classification includes cold storage operations if it is conducted as a part of packing operations; if a separate distinct operation or business exists, it is to be separately rated

This classification excludes all canning or freezing operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-564, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-564, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-564, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-564, filed 11/9/73, effective 1/1/74.]

WAC 296-17-56401 Classification 2105.

Beer, ale, wine or soft drink importers, exporters and distributors, wholesale or combined wholesale and retail

This classification is not to be assigned if a business operation is already assigned to report operations subject to risk classification 3702 (WAC 296-17-600).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-56401, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-56401, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-56401, filed 11/30/81, effective 1/1/82.]

WAC 296-17-56402 Classification 2106.

Anhydrous ammonia, fertilizer, and agricultural chemical dealers including mixing of chemicals.

This classification does not apply to the production of raw materials for use in the manufacture of the above products.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-56402, filed 5/31/88, effective 7/1/88.]

WAC 296-17-565 Classification 2201.

Laundries and dry cleaning establishments all operations including drop off stations operated by such establishments
Cleaning and dyeing
This classification is limited to establishments providing services primarily to retail walk-in customers.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-565, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-565, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-565, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-565, filed 11/9/73, effective 1/1/74.]

WAC 296-17-566 Classification 2202.

Carpet, rug and upholstery cleaning, shop or outside.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-566, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-566, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-566, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-566, filed 11/9/73, effective 1/1/74.]

WAC 296-17-56601 Classification 2203.

Laundries - commercial or industrial, N.O.C., including linen, uniform and diaper service.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-56601, filed 5/29/87, effective 7/1/87.]

WAC 296-17-567 Classification 2401.

Building and roofing paper including felt: Manufacturing
Corrugated and fiber board container: Manufacturing, including corrugating and laminating of paper
Paper: Coating, corrugating, laminating or oiling
Paper goods: Manufacturing, N.O.C., such as but not limited to counter tops, panels, spiral tubes, milk cartons, and paper-mache items
Paper or pulp: Manufacturing
Wood fiber: Manufacturing.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-567, filed 5/31/91, effective 7/1/91; 89-24-051 (Order 89-22), § 296-17-567, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-567, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-567, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-567, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-567, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-567, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-567, filed 11/9/73, effective 1/1/74.]

WAC 296-17-568 Classification 2903.

Boat: Manufacturing, repair, or refinish - wood
Box, shook, pallet, bin: Manufacturing, assembly or repair - wood - including assembly work performed at the customer's place of business
Door, jamb, window, sash, stair, molding and miscellaneous millwork manufacturing, prehanging or assembly - wood
Furniture stock manufacturing - wood
Lumber remanufacturing
Sign manufacturing - wood
Truss manufacturing - wood
Veneer products manufacturing
Wood chip, hog fuel, bark, bark flour, presto log and lath manufacturing
Wood products manufacturing or assembly N.O.C.
Sawmill operations to be reported separately under risk classification 1002. Veneer manufacturing to be reported separately under risk classification 2904
Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all installation activities away from the shop or plant.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-568, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-568, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-568, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-568, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-568, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-568, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-568, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-568, filed 11/30/76; Order 75-38, § 296-17-568, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-568, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-568, filed 11/9/73, effective 1/1/74.]

WAC 296-17-569 Classification 2904.

Plywood manufacturing
Veneer, commercial production
This classification includes all types of veneer production.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-569, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-569, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-569, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-569, filed 11/9/73, effective 1/1/74.]

WAC 296-17-56901 Classification 2905.

Furniture and casket manufacturing or assembly - wood
Furniture refinishing including repair - wood
Furniture refinishing with no repair work is to be reported separately under risk classification 3603
Physically separated upholstery departments of firms engaged in furniture or casket manufacturing, assembly or finishing may be reported separately under risk classification 3808, and in accordance with WAC 296-17-410
Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all installation activities away from the shop or plant.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-56901, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-56901, filed 5/29/87, effective 7/1/87.]

WAC 296-17-570 Classification 2906.

Pattern or model manufacturing, metal, plastic or wood
Piano or musical instrument manufacturing, not metal.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-570, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-570, filed 11/9/73, effective 1/1/74.]

WAC 296-17-57001 Classification 2907.

Cabinet, countertop, and fixture: Manufacturing, modifying or assembly - wood

Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all installation activities away from the shop or plant.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-57001, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-57001, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-57001, filed 5/29/87, effective 7/1/87.]

WAC 296-17-57002 Classification 2908.

Truck canopy: Manufacturing metal or wood - shop only

Housing - residential type: Factory-built - shop only

Mobile homes, campers and travel trailers: Manufacturing - shop only

This classification excludes fiberglass canopy manufacturing which is to be reported separately in classification 3511.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-57002, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-57002, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-57002, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-57002, filed 11/29/82, effective 1/1/83.]

WAC 296-17-57003 Classification 2909.

Woodenware: Household and sporting goods manufacturing or assembly, N.O.C.

This classification excludes wood products manufacturing or assembly reported under risk classifications 2903, 2905, and 2907

Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all installation activities away from the shop or plant.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-57003, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-57003, filed 5/29/87, effective 7/1/87.]

WAC 296-17-571 Classification 3101.

Ready mix concrete dealers

This classification to include any miscellaneous operations made up of tools, equipment and building materials sales which is less than twenty-five percent of the dollar volume of ready mix concrete sales.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-571, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-571, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-571, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-571, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-571, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-571, filed 11/9/73, effective 1/1/74.]

WAC 296-17-572 Classification 3102.

Rock wool insulation: Manufacturing - digging or quarrying to be separately rated.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-572, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-572, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-572, filed 11/9/73, effective 1/1/74.]

WAC 296-17-573 Classification 3103.

Cement manufacturing, lime manufacturing

Lightweight aggregate building or insulation material manufacturing

Perlite, pozzolan, magnesite or expanded shale aggregate manufacturing

Digging or quarrying to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-573, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-573, filed 11/9/73, effective 1/1/74.]

WAC 296-17-574 Classification 3104.

Plaster mills and whiting manufacturing, quarrying to be separately rated

Talc mills and emery works

Asbestos products manufacturing, including spinning or weaving, mica goods manufacturing

Soapstone or soapstone products manufacturing, marble cutting and polishing, slate milling

Stone cutting or polishing, N.O.C., away from quarry

Plasterboard or plaster block manufacturing

Coating of building materials, N.O.C. - shop operations

Monument dealers who do stonecutting, engraving or sandblasting.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-574, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-574, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-574, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-574, filed 11/30/76; Order 73-22, § 296-17-574, filed 11/9/73, effective 1/1/74.]

WAC 296-17-575 Classification 3105.

Concrete blocks, bricks, poles, piles, tile and beam manufacturing

Concrete sewer and irrigation pipes, concrete septic tanks and concrete products, N.O.C. manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-575, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-575, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-575, filed 11/9/73, effective 1/1/74.]

WAC 296-17-57602 Classification 3303.

Meat, fish and poultry dealers, retail

This classification is limited to employers engaged in selling fresh meats, fish and poultry over the counter, by the pound to a retail consumer and who maintain show cases displaying fresh cuts of meat, fish and poultry available for sale by the pound to such consumers

This classification excludes custom meat cutting facilities which are subject to risk classification 4302 and wholesale meat dealers subject to risk classification 3304.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-57602, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-57602, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-57602, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-57602, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-57602, filed 11/27/78, effective 1/1/79.]

WAC 296-17-57603 Classification 3304.

Fish processors, packers and repackagers: Wholesale or combined wholesale/retail - excluding cold storage or locker operations when conducted as a separate and distinct business operation

Meat and/or poultry dealers: Wholesale or combined wholesale/retail - excluding slaughter or packing house operations which are to be reported separately in risk classification 4301 and cold storage or locker operations which are to be reported separately when conducted as a separate and distinct business operation.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-57603, filed 12/1/89, effective 1/1/90.]

WAC 296-17-578 Classification 3309.

Motorcycle, moped, motor scooter, snowmobile, jet ski, go-carts, golf cars, all-terrain vehicles, or other similar motorized vehicles sales and rental agencies including parts and service departments.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-578, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-578, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-578, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-578, filed 11/9/73, effective 1/1/74.]

WAC 296-17-579 Classification 3401.

Automobile, truck, body and fender repair shops, including painting and incidental upholstery and glass repair

Automobile, truck, motor home, mobile home, camper, and trailer sales and/or rental agency - including parts departments, repair shops, and canopy sales. Includes canopy installation by dealers subject to this subclassification. This subclassification also includes passenger shuttle services done in connection with rental or repair services

Automobile or truck: Repair shops or garages - including parts departments

Automobile or truck service specialty shops - including sales, installation and repair of air conditioning systems, electrical systems, cruise controls, mufflers, and sun roofs

Boat dealers - including repair shops and parts departments

Marinas and boat house operations - including repair shops and parts departments

Motor home - service and repair shops including parts departments

This classification will include mobile home delivery and set-up when done by employees of the mobile home sales agency.

Contractors doing set-up and delivery of mobile homes who are not employees of the mobile home sales agency will be rated under risk classification 0517 (WAC 296-17-52109).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-579, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-579, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-579, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-579, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-579, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-579, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-579, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-579, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-579, filed 11/9/73, effective 1/1/74.]

WAC 296-17-580 Classification 3402.

Abrasive wheel manufacturing

Air compressor manufacturing or assembly, elevator manufacturing, gear grinding or manufacturing

Automobile or truck, radiator and heater core manufacturing and repair shops

Auto body manufacturing - truck, trailer, bus body manufacturing, travel trailer body repair

Auto or motorcycle manufacturing or assembly

Auto or truck engine manufacturing, aircraft engine manufacturing or rebuild, N.O.C.

Auto or truck parts, machining or rebuild not in vehicle

Battery manufacturing, assembly and repair: Storage type

Bed spring or wire mattress manufacturing

Confectioners machinery manufacturing or assembly, food processing machinery manufacturing or assembly, precision machined parts, N.O.C., manufacturing

Coppersmithing, shop

Die castings manufacturing

Furnace, heater or radiator manufacturing

Heat treating metal

Lead burning, metal spraying - copper

Machinery manufacturing or assembly, N.O.C.

Machine shops, N.O.C., including mobile shops, tool sharpening and marine engine repair

Nut, bolt, screw, nail, tack, rivet, eyelet, spike and needle manufacturing, N.O.C.

Office machinery manufacturing or assembly, N.O.C., cash register and sewing machine manufacturing or assembly

Photo processing machinery manufacturing or assembly

Power saw, lawn and garden equipment and small motor repair, N.O.C.

Printing or bookbinding machinery manufacturing or assembly

Pump manufacturing or assembly, safe manufacturing or assembly, scale manufacturing or assembly including repair, auto jack manufacturing or assembly, water meter manufacturing or assembly including repair

Saw manufacturing or assembly

Sewing machine, commercial - repair and rebuild

Shoe machinery manufacturing or assembly, sprinkler head manufacturing or assembly, textile machinery manufacturing or assembly

Small arms, speedometer and carburetor manufacturing or assembly including rebuild

Tool manufacturing, machine finishing

Tool manufacturing, not hot forming or stamping, die manufacturing - ferrous
Valve manufacturing
Welding or cutting, N.O.C. including mobile operations
Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all activities away from the shop or plant
This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations rated within this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-580, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-580, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-580, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-580, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-580, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-580, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-580, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-580, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-580, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-580, filed 11/30/76; Order 75-38, § 296-17-580, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-580, filed 11/9/73, effective 1/1/74.]

WAC 296-17-581 Classification 3403.

Aircraft manufacturing
For the purposes of this rule aircraft manufacturing means the original manufacture of such aircraft as distinguished from rebuilding, modifying, or converting existing aircraft and only applies to the production of units when completed that are capable of in-air flight as distinguished from aircraft kits to be assembled by the purchaser and are not capable of air flight when sold
This classification includes clerical office and sales personnel and aircraft operations incidental to the manufacture such as test flights.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-581, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-581, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-581, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-581, filed 11/27/78, effective 1/1/79; Order 73-22, § 296-17-581, filed 11/9/73, effective 1/1/74.]

WAC 296-17-582 Classification 3404.

Aluminum ware manufacturing - from sheet aluminum
Auto or truck parts manufacturing or assembly N.O.C. - miscellaneous stamped parts
Awning manufacturing or assembly - metal
Brass or copper goods manufacturing
Cans manufacturing - aluminum or galvanized
Coffin-casket manufacturing or assembly, other than wood
Electric or gas lighting fixtures, lampshades or lantern manufacturing or assembly - metal
Furniture, shower-door, showcases - not wood - manufacturing or assembly
Galvanized iron works, manufacturing - not structural
Hardware manufacturing, N.O.C.
Metal goods manufacturing, N.O.C., from material lighter than 9 gauge
Metal stamping, including plating and polishing
Sign manufacturing - metal
Ski manufacturing and toboggan manufacturing other than wood
Stove manufacturing, excluding wood stove manufacturing and other stoves made from material 9 gauge or heavier rated under risk classification 5209 (WAC 296-17-67602)
Water heater manufacturing or assembly
Window, sash or door manufacturing or assembly - aluminum
Physically separate upholstery departments of firms engaged in furniture, coffin or casket manufacturing, assembly, or finishing may be separately rated under risk classification 3808 (WAC 296-17-612), and in accordance with WAC 296-17-410
Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all activities away from the shop or plant
This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations rated in this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-582, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-582, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-582, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-582, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-582, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-582, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-582, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-582, filed 11/13/80, effective 1/1/81; Order 75-38, § 296-17-582, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-582, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58201 Classification 3405.

Aircraft parts manufacturing, N.O.C.
For the purpose of this rule; aircraft parts means the component parts making the aircraft operative and becoming part of the aircraft when being manufactured by the aircraft manufacturing company
Provided that this classification will not be assigned to an employer who has operations rated in risk classification 3402 (WAC 296-17-580); risk classification 3404 (WAC 296-17-582); risk classification 3510 (WAC 296-17-59202); 3511 (WAC 296-17-55203); 3512 (WAC 296-17-59204); or risk classification 5201 (WAC 296-17-670) unless such operations are conducted as a distinct and separate business undertaking and rated in accordance with WAC 296-17-390
This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-58201, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-58201, filed 11/27/85,

effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-58201, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-58201, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-58201, filed 11/27/78, effective 1/1/79.]

WAC 296-17-583 Classification 3406.

Automobile or truck car washes
Automobile or truck gas service stations, N.O.C.
Automobile or truck storage garages - no repair
This classification includes cashiers who receive payments from customers and excludes portable automobile or truck car washes subject to risk classification 6602 (WAC 296-17-724).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-583, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-583, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-583, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-583, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-583, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-583, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-583, filed 11/9/73, effective 1/1/74.]

WAC 296-17-584 Classification 3407.

Asphalt, bitumen dealers
Asphalt or tar, distilling or refining
Asphalt paving material - manufacturing
Asphalt roofing material - manufacturing
Gas dealers, liquified petroleum gas, gas works, all operations
Gas or oil dealers, wholesale or retail, including fuel oil, propane or butane
Gasohol distilling or refining
Gasoline recovery from casing head or natural gas
Oil or gas lease work, N.O.C. - by contractors - not lease operation
Oil or gas pipe line operation
Oil or gas wells - cementing
Oil or gas wells - installation or recovery of casing
Oil or gas wells - specialty tool operation, N.O.C., by contractor
Oil refining-petroleum, including manufacturing of products obtained therefrom
Oil wells operation - oil or gas lease operators
Synthetic rubber manufacturing.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-584, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-584, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-584, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-584, filed 11/9/73, effective 1/1/74.]

WAC 296-17-585 Classification 3408.

Gas companies - natural gas including clerical office and sales personnel
This classification includes new construction and extension of lines when done by employees of employers having operations subject to this classification
This classification excludes contractors engaged in gas line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-585, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-585, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-585, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-585, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58501 Classification 3409.

Self service gas stations
This classification applies to service stations that are completely self service with no employees performing a direct service of any kind to customer's vehicle. Service stations providing direct services of any kind to a customers vehicle will be rated under risk classification 3406 (WAC 296-17-583) even though such establishments may also have self service gas facilities.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-58501, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-58501, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-58501, filed 11/30/79, effective 1/1/80.]

WAC 296-17-58502 Classification 3410.

Convenient grocery stores or mini markets with self-service gasoline operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-58502, filed 5/31/93, effective 7/1/93.]

WAC 296-17-586 Classification 3501.

Brick or clay products manufacturing, N.O.C.
Refractory products, fireproofing tile, flue lining and roofing tile manufacturing
Sewer tile, drainage tile and tile, N.O.C., manufacturing
Fireclay products manufacturing, foundry crucible
Briquettes manufacturing, peat fuel manufacturing
This classification does not apply to the production of raw materials for use in the manufacture of the above articles.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-586, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-586, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-586, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-586, filed 11/9/73, effective 1/1/74.]

WAC 296-17-587 Classification 3503.

Potteries, glazed or porcelain, earthenware manufacturing
Chinaware, tableware, decorative or architectural terra cotta manufacturing
Decorative tile, clay tobacco pipes, manufacturing
Glassware manufacturing, N.O.C. including stained or leaded glassware manufacturing
Glass manufacturing, N.O.C.
Agate or enamel ware manufacturing
This classification does not apply to the production of raw materials for use in the manufacturing of the above articles.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-587, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-587, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-587, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-587, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-587, filed 11/9/73, effective 1/1/74.]

WAC 296-17-590 Classification 3506.

Crane, hoisting service and rigging contractors. This classification excludes operations incidental to risk classifications 0201 (WAC 296-17-508), 0202 (WAC 296-17-509), 0506 (WAC 296-17-52001), 0507 (WAC 296-17-52002), 0508 (WAC 296-17-521), 0509 (WAC 296-17-52101), 0510 (WAC 296-17-52102), 0518 (WAC 296-17-52110), 0604 (WAC 296-17-525), 0701 (WAC 296-17-528) and 5001 (WAC 296-17-659).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-590, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-590, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-590, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-590, filed 11/9/73, effective 1/1/74.]

WAC 296-17-59201 Classification 3509.

Glass frosting, etching, beveling including cutting
Plaster statuary or ornament manufacturing.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-59201, filed 12/1/89, effective 1/1/90.]

WAC 296-17-59202 Classification 3510.

Artificial marble: Manufacturing
Plastic goods: Manufacturing - blow molding, extrusion vacuum forming, foam molding, rotary molding, liquid molding, and injection molding
Plastic goods: Manufacturing, N.O.C.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-59202, filed 5/31/91, effective 7/1/91; 90-13-018, § 296-17-59202, filed 6/8/90, effective 7/9/90.]

WAC 296-17-59203 Classification 3511.

Fiberglass goods: Manufacturing, N.O.C.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-59203, filed 5/31/91, effective 7/1/91.]

WAC 296-17-59204 Classification 3512.

Plastic goods: Manufacturing - cutting, milling or bending.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-59204, filed 5/31/91, effective 7/1/91.]

WAC 296-17-594 Classification 3602.

Camera manufacturing or assembly including repair in shop
Dental laboratories
Electric cordset radio and ignition assembly
Electronic circuit board assembly, N.O.C.
Electronic products manufacturing; resistors, capacitors, chip and relays manufacturing
Fishing tackle manufacturing, N.O.C., including assembly
Incandescent lamp manufacturing, electric tube or transistor manufacturing
Instrument manufacturing, scientific, medical or professional
Jewelry manufacturing or engraving
Magnetic tape manufacturing
Motion picture projectors manufacturing or assembly including repair in shop
Musical instrument repair - metal
Silverware manufacturing, watch case manufacturing
Sound recording equipment, thermometer and steam gauge manufacturing
Stereo components manufacturing or assembly
Tag, button, zipper or fastener manufacturing, bottle cap manufacturing
Telegraph or radio apparatus manufacturing, N.O.C.
Telephone set manufacturing or repair, N.O.C.
Trophy engraving
Watch manufacturing
This is a shop or plant only classification although the classification allows for repair work when specified it is contemplated that such repairs are limited to those brought into the shop by the customer or sent through a common carrier. This classification excludes all outside repair work
This classification does not apply to the production of raw material for use in the manufacturing of the above articles.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-594, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-594, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-594, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-594, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-594, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-594, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-594, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-594, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-594, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-594, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-594, filed 11/9/73, effective 1/1/74.]

WAC 296-17-595 Classification 3603.

Furniture stripping and refinishing
Metal plating or polishing, rustproofing - acid bath, N.O.C.
Painting in shop, N.O.C.
Electroplating and detinning, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-595, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-595, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-595, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-595, filed 11/9/73, effective 1/1/74.]

WAC 296-17-596 Classification 3604.

Galvanizing or tinning - not electrolytic, N.O.C.
Retinning, rustproofing - galvanizing or hot bath, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-596, filed 11/27/85, effective 1/1/86; 81-24-042 (Order 81-30), § 296-17-596, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-596, filed 11/9/73, effective 1/1/74.]

WAC 296-17-597 Classification 3605.

Truck manufacturing or assembling.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-597, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-597, filed 11/9/73, effective 1/1/74.]

WAC 296-17-599 Classification 3701.

Ammonia, nitrogen and ammonium nitrate manufacturing
Nitrate recovery from x-ray and photo films
Manufacturing dye and chemicals for tinting candles

Chemical manufacturing, N.O.C., by nitration, alkylation, oxidation, etc. process. This classification includes the manufacturing of chemicals involving, but not limited to, the following chemical processes: Nitration, alkylation, distillation, reduction, oxidation, sulphonation, compression of gasses, halogenation and amidation
Chemical mixing, blending and repackaging only - no manufacturing of ingredients
Cosmetics manufacturing, no manufacturing of ingredients
Drug, medicine or pharmaceutical preparation manufacturing, no manufacturing of ingredients
Oxygen or hydrogen manufacturing, acetylene gas or carbonic acid gas manufacturing
Alcohol manufacturing, distilling, N.O.C.
Polish, dressing, ink or mucilage manufacturing
Extract manufacturing, including distillation of essential oils
Perfumery manufacturing, including distillation of essential oils
Flavoring manufacturing, including distillation of essential oils
Mint distilling
Salt, borax or potash producing or refining
Serum, anti-toxin or virus manufacturing
Paint, varnish or lacquer manufacturing
Putty manufacturing, synthetic resin manufacturing
Acid manufacturing
Candle, crayon and paste manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-599, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-599, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-599, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-599, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-599, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-599, filed 11/9/73, effective 1/1/74.]

WAC 296-17-600 Classification 3702.

Breweries or malt houses
Bottling - beverages, N.O.C.
Spiritous liquor manufacturing
Wine making
Yeast manufacturing
This classification includes tour guides and tasting room employees.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-600, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-600, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-600, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-600, filed 11/9/73, effective 1/1/74.]

WAC 296-17-604 Classification 3708.

Abrasive cloth preparation
Awning, tent, sail, flag, wind sock or sleeping bag: Manufacturing
Bag or sack - industrial size: Manufacturing or renovating - cotton, burlap, gunny, nylon, or textile
Braid, net, plush and velvet, thread, webbing and yarn: Manufacturing
Broom and brush: Manufacturing or assembly
Carpet or rug: Manufacturing
Cordage, rope or twine: Manufacturing
Cotton batting, wadding or waste: Manufacturing
Cotton cord or cotton twine: Manufacturing
Fire hose: Manufacturing from linen thread
Fishing rod wrappings: Manufacturing
Life preservers and canvas goods: Manufacturing, N.O.C.
Linoleum, oil cloth or imitation leather: Manufacturing
Match: Manufacturing
Mattress or box springs: Manufacturing - no manufacturing wire springs or excelsior
Nylon or synthetic goods: Manufacturing, N.O.C.
Parachutes, suspenders, fur goods and bandages: Manufacturing
Pillow, quilt or cushion: Manufacturing including stuffed animal or doll manufacturing
Spinning or weaving - natural or synthetic fibres, N.O.C.
Taxidermists and hide pelting
Textile: Manufacturing, N.O.C.
Wader, wet suit, and survival suit: Manufacturing
Wool combing or scouring.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-604, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-604, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-604, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-604, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-604, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-604, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-604, filed 11/9/73, effective 1/1/74.]

WAC 296-17-605 Classification 3801.

Belting: Manufacturing - leather
Boot or shoe: Manufacturing or repair, N.O.C.
Gaskets or seals: Manufacturing - leather, rubber, or cork
Glove: Manufacturing - leather
Leather embossing
Leather goods: Manufacturing, N.O.C.
Shoe stock: Manufacturing
Rubber goods: Cutting and/or gluing.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-605, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-605, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-605, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-605, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-605, filed 11/9/73, effective 1/1/74.]

WAC 296-17-606 Classification 3802.

Artificial feather or flower: Manufacturing, N.O.C.
Clothing or cloth goods: Manufacturing, N.O.C.
Cloth printing
Computer covers and accessories: Manufacturing, N.O.C. - cotton, nylon, or other textiles
Dressmaking or tailoring
Fabric: Coating, impregnating or waterproofing, N.O.C.
Gloves: Manufacturing, N.O.C.
Handbags or packs: Manufacturing - cotton, nylon, or other textile
Hosiery: Manufacturing
Lace, embroidery, cloth hats, umbrella and draperies: Manufacturing
Millinery: Manufacturing
Textiles: Bleaching, dyeing, or finishing - new goods, not garments
Wig making.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-606, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-606, filed

5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-606, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-606, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-606, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-606, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-606, filed 11/9/73, effective 1/1/74.]

WAC 296-17-612 Classification 3808.

Upholstery work, N.O.C.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-612, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-612, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-612, filed 2/9/83; Order 75-28, § 296-17-612, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-612, filed 11/9/73, effective 1/1/74.]

WAC 296-17-614 Classification 3901.

Bakeries - retail

This classification applies only to those bakeries that sell products at retail primarily on the premises of the bakery and contemplates minimal delivery of products off premise such as delivery of wedding cakes.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-614, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-614, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-614, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-614, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-614, filed 11/9/73, effective 1/1/74.]

WAC 296-17-615 Classification 3902.

Fruit and vegetable cannery and freezer operations
Fruit and vegetable evaporating, preserving or dehydrating
Fruit syrup manufacturing, fruit juice manufacturing, jam or jelly manufacturing, cider manufacturing
Pea vining
Corn products, chocolate and cocoa manufacturing
Baking powder, dextrine, glucose, and starch manufacturing
Nut shelling, egg breaking, coconut shredding and peanut handling
Food sundries manufacturing and food processing, N.O.C.
Peanut butter, honey, mayonnaise and instant potato manufacturing
Pickle manufacturing, sauerkraut manufacturing
Pet food manufacturing
Butter substitutes manufacturing
Breakfast food manufacturing
Poultry canning and canneries, N.O.C.
Vegetable oil manufacturing.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-615, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-615, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-615, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-615, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-615, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-615, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-615, filed 11/9/73, effective 1/1/74.]

WAC 296-17-616 Classification 3903.

Sugar refining
Molasses manufacturing, syrup manufacturing, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-616, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-616, filed 11/9/73, effective 1/1/74.]

WAC 296-17-618 Classification 3905.

Cocktail and soft drink lounges
Commissaries and restaurants with construction, erection, logging or mine operations
Eating establishments, N.O.C., such as public lunch counters in stores, ice cream parlors, popcorn stores or stands, and retail candy stores with on premise manufacturing
Espresso/coffee stands and carts
Food, drink, candy, etc. concessionaires at parks, tracks and exhibitions including vending concessionaires dispensing food, drink, candy, etc. at ball parks, race tracks, theatres and exhibitions
Restaurants and taverns

This classification is not applicable to street vendors or route food services who shall be rated under class 1101 (WAC 296-17-536).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-618, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-618, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-618, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-618, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-618, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-618, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-618, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-618, filed 11/9/73, effective 1/1/74.]

WAC 296-17-61801 Classification 3906.

Bakeries, cracker or potato chip manufacturing, N.O.C.
Confectionery and chewing gum manufacturing
Cough drop manufacturing
Macaroni manufacturing
Pizza manufacturing, N.O.C.
Ravioli or tamale manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-61801, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-61801, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-61801, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-61801, filed 11/30/79, effective 1/1/80.]

WAC 296-17-61804 Classification 3909.

Caterers
Meals on wheels

This classification excludes route food services reported separately, in risk classification 1101.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-61804, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-61804, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-61804, filed 11/29/82, effective 1/1/83.]

WAC 296-17-619 Classification 4002.

Creameries or milk and milk products processing including butter, cheese, ice cream, ice cream mix, and condensed milk

This classification does not include dairy or farming operations subject to risk classification 7301 (WAC 296-17-644).

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-619, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-619, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-619, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-619, filed

11/30/83, effective 1/1/84; Order 73-22, § 296-17-619, filed 11/9/73, effective 1/1/74.]

WAC 296-17-620 Classification 4101.

Printing, lithography, engraving, map printing, and silk screening, N.O.C.
Rubber stamp manufacturing and assembling
Bookbinding
This classification excludes photographic composition or prepress work such as photographic or computerized typesetting, layout, paste up, editing and proofreading, camera work and platemaking which will be reported in risk classification 4904
Any employee involved in printing operations subject to this classification will be reported in risk classification 4101 without division of hours.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-620, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-620, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-620, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-620, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-620, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-620, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-620, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-620, filed 11/9/73, effective 1/1/74.]

WAC 296-17-622 Classification 4103.

Newspaper publishing
This classification excludes photographic composition or prepress work such as photographic or computerized typesetting, layout, paste up, editing and proofreading, camera work and plate making which will be reported in risk classification 4904
Any employee involved in printing operations subject to this classification will be reported in risk classification 4103 without division of hours
Outside reporters, advertising or circulation solicitors and photographers with no other duties will be rated under risk classification 6303 (WAC 296-17-698)
Newspaper publishers with no printing operations will be governed by WAC 296-17-44001, business described by a standard exception classification.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-622, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-622, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-622, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-622, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-622, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-622, filed 11/9/73, effective 1/1/74.]

WAC 296-17-626 Classification 4107. Business machine service, adjustment, or repair, N.O.C. This classification includes the installation of typewriters, adding machines and reproduction machines (either electric or manual), main frame and micro/mini computer systems and x-ray equipment
Piano tuning.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-626, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-626, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-626, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-626, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-626, filed 11/9/73, effective 1/1/74.]

WAC 296-17-627 Classification 4108.

Letter service shops and mailing or addressing companies
This classification includes clerical office employees and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-627, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-627, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-627, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-627, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-627, filed 11/9/73, effective 1/1/74.]

WAC 296-17-628 Classification 4109.

Sign painting in shop
Sign painting or lettering inside buildings
This classification does not include painting done in connection with sign manufacturing rated under risk classification 2903 (WAC 296-17-568); risk classification 3404 (WAC 296-17-582); risk classification 3503 (WAC 296-17-587); or risk classification 3508 (WAC 296-17-592) or painting done in connection with sign repair rated under risk classification 0403 (WAC 296-17-516). Sign erection outside will be rated under risk classification 0403 (WAC 296-17-516).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-628, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-628, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-628, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-628, filed 11/9/73, effective 1/1/74.]

WAC 296-17-629 Classification 4201.

Coal dock operation - by means of mechanical apparatus, including stevedoring
Longshoring and stevedoring
Port districts, including sales personnel
Stevedoring, by hand or hand truck exclusively, no hoisting of cargo
Stevedoring, loading and unloading ships designed for freight carrying containers
Stevedoring, N.O.C., supercargo checkers
Tallymen, checking clerks in connection with stevedoring work
Wharf and pier, operation
This classification includes employees engaged in mending and repacking of damaged containers in connection with stevedoring work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-629, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-629, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-629, filed 11/9/73, effective 1/1/74.]

WAC 296-17-630 Classification 4301.

Glue manufacturing
Lard making or refining
Meat products manufacturing, including canning or dehydrating
Packing house - including butchering and handling livestock
Peat moss shredding and baling
Rendering works, N.O.C.
Sausage casings, wholesale dealer
Sausage manufacturing
Slaughter houses

Tallow making
Tanneries, fur manufacturing.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-630, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-630, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-630, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-630, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-630, filed 11/30/76; Order 75-38, § 296-17-630, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-630, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-630, filed 11/9/73, effective 1/1/74.]

WAC 296-17-631 Classification 4302.

Custom meat cutting facilities engaged in cutting uninspected or combined uninspected and inspected meats including farm kill operations. For purposes of this rule the terms "uninspected and inspected meats" shall be given the meanings as contained in chapter 16.49 RCW.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-631, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-631, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-631, filed 2/28/85, effective 4/1/85; Order 76-36, § 296-17-631, filed 11/30/76; Order 73-22, § 296-17-631, filed 11/9/73, effective 1/1/74.]

WAC 296-17-633 Classification 4304.

Feed lots
Stock yards, no slaughtering
Livestock auction and sales yards
Livestock buyers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-633, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-633, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-633, filed 11/9/73, effective 1/1/74.]

WAC 296-17-634 Classification 4305.

Garbage, refuse or ashes collecting
Garbage works, landfill, reduction or incineration operations - including cashiers collecting fees from customers and incidental recycle operation conducted in connection with a landfill or garbage works operation
Radioactive waste landfill
Tire dumps or collection centers.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-634, filed 5/31/91, effective 7/1/91; 90-13-018, § 296-17-634, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-634, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-634, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-634, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-634, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-634, filed 11/9/73, effective 1/1/74.]

WAC 296-17-635 Classification 4401.

Cold storage plants, lockers operation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-635, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-635, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-635, filed 11/9/73, effective 1/1/74.]

WAC 296-17-63501 Classification 4402.

Ice manufacturing, artificial
Ice harvesting
Ice dealers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-63501, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-63501, filed 11/29/82, effective 1/1/83.]

WAC 296-17-636 Classification 4404.

Storage warehouse, cold.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-636, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-636, filed 11/9/73, effective 1/1/74.]

WAC 296-17-637 Classification 4501.

Radio or television broadcasting companies - transmitter or field employees outside, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-637, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-637, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-637, filed 11/9/73, effective 1/1/74.]

WAC 296-17-638 Classification 4502.

Radio broadcasting stations, all other employment including clerical office and sales personnel
Recording companies, studio including clerical office and sales personnel
Television broadcasting stations, all other employment including clerical office and sales personnel
Television cable companies, all other employment including clerical office and sales personnel
"All other employees" is limited to employees confined to the studio or office and includes control operators, announcers, players, entertainers or musicians.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-638, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-638, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-638, filed 11/9/73, effective 1/1/74.]

WAC 296-17-640 Classification 4504.

Theatres all types
This classification includes managers, stage hands, box office employees, parking lot attendants, ushers, motion picture operators, snack bar employees, clerical office and sales personnel but excludes actors, performers, players, musicians and/or entertainers which are to be reported separately under risk classifications 6605 (WAC 296-17-727) and 6620 (WAC 296-17-73111).

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-640, filed 11/28/94, effective 1/1/95. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-640, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-640, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-640, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-640, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-640, filed 11/9/73, effective 1/1/74.]

WAC 296-17-641 Classification 4601.

Fireworks manufacturing
Powder works manufacturing
Combined chemicals and explosives manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-641, filed 11/27/85, effective 1/1/86; Order 74-40, § 296-17-641, filed

11/27/74, effective 1/1/75; Order 73-22, § 296-17-641, filed 11/9/73, effective 1/1/74.]

WAC 296-17-643 Classification 4802.

Berry farms
Bulb raising
Field vegetable crops, such as bush beans, peas, sweet corn, potatoes, sugar beets, and field carrots which are mechanically harvested
Flower or vegetable seed growing including harvesting of seeds
Picking of forest products, N.O.C.
This classification excludes fresh fruit packing operations rated under risk classification 2104 (WAC 296-17-564); and fruit cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615) unless specifically included by manual language.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-643, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-643, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-643, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-643, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-643, filed 5/31/85; 85-06-026 (Order 85-7), § 296-17-643, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-643, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-643, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-643, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-643, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-643, filed 11/9/73, effective 1/1/74.]

WAC 296-17-644 Classification 4803.

Farms, N.O.C.
Orchards - applies to all tree crops, deciduous and fruits, nuts, and shall include all acreage devoted to the raising of such crops
This classification includes operations incidental to the enterprises described above including harvesting of all crops. However; ground hand picking of prunes and nuts will be separately rated under risk classification 4806 (WAC 296-17-647) if the conditions stipulated in that risk classification are met
This classification excludes fresh fruit packing operations rated under risk classification 2104 (WAC 296-17-564); and fruit cannery or freezer operations or nut processing rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-644, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-644, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-644, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-644, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-644, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-644, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-644, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-644, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-644, filed 11/9/73, effective 1/1/74.]

WAC 296-17-645 Classification 4804.

Poultry raising, egg production and hatcheries
Egg grading, candling and packing
Fur bearing animals and rabbit raising
This classification applies to acreage devoted to the raising of poultry, rabbits and fur bearing animals.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-645, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-645, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-645, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-645, filed 11/9/73, effective 1/1/74.]

WAC 296-17-646 Classification 4805.

Christmas tree sales from u-cut farms or retail sales lots
Nurseries - including incidental greenhouse operations
This classification applies to all acreage devoted to nursery operations including tree nurseries and sod growing
Classification 4805 and classification 5004 shall not be assigned to the same risk unless the operations described by these classifications are conducted as separate and distinct businesses and each business has separate and distinct employees.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-646, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-646, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-646, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-646, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-646, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-646, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-646, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-646, filed 11/9/73, effective 1/1/74.]

WAC 296-17-647 Classification 4806.

Ground hand harvesting of berries, N.O.C.
For the purposes of this rule ground hand harvesting of berries means those crops which are harvested from the ground by hand by a worker either sitting, kneeling, bending, stooping or in a similar position or in the upright position when standing on the ground with no aid of ladders, stools or other climbing devices. This classification excludes all harvesting operations that employ or require the use of hand held cutting devices or tools or any mechanical picking or harvesting machinery including incidental pickers which may or may not follow behind such machinery and collect the harvested crops by hand.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-647, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-647, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-647, filed 11/30/83, effective 1/1/84; Order 76-36, § 296-17-647, filed 11/30/76; Order 75-38, § 296-17-647, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-647, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-647, filed 11/9/73, effective 1/1/74.]

WAC 296-17-649 Classification 4808.

Alfalfa and clover seed growing
Field crops, N.O.C., including raising of all hay, and cereal grains
Potato sorting and storage, N.O.C.
This classification applies to all operations incidental to the enterprises described above
This classification excludes grain milling operations rated under risk classification 2101 (WAC 296-17-562); fresh vegetable packing operations rated under risk classification 2104 (WAC 296-17-564); and vegetable cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-649, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-649, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-649,

filed 5/31/85; 85-06-026 (Order 85-7), § 296-17-649, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-649, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-649, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-649, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-649, filed 11/9/73, effective 1/1/74.]

WAC 296-17-64901 Classification 4809.

Greenhouses, N.O.C.
Flowers - field growing, excluding bulb raising rated in risk classification 4802 (WAC 296-17-643)
Mushroom raising and harvesting
Sprouts raising and harvesting
This classification excludes fresh vegetable packing operations rated under risk classification 2104 (WAC 296-17-564); and vegetable cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-64901, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-64901, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-64901, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-64901, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-64901, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-64901, filed 11/27/78, effective 1/1/79.]

WAC 296-17-64902 Classification 4810.

Farms - field vegetables, N.O.C. including truck gardening for fresh market. This classification includes all ground preparation, growing husbandry and hand harvesting with the aid of a hand held cutting device such as a paring or cutting knife used in the harvest of broccoli or cauliflower and by hand alone as in the case of cucumbers.
Separately report ground preparation, growing and harvesting of vegetable crops such as bush beans, peas, sweet corn, potatoes and field carrots which are mechanically harvested in risk classification 4802 (WAC 296-17-643) "farms: Vegetables - mechanically harvested"; fresh vegetable packing operations reported separately under risk classification 2104 (WAC 296-17-564); and vegetable cannery or freezer operations reported separately under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-64902, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-64902, filed 12/1/87, effective 1/1/88; 86-12-041 (Order 86-18), § 296-17-64902, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-64902, filed 11/27/85, effective 1/1/86.]

WAC 296-17-64903 Classification 4811.

Farms: Hops - including cultivating, picking, drying and baling hops and all other operations incidental to the enterprise described above
Farms: Mint - including distillery operations when conducted in connection with a mint farm operation and when performed by employees of an employer subject to this classification.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-64903, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-64903, filed 11/27/85, effective 1/1/86.]

WAC 296-17-64904 Classification 4812.

Fish and shellfish hatcheries including raising, egg production, grading, harvesting and shipping
This classification excludes fish and shellfish processing which are to be reported separately under risk classification 3304.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-64904, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-64904, filed 11/27/85, effective 1/1/86.]

WAC 296-17-64905 Classification 4813.

Vineyards - all operations including harvesting of fruit
This classification excludes fresh fruit packing operations which are to be reported separately under risk classification 2104 (WAC 296-17-564); wine making which are to be reported separately under risk classification 3702 (WAC 296-17-600); and fruit cannery, processing, or freezing operations which are to be reported separately under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-64905, filed 5/31/91, effective 7/1/91.]

WAC 296-17-650 Classification 4901.

Consulting engineering, architectural, and land surveying services, N.O.C.
Geologists, N.O.C.
Lease buyers performing work similar to oil geologists
Oil or gas geologists or scouts.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-650, filed 5/30/94, effective 6/30/94. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-650, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-650, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-650, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-650, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-650, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-650, filed 11/9/73, effective 1/1/74.]

WAC 296-17-651 Classification 4902.

State government - use of this classification is limited to clerical office, sales personnel and professional white collar employees that have no field exposure, law enforcement powers, or provide patient health care. For the purposes of this rule field exposure is defined as anything other than the normal travel to a work assignment such as a field auditor or social worker would encounter
This classification includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government. See risk classifications 4906 (WAC 296-17-655), 5307 (WAC 296-17-67901), 7103 (WAC 296-17-756) and 7201 (WAC 296-17-763) for other state government operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-651, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-651, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-651, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-651, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-651, filed 11/9/73, effective 1/1/74.]

WAC 296-17-652 Classification 4903.

Marine appraising
Boiler inspecting, N.O.C.
Elevator inspecting, no service
Inspection for insurance or valuation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-652, filed 11/27/85, effective 1/1/86; 81-24-042 (Order 81-30), § 296-17-652, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-652, filed 11/13/80, effective 1/1/81; Order 73-22, § 296-17-652, filed 11/9/73, effective 1/1/74.]

WAC 296-17-653 Classification 4904.

Clerical office, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-653, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-653, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-653, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-653, filed 11/9/73, effective 1/1/74.]

WAC 296-17-654 Classification 4905.

Hotels
Motels
This classification excludes restaurant and lounge employees which are to be reported separately in risk classification 3905 "restaurants, N.O.C.". Hotel and motel desk clerks with no other duties will be reported separately in risk classification 4904 "clerical office N.O.C."

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-654, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-654, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-654, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-654, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-654, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-654, filed 11/30/76; Order 73-22, § 296-17-654, filed 11/9/73, effective 1/1/74.]

WAC 296-17-655 Classification 4906.

Institutions of higher education including clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-655, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-655, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-655, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-655, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-655, filed 11/9/73, effective 1/1/74.]

WAC 296-17-656 Classification 4907.

Inmates employed in prison industries.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-656, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-656, filed 11/9/73, effective 1/1/74.]

WAC 296-17-657 Classification 4908.

Inmates of adult honor camps.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-657, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-657, filed 11/9/73, effective 1/1/74.]

WAC 296-17-658 Classification 4909.

Inmates of juvenile forest camps.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-658, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-658, filed 11/9/73, effective 1/1/74.]

WAC 296-17-65801 Classification 4910.

Building or property management operations by owner or lessee— including malls, apartment/condominium complexes and mobile home parks
Chimney cleaning - residential buildings.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-65801, filed 12/1/89, effective 1/1/90.]

WAC 296-17-659 Classification 5001.

Firewood cutting - all woods operations
Logging, N.O.C.
Sawmill operations conducted in the woods in connection with logging operations
Shake, shingle bolt and post cutting - all woods operations
For the purposes of this rule, logging, N.O.C. shall be considered the complete operation, including such activities as falling and bucking, skidding, yarding, loading, and maintenance of equipment except as otherwise provided and aircraft operations incident thereto
See risk classification 5206 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-659, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-659, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-659, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-659, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-659, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-659, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-659, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-659, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-659, filed 11/9/73, effective 1/1/74.]

WAC 296-17-660 Classification 5002.

Booming and rafting logs.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-660, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-660, filed 11/9/73, effective 1/1/74.]

WAC 296-17-66001 Classification 5003.

Log hauling by contractor
Log truck drivers, N.O.C.
See risk classification 5206 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-66001, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-66001, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-66001, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-66001, filed 11/27/78, effective 1/1/79.]

WAC 296-17-66002 Classification 5004.

Forest, range, or timber land labor services by landowner or contractor: This classification covers all forms of forest, range, or timber land labor. Such labor activities include but are not limited to tree planting, tree netting, tree shading, bud capping, chemical spraying, fertilizing,

animal trapping (such as mountain beaver and gopher baiting), bear feeding, precommercial tree thinning, conifer release (chemical or manual), tree pruning, cone picking, scion collection, hydro seeding and erosion control, and wildlife habitat development. This classification includes all field crew supervisors and foremen assigned to oversee work covered by this classification including internal quality control audits irrespective of whether or not their assigned duties include manual labor.

This classification excludes forest trail construction, slash burning, fire watch/patrol and forest fire fighting, slashing, hand piling, pile burning, roadside brushing, roadway dust/mud control which is to be reported separately in risk classification 0101; logging operations which are to be reported separately in risk classification 5001; logging road construction which is to be reported separately in risk classification 6902; and technical survey work which is to be reported separately in risk classification 1007.

[Statutory Authority: RCW 51.04.020(1), 51.16.035, 51.12.070 and 51.16.060. 92-18-065, § 296-17-66002, filed 8/31/92, effective 10/1/92. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-66002, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-66002, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-66002, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-66002, filed 11/30/81, effective 1/1/82.]

WAC 296-17-66003 Classification 5005.

Logging and/or tree thinning - mechanized operations: Use of this classification is limited to employers who are engaged in the "entire operation" of mechanical logging and/or tree thinning. For purposes of this rule the "entire operation" refers to the felling of trees, removal (skidding) of trees, processing (delimbing and bucking) of trees, and loading of trees on to log trucks by machines. Employers who are only involved in a portion of the work, and not involved in the "entire operation" of mechanical logging or tree thinning as described above are not covered by this classification and are to be reported separately in classification 5001 "logging, N.O.C." For example, an employer that subcontracts to fell trees with a feller/buncher or processor but is not involved in the removal (skidding) of the trees, the processing (delimbing and bucking) of trees and the loading of trees is excluded from this classification (5005) and is to be reported under classification 5001 "logging, N.O.C." Any employer whose operation includes any manual felling, removal, processing or loading of trees is excluded from this classification (5005) and is to be reported under classification 5001 "logging, N.O.C."

Equipment used by employers subject to this classification will consist of the following:

Feller/buncher - this machine is used to fell trees and place felled trees into stacks (bunches) for removal to the log landing for further processing. The operator of this machine does not leave the cab of the machine in the performance of duties in the logging operation

Processor - this machine is used to fell trees, delimb them, buck the tree to the desired log length and stack them (bunches) for removal to the landing where they will be segregated by general grade and loaded onto log trucks. In some cases a processor is used at the landing to delimb trees and buck them to log length. This is especially true when the trees are felled by a feller/buncher. The operator of this machine does not leave the cab of the machine in the performance of duties in the logging operation

Grapple skidder - this machine is used to remove (ground skid) stacks (bunches) of felled trees from the woods to the landing. The industry refers to the skidder as a tractor. A bulldozer is also referred to by the industry as a tractor. The two are distinguished from one another in that the skidder is a tire driven tractor and the bulldozer is a track driven tractor. A bulldozer equipped with a grapple is an acceptable piece of equipment to be used in the removal of trees. The operator of either the grapple skidder or bulldozer equipped with grapple does not leave the cab of the machine in the performance of duties in the logging operation

Forwarder - this machine is used to remove logs as cut by a processor from the woods to an awaiting log truck or to be stacked in piles for a future pickup by a log truck. This is a small specialized tractor equipped with a self-loader and a log bunk. The operator of this machine does not leave the machine in the performance of duties in the logging operation

Harvester - this machine is used at the landing of the logging side to delimb trees and buck trees to desired log length. This machine can also be used to load logs on to log trucks. The operator of this machine does not leave the cab of the machine in the performance of duties in the logging operation

Loader - this machine is used at the landing to load logs on to log trucks. The operator of this machine does not leave the cab of the machine in the performance of duties in the logging operation

All equipment used by employers subject to this classification must meet WISHA guidelines for Roll Over Protection Standards (ROPS) and Falling Object Protection Standards (FOPS)

See risk classification 5206 (WAC 296-17-675) for permanent shop/yard operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-051, § 296-17-66003, filed 5/27/94, effective 7/1/94.]

WAC 296-17-661 Classification 5101.

Metal ejection molding

Pipe or tube manufacturing, iron or steel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-661, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-661, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-661, filed 11/9/73, effective 1/1/74.]

WAC 296-17-663 Classification 5103.

Foundries, N.O.C.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-663, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-663, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-663, filed 11/9/73, effective 1/1/74.]

WAC 296-17-666 Classification 5106.

Blacksmithing, spring manufacturing, not wire spring, auto bumper manufacturing
Tool forging, hot forming or stamping
Forging works, drop or machine
Chain manufacturing, forged.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-666, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-666, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-666, filed 11/9/73, effective 1/1/74.]

WAC 296-17-668 Classification 5108.

Cable or wire rope drawing and manufacturing
Cable or wire rope manufacturing, no drawing
Cable or wire insulation or covering.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-668, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-668, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-668, filed 11/9/73, effective 1/1/74.]

WAC 296-17-669 Classification 5109.

Heavy arms: Manufacturing or repair
Heavy machinery and equipment: Manufacturing or repair
Press rollers: Recoating or resurfacing
Locomotive engine: Manufacturing or repair.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-669, filed 5/31/93, effective 7/1/93; 91-12-014, § 296-17-669, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-669, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-669, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-669, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-669, filed 11/13/80, effective 1/1/81; Order 75-38, § 296-17-669, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-669, filed 11/9/73, effective 1/1/74.]

WAC 296-17-670 Classification 5201.

Electric motors, generators, alternators, starters, convertors, solenoids and servomotors manufacturing or assembly including repair
Electric power or transmission equipment manufacturing or assembly
Electrical toasters, frying pans, and wire harnesses manufacturing or assembly
Vacuum cleaners and electrical appliances manufacturing or assembly, N.O.C.
This classification contemplates the manufacturing or repair of transformers, switchboards, circuit breakers, switches or switchboard apparatus, power switching devices or systems, power invertors or similar equipment but excludes installation or service
This is a shop or plant only classification, all outside activities are to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-670, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-670, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-670, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-670, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-670, filed 11/9/73, effective 1/1/74.]

WAC 296-17-673 Classification 5204.

Railroad car manufacturing or repair
Railroad car wheel manufacturing or repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-673, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-673, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-673, filed 11/9/73, effective 1/1/74.]

WAC 296-17-675 Classification 5206.

Construction or erection contractors permanent yard or shop for maintenance or storage of firm's equipment or material
This classification is applicable only to a permanent yard or shop maintained by the employer for the storage of material, or the storage and maintenance of equipment. This classification is applicable only to those employees regularly assigned to the shop or yard, and whose duties are solely incidental to the storage, repair or maintenance of the employer's equipment or material. No employee having any other duties during their shift or work day will be rated in this classification.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-675, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-675, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-675, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-675, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-675, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-675, filed 11/30/76; Order 73-22, § 296-17-675, filed 11/9/73, effective 1/1/74.]

WAC 296-17-676 Classification 5207.

Bowling centers
Skating rinks - ice or roller
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-676, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-676, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-676, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-676, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-676, filed 11/9/73, effective 1/1/74.]

WAC 296-17-67601 Classification 5208.

Brass, bronze, iron-ornamental - shop fabricating, assembly and manufacturing
Iron or steel works, shop, fabricate or assemble structural iron or steel
Iron works - shop - fabricate, assemble or manufacture non-structural iron or steel
Iron works - shop - manufacturing railings, staircases, fire escapes, etc.
Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all activities away from the shop or plant.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-67601, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-67601, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67601, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-67601, filed 11/29/82, effective 1/1/83.]

WAC 296-17-67602 Classification 5209.

Boilermaking, tank building (shop)
Metal goods manufacturing, N.O.C., from material 9 gauge or heavier
Wood stove manufacturing
Unless otherwise specified in the subclassification wording this is a shop or plant only classification. This classification includes work being performed in an adjacent yard when operated by an employer having operations subject to this classification
This classification excludes all activities away from the shop or plant.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-67602, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-67602, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67602, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-67602, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-67602, filed 11/29/82, effective 1/1/83.]

WAC 296-17-677 Classification 5301.

Accounting or bookkeeping firms
Court reporting firms
Credit bureaus
Employment agencies
Law firms
Management analyst or consulting firms, N.O.C.
Secretarial or telephone answering services
Travel agencies
Word processing services
This classification includes clerical office and sales personnel
Use of this classification is limited to employers engaged in such services being provided to the general public. This is a services only classification and does not include retailing or store operations, nor is this classification to be assigned to employers setting up separate business operation to manage other commonly owned or operated business undertakings unless coincidentally the other operations are also subject to this classification.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-677, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-677, filed 5/31/88, effective 7/1/88; 86-12-041 (Order 86-18), § 296-17-677, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-677, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-677, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-677, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-677, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-677, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-677, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-677, filed 11/9/73, effective 1/1/74.]

WAC 296-17-678 Classification 5305.

Clerical office, sales personnel and white collar employees of cities and towns.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-678, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-678, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-678, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-678, filed 11/9/73, effective 1/1/74.]

WAC 296-17-679 Classification 5306.

Clerical office, sales personnel and white collar employees of county, public utility districts and taxing districts, N.O.C.
Clerical office, sales personnel and white collar employees of Indian tribal councils.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-679, filed 6/8/90, effective 7/9/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-679, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-679, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-679, filed 11/9/73, effective 1/1/74.]

WAC 296-17-67901 Classification 5307.

State government, N.O.C.
For the purpose of this rule, this classification will include any state employee performing manual labor, supervising a work crew performing manual labor such as custodial or maintenance, construction, and machinery or equipment operators or professional white collar employments such as engineers, safety inspectors, biologists who have field exposures
This classification includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government
See risk classifications 4902 (WAC 296-17-651), 4906 (WAC 296-17-655), 7201 (WAC 296-17-763), and 7103 (WAC 296-17-756) for other state employees.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-67901, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67901, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-67901, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-67901, filed 11/30/79, effective 1/1/80.]

WAC 296-17-680 Classification 6103.

Athletic officials for amateur sports, N.O.C., such as umpires and referees
Churches
Day nurseries or child care centers
Libraries, N.O.C.
Museums, N.O.C.
Schools, N.O.C. including dance, modeling, music and flight instructions classroom only
Schools: Academic K-12
Schools, trade or vocational
Use of this classification is limited to clerical office, sales personnel and white collar professional employees
See risk classification 6104 (WAC 296-17-681) for other operations.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-680, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-680, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-680, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-680, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-680, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-680, filed 11/9/73, effective 1/1/74.]

WAC 296-17-681 Classification 6104.

Churches
Day nurseries or child care centers
Libraries, N.O.C.

Museums, N.O.C.
Schools, N.O.C. including dance, modeling, music
Schools: Academic K-12
Schools, trade or vocational
All other employments, N.O.C.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-681, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-681, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-681, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-681, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-681, filed 11/9/73, effective 1/1/74.]

WAC 296-17-682 Classification 6105.

Hospitals - N.O.C. including hospital districts
Hospitals - private proprietary
Hospitals - religious, charitable or nonprofit
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-682, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-682, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-682, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-682, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-682, filed 11/27/78, effective 1/1/79; Order 73-22, § 296-17-682, filed 11/9/73, effective 1/1/74.]

WAC 296-17-684 Classification 6107.

Veterinary hospitals or clinics
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-684, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-684, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-684, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-684, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-684, filed 11/9/73, effective 1/1/74.]

WAC 296-17-685 Classification 6108.

Convalescent or nursing homes
Homes for the aged
Rest homes
This classification includes nursing care for the residents.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-685, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-685, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-685, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-685, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-685, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-685, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-685, filed 11/9/73, effective 1/1/74.]

WAC 296-17-686 Classification 6109.

Childbirth classes
Chiropractors, N.O.C.
Dental clinics, N.O.C.
Dentists, N.O.C.
Massage therapy services - This subclassification excludes massage practitioners employed by a health club, gymnasium, saunas or bath house which are to be reported separately in classification 6204
Medical clinics, N.O.C.
Midwife services
Naturopaths, N.O.C.
Optometrists, N.O.C.
Physical therapists, N.O.C.
Physicians and surgeons, N.O.C.
Psychologists and psychiatrists, N.O.C.
Radiology and MRI referral clinics
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-686, filed 5/30/94, effective 6/30/94; 93-12-093, § 296-17-686, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-686, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-686, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-686, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-686, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-686, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-686, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-686, filed 11/9/73, effective 1/1/74.]

WAC 296-17-68601 Classification 6110.

Home health services and nursing care, N.O.C.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-68601, filed 12/1/89, effective 1/1/90.]

WAC 296-17-687 Classification 6201.

Crematoriums
Funeral directors - mortuaries
This classification excludes cemetery operations rated under risk classification 6202 (WAC 296-17-688).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-687, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-687, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-687, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-687, filed 11/9/73, effective 1/1/74.]

WAC 296-17-688 Classification 6202.

Cemeteries.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-688, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-688, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-688, filed 11/9/73, effective 1/1/74.]

WAC 296-17-689 Classification 6203.

Boys or girls clubs
YMCA/YWCA institutions
This classification includes clerical office and sales personnel and excludes camp operations.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-689, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-689, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-689, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-689, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-689, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-689, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-689, filed 11/9/73, effective 1/1/74.]

WAC 296-17-690 Classification 6204.

Baths or saunas, N.O.C.
Exercise or health institutes
Gymnasiums
Health clubs.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-690, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-690, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-690, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-690, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-690, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-690, filed 11/9/73, effective 1/1/74.]

WAC 296-17-691 Classification 6205.

Clubs, N.O.C. such as but not limited to fraternal, home owners or social organizations
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-691, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-691, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-691, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-691, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-691, filed 11/9/73, effective 1/1/74.]

WAC 296-17-692 Classification 6206.

Golf courses, N.O.C., excluding miniature golf and driving ranges which are to be reported separately in risk classification 6208 unless they are conducted in connection with operations subject to this classification.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-692, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-692, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-692, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-692, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-692, filed 11/9/73, effective 1/1/74.]

WAC 296-17-693 Classification 6207.

Carnivals: Amusement rides and concessions, traveling. This classification includes drivers and all employees engaged in the set up and tear down of all mechanical and nonmechanical rides, concession booths, or stands (i.e., game, food, souvenir, etc.), mobile offices, aid rooms, ticket booths, and all other temporary structures associated with a traveling carnival. Report carnival operations (i.e., ride operators, ticket takers and sellers, cooks, traveling clerical, game attendants, etc.) separately in risk classification 6208 (WAC 296-17-694) "carnival operations." Report winter quartering and permanent yard or shop operations separately in risk classification 5206 (WAC 296-17-675) "contractors permanent yard."

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-693, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-693, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-693, filed 2/28/85, effective 4/1/85; Order 77-27, § 296-17-693, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-693, filed 11/9/73, effective 1/1/74.]

WAC 296-17-694 Classification 6208.

Amusement parks
Carnival operations, N.O.C.
Caves or caverns operation for exhibition purposes - including rides, ticket sellers, gate attendants
Concessions - boats in parks
Fairs
Kiddie rides - permanent locations
Miniature golf courses
Race tracks, excluding parimutuel clerks and cashiers with no other duties which will be rated under risk classification 4904 (WAC 296-17-653) clerical office, N.O.C.
Ranges - archery, ball, dart, golf
Shooting galleries, air rifle - no firearms
Shooting ranges - firearms
Shows - animal
Shows - flower, art
This classification includes food and beverage operations and care, custody and maintenance of the above facilities.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-694, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-694, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-694, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-694, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-694, filed 11/30/76; Order 73-22, § 296-17-694, filed 11/9/73, effective 1/1/74.]

WAC 296-17-695 Classification 6209.

Camp grounds such as but not limited to church, recreational, or educational including incidental cottage or cabin rentals, boat concessions, grocery stores, and penny or video arcades
Dude ranches - excluding cattle ranches
Swimming pools - public
This classification includes food and beverage operations, clerical office and sales personnel physically located at the above facilities.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 89-24-051 (Order 89-22), § 296-17-695, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-695, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-695, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-695, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-695, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-695, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-695, filed 11/30/76; Order 73-22, § 296-17-695, filed 11/9/73, effective 1/1/74.]

WAC 296-17-696 Classification 6301.

Automobile sales personnel
Camper sales personnel
Driving school instructors
Motorcycle sales personnel
Pleasurecraft sales personnel - no aircraft
Trailer or mobile home sales personnel
Truck sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-696, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-696, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-696, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-696, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-696, filed 11/9/73, effective 1/1/74.]

WAC 296-17-697 Classification 6302.

Book sales personnel
Coffee, tea, grocery sales personnel
Cosmetics sales personnel
Door to door sales personnel, N.O.C.
Household furnishings sales personnel
Magazine sales personnel
Vacuum cleaner sales personnel
Wearing apparel sales personnel
This classification is for door to door sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-697, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-697, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-697, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-697, filed 11/9/73, effective 1/1/74.]

WAC 296-17-698 Classification 6303.

Collectors, messengers, counsellors, N.O.C.
Farm machinery sales personnel - outside
Insurance sales personnel and claims adjustors - outside
Machinery sales personnel - outside - construction, mining, heavy equipment
Sales personnel, N.O.C. - outside.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-698, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-698, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-698, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-698, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-698, filed 11/30/76; Order 73-22, § 296-17-698, filed 11/9/73, effective 1/1/74.]

WAC 296-17-699 Classification 6304.

Department stores
This classification includes clerical office and sales personnel and installation of household furnishings such as lamps, pictures, draperies or curtains etc.
This classification excludes automotive repair and service and other outside installation or construction.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-699, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-699, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-699, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-699, filed 11/9/73, effective 1/1/74.]

WAC 296-17-700 Classification 6305.

Clothing stores - retail
Concessions for hat and coat checking
Shoe stores - retail
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-700, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-700, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-700, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-700, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-700, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-700, filed 11/9/73, effective 1/1/74.]

WAC 296-17-701 Classification 6306.

Appliance stores wholesale/retail excluding second hand appliance stores which will be rated in risk classification 0607 (WAC 296-17-527) household appliances service and repair
Furniture rental stores
Furniture stores wholesale/retail
Office furniture stores - wholesale/retail
Piano or organ stores, N.O.C., wholesale/retail
This classification will include installation of household furnishings, household floor coverings, and household appliances including incidental service and repair of household appliances
This classification excludes contract installation which for the purposes of this rule shall mean the bidding and ultimate furnishing to a purchaser such items listed in this classification that are specially ordered from others (i.e., factories, manufacturers, brokers, etc.) to fulfill the terms of the contract.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-701, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-701, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-701, filed 11/30/83, effective 1/1/84; Order 76-36, § 296-17-701, filed 11/30/76; Order 75-38, § 296-17-701, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-701, filed 11/9/73, effective 1/1/74.]

WAC 296-17-703 Classification 6308.

Clock and watch stores - wholesale/retail
Hearing-aid stores - wholesale/retail
Jewelry stores - wholesale/retail
Optical stores, no lens grinding - wholesale/retail
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-703, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-703, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-703, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-703, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-703, filed 11/9/73, effective 1/1/74.]

WAC 296-17-704 Classification 6309.

Automobile, truck, motorcycle accessory or replacement parts stores - excluding repairs
Bicycle stores - including repairs
Custom picture or u-frame stores - including repairs
Gun stores - including repairs
Hardware variety stores, N.O.C.: Excluding any operation that sells lumber or building materials which will be separately reported in risk classification 2009 and small engine repair which is to be separately reported in classification 3402
Locksmiths, including repairs but excluding installation of dead bolt locks or similar activities which will be separately reported in risk classification 0607
Stained art glass stores - excluding manufacturing
Wood stove and accessory stores - excluding installations or repairs
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-704, filed 5/30/94, effective 6/30/94; 93-12-093, § 296-17-704, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-704, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-704, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-704, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-704, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-704, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-704, filed 11/30/76; Order 75-38, § 296-17-704, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-704, filed 11/9/73, effective 1/1/74.]

WAC 296-17-706 Classification 6402.

Grocery stores with fresh meat counters, combined - retail
This classification includes clerical office and sales personnel

This classification also includes but is not limited to such activities as in-store bakeries, delis, espresso bars, video rentals, film developing, and floral, but excludes in-store pharmacies, lunch counters, and restaurant operations to be separately rated.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-706, filed 5/30/94, effective 6/30/94. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-706, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-706, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-706, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-706, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-706, filed 11/9/73, effective 1/1/74.]

WAC 296-17-707 Classification 6403.

Coffee, tea or spice stores - retail
Dairy products stores - retail
Fruit or vegetable stores - retail
Convenient grocery stores or mini markets - retail, N.O.C. excluding operations which include the sales of gasoline which are to be reported separately under classification 3410
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-707, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-707, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-707, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-707, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-707, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-707, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-707, filed 11/9/73, effective 1/1/74.]

WAC 296-17-708 Classification 6404.

Florists stores wholesale/retail
Balloon arrangement stores wholesale/retail
Plants: Interior household type - potted or planted, sales or leasing including plant watering and maintenance services associated with indoor plants
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-708, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-708, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-708, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-708, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-708, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-708, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-708, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-708, filed 11/9/73, effective 1/1/74.]

WAC 296-17-709 Classification 6405.

Tire: Manufacturing, vulcanizing, rebuilding and/or recapping
Tire sales and service, wholesale and retail including incidental mechanical repair work to automobiles or trucks
Tire bumper: Manufacturing
Tire recycle or shredding - excluding tire dump operations which are to be reported separately under risk classification 4305 (WAC 296-17-634).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-709, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-709, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-709, filed 2/28/85, effective 4/1/85; Order 75-38, § 296-17-709, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-709, filed 11/9/73, effective 1/1/74.]

WAC 296-17-710 Classification 6406.

Baseball card stores - retail
Book, record, video stores - retail
Camera/photo supplies stores - retail
Candy, cigarette and tobacco stores - retail
Coin and stamp stores - retail
Coin operated arcades, excluding repair rated under risk classification 0606 (WAC 296-17-526)
Drug stores - retail
Dry cleaning - coin operated self service
Fabric and yardage stores, yarn and needle work stores - retail
Floor covering stores, carpet sample stores, retail - excluding installation which will be rated in risk classification 0502 (WAC 296-17-517)
Laundromats, coin operated self service
Microwave oven and stereo component stores - retail
Musical instrument stores - retail, excluding piano or organ stores which will be rated in risk classification 6306 (WAC 296-17-701)
News butchers or news/magazine stands - retail
Office stationery stores, and office machinery stores including microcomputer and copy machines excluding repair
Paint/wallpaper stores - retail
Pawn shops
Pet shops - retail including incidental pet grooming
Private mailbox, safety deposit box or computer tape storage facilities
Retail stores, N.O.C.
Sewing machine stores - retail
Sporting goods stores - retail
Telephone stores - retail
Variety and five and ten cent stores - retail
Wine stores and retail liquor agencies; soft drink stores
This classification includes clerical office and sales personnel, but excludes all on premise manufacturing of any kind, repair work, delivery drivers, outside installation, lunch counters and restaurant operations which are to be separately rated.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-710, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-710, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-710, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-710, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-710, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-710, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-710, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-710, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-710, filed 11/9/73, effective 1/1/74.]

WAC 296-17-711 Classification 6407.

Barber and beauty supply houses
Clothing, wearing apparel or dry goods stores - wholesale
Drug stores wholesale
Mill supply dealers
Paint and wallpaper dealers - wholesale
Stores, combined wholesale and retail, N.O.C.
Welding supply dealers
Wholesale stores, N.O.C.

This classification excludes drivers which are to be separately rated under risk classification 1101 (WAC 296-17-536), delivery by combined wholesale and retail stores.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-711, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-711, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-711, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-711, filed 11/9/73, effective 1/1/74.]

WAC 296-17-712 Classification 6408.

Farm machinery/equipment dealers
Farm machinery rental dealers
This classification includes demonstration of machinery or equipment and repair without regard to location. All other operations to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-712, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-712, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-712, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-712, filed 11/9/73, effective 1/1/74.]

WAC 296-17-713 Classification 6409.

Machinery/equipment dealers, N.O.C.
Machinery rental dealers, N.O.C.
Oil or gas well supplies or equipment dealers
This classification includes demonstration of machinery or equipment and repair without regard to location. All other operations to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-713, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-713, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-713, filed 11/13/80, effective 1/1/81; Order 74-40, § 296-17-713, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-713, filed 11/9/73, effective 1/1/74.]

WAC 296-17-71301 Classification 6410.

Janitorial supply dealers
This classification includes outside sales personnel and delivery drivers.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-71301, filed 5/31/91, effective 7/1/91.]

WAC 296-17-714 Classification 6501.

Barber shops
Beauty parlors
Cosmetologists and electrolysis studios
Sun tanning parlors
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-714, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-714, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-714, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-714, filed 11/9/73, effective 1/1/74.]

WAC 296-17-715 Classification 6502.

Banking
Check cashing services
Credit unions
Financial institutions, N.O.C.
Investment companies
Loan companies
Mortgage companies
Savings and loan associations
Stock brokers and escrow companies
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-715, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-715, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-715, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-715, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-715, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-715, filed 11/9/73, effective 1/1/74.]

WAC 296-17-716 Classification 6503.

Labor unions or employee representative associations
This classification includes all employees including any official representatives.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-716, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-716, filed 5/31/85; 83-24-017 (Order 83-36), § 296-17-716, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-716, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-716, filed 11/9/73, effective 1/1/74.]

WAC 296-17-717 Classification 6504.

Stores - welfare - such as Goodwill or Salvation Army
This classification includes clerical office and sales personnel and collecting, conditioning and resale of donated used household articles.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-717, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-717, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-717, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-717, filed 11/9/73, effective 1/1/74.]

WAC 296-17-718 Classification 6505.

Welfare special works program
Use of this classification will be limited to nonprofit organizations that administer special training block grant moneys which are used to provide eligible unemployable candidates work experience. "Work experience" for the purpose of this rule shall mean activities performed under direct and close supervision for a limited period of time, usually less than six months, wages or remuneration for which is paid by the referring or sponsoring organization without reimbursement from the person or entity in whose workplace the activities are performed.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-718, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-718, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-718, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-718, filed 11/9/73, effective 1/1/74.]

WAC 296-17-719 Classification 6506.

Film exchanges - commercial type movie theatre films excluding video cassettes which are to be separately rated
Film print shops including developing and printing
Microfilming

Photograph studios including outside photographers
This classification includes clerical office and sales personnel but excludes drivers which are to be separately rated under risk classification 1101 (WAC 296-17-536), delivery by combined wholesale and retail stores.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-719, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-719, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-719, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-719, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-719, filed 11/9/73, effective 1/1/74.]

WAC 296-17-721 Classification 6508.

Chore services
Domestic servants employed in or about the private residence of their employer. This classification excludes all temporary or intermittent domestic (residential) cleaning or janitorial services which are to be reported separately on risk classification 6602.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-721, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-721, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-721, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-721, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-721, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-721, filed 11/9/73, effective 1/1/74.]

WAC 296-17-722 Classification 6509.

Adult family homes
Boarding homes and centers, N.O.C.
Boarding houses
Foster homes
Fraternity houses
Orphanages
Rooming houses
Sorority houses.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-722, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-722, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-722, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-722, filed 11/9/73, effective 1/1/74.]

WAC 296-17-723 Classification 6601.

Detective agencies
Merchant police or patrol
Security guard agencies
Security guard at logging or construction sites as allowed for in WAC 296-17-441(1).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-723, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-723, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-723, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-723, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-723, filed 11/9/73, effective 1/1/74.]

WAC 296-17-724 Classification 6602.

Janitorial cleaning services, N.O.C. - including contract window cleaning
Janitors, N.O.C.
Pest control. This category applies to operations involved in the control and extermination of pests by the use of pesticides, rodenticides and fumigants
Portable cleaning and washing, N.O.C. - includes auto and truck washing, recreational vehicles and mobile homes. This category will include roof cleaning and washing of single story buildings, but only if the washing is not incidental to painting or roof repair
Residential cleaning or residential janitorial services
Swimming pool cleaning
Termite control. This category applies to operations involved in the control and extermination of termites and other wood-destroying pests or organisms by fumigation or spraying of poisonous insecticides. Does not include structural repair
Window washing services.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-724, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-724, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-724, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-724, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-724, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-724, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-724, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-724, filed 11/9/73, effective 1/1/74.]

WAC 296-17-725 Classification 6603.

Auction sales, all types, excluding livestock auctions and sales yards rated in risk classification 4304 (WAC 296-17-633)
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-725, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-725, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-725, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-725, filed 11/9/73, effective 1/1/74.]

WAC 296-17-726 Classification 6604.

Lens manufacturing - ground and polished lenses
Optical goods manufacturing, N.O.C.
Telescope manufacturing - with lens grinding
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-726, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-726, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-726, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-726, filed 11/9/73, effective 1/1/74.]

WAC 296-17-727 Classification 6605.

Actors and performers, N.O.C.
Dance halls - all employment
Musicians, N.O.C.
This classification includes actors, performers, players and musicians of theaters but excludes entertainers such as ballet, dance, gymnastics, ice dance/skate performers which are to be reported separately under risk classification 6620 (WAC 296-17-73111).

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-727, filed 11/28/94, effective 1/1/95. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-727, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-727, filed 2/28/85, effective 4/1/85; Order 77-27, § 296-17-727, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-727, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-727, filed 11/9/73, effective 1/1/74.]

WAC 296-17-729 Classification 6607.

Billiard halls
Card rooms and bingo parlors
Recreational, social and community centers, N.O.C.
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-729, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-729, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-729, filed 11/9/73, effective 1/1/74.]

WAC 296-17-730 Classification 6608.

Motion picture production
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-730, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-730, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-730, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-730, filed 11/9/73, effective 1/1/74.]

WAC 296-17-73105 Classification 6614.

Parimutuel horse racing: All other employees, N.O.C. - Major tracks
This classification is limited in scope to employees of trainers and/or owners who come under the jurisdiction of the Washington horse racing commission, and who become licensed subject to the Washington horse racing commission's rules or regulations. This classification covers all on or off track employments of employers subject to this classification, such as: Assistant trainers, pony riders, and exercise riders; but excludes grooms which are to be reported separately in classification 6615. For purposes of this rule, jockeys will be considered exercise riders when employed by a trainer and/or owner at a time other than during the dates of a scheduled race meet. A meet, as used in this section, shall be for the duration of the racing season as set for each track by the Washington state horse racing commission.

[Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-73105, filed 7/20/89, effective 8/20/89.]

WAC 296-17-73106 Classification 6615.

Parimutuel horse racing: Grooms - Major tracks
This classification is limited in scope to individuals licensed as grooms by the Washington horse racing commission who are employed by a trainer and/or owner who come under the jurisdiction of and are licensed by the Washington horse racing commission. This classification covers all on or off track activities of grooms employed at major tracks. Employment activities performed by grooms at a fair or bush track are to be reported separately in classification 6617.

[Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-73106, filed 7/20/89, effective 8/20/89.]

WAC 296-17-73107 Classification 6616.

Parimutuel horse racing: All other employees, N.O.C. - Fair meets or bush tracks
This classification is limited in scope to employees of trainers and/or owners who come under the jurisdiction of the Washington horse racing commission, and who become licensed subject to the Washington horse racing commission's rules or regulations. This classification covers all on or off track employments of employers subject to this classification, such as: Assistant trainers, pony riders, and exercise riders; but excludes grooms which are to be reported separately in classification 6617. For purposes of this rule, jockeys will be considered exercise riders when employed by a trainer and/or owner at a time other than during the dates of a scheduled race meet. A meet, as used in this section, shall be for the duration of the racing season as set for each track by the Washington state horse racing commission.

[Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-73107, filed 7/20/89, effective 8/20/89.]

WAC 296-17-73108 Classification 6617.

Parimutuel horse racing: Grooms - Fair meets or bush tracks
This classification is limited in scope to individuals licensed as grooms by the Washington horse racing commission who are employed by a trainer and/or owner who come under the jurisdiction of and are licensed by the Washington horse racing commission. This classification covers all on or off track activities of grooms employed at a bush track or fair meet. Employment activities performed by grooms at a major track are to be reported separately in classification 6615.

[Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-73108, filed 7/20/89, effective 8/20/89.]

WAC 296-17-73111 Classification 6620.

Entertainers, N.O.C.
This classification covers entertainers whose routines and performances are of a physical nature such as but not limited to ballet, dance, gymnastics, and ice dance/skate performers.

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-73111, filed 11/28/94, effective 1/1/95.]

WAC 296-17-735 Classification 6704.

Parking lot operations including attendants or monitors.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-735, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-735, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-735, filed 11/9/73, effective 1/1/74.]

WAC 296-17-736 Classification 6705.

Excursions - outdoor recreational N.O.C., includes river rides, pack trains, hiking and mountaineering, and including camping operations incidental thereto
Ski facilities - includes all operations incidental to the operation of the skiing facility such as ski tows parking lots but excludes food service operations, hotel or motel operations, ski rental or ski sales shops
Ski instructors and ski patrols
Wind sail board instructors.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-736, filed 5/31/88, effective 7/1/88; 87-24-060 (Order 87-26), § 296-17-736, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-736, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-736, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-736, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-736, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-736, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-736, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-736, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-736, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-736, filed 11/9/73, effective 1/1/74.]

WAC 296-17-737 Classification 6706.

Athletic teams - operation of premises and care of teams
All employees other than players, umpires, coaches and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-737, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-737, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-737, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-737, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-737, filed 11/9/73, effective 1/1/74.]

WAC 296-17-738 Classification 6707.

Football teams, N.O.C.
Hockey teams
Roller derbies
Contact sports, N.O.C.
This classification applies to professional contact sports and includes umpires, referees, coaches and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-738, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-738, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-738, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-738, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-738, filed 11/9/73, effective 1/1/74.]

WAC 296-17-739 Classification 6708.

Jockeys
Professional racing drivers.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-739, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-739, filed 11/27/85, effective 1/1/86; Order 77-10, § 296-17-739, filed 5/31/77; Order 74-40, § 296-17-739, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-739, filed 11/9/73, effective 1/1/74.]

WAC 296-17-740 Classification 6709.

Sheltered workshops
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-740, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-740, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-740, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-740, filed 11/9/73, effective 1/1/74.]

WAC 296-17-741 Classification 6801.

Airlines, scheduled
All members of the flying crew.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-741, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-741, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-741, filed 11/9/73, effective 1/1/74.]

WAC 296-17-742 Classification 6802.

Airlines, scheduled
All ground crew operations including ticket sellers who handle baggage.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-742, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-742, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-742, filed 11/9/73, effective 1/1/74.]

WAC 296-17-743 Classification 6803.

Aircraft operations, N.O.C. - all members of the flying crew
Flight instruction
Private aircraft - transportation of personnel in connection with the employer's business. The rule governing standard exceptions does not apply here
Nonscheduled airlines - flight crew members.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-743, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-743, filed 11/27/85, effective 1/1/86; Order 76-36, § 296-17-743, filed 11/30/76; Order 73-22, § 296-17-743, filed 11/9/73, effective 1/1/74.]

WAC 296-17-744 Classification 6804.

Aircraft companies, sales or service agencies - including aircraft sales personnel
Aircraft ground crew operations, N.O.C.
Airport operations
Aircraft remanufacturing and/or rebuilding including modifications, conversions and repairs by firms not engaged in the original manufacturing of such aircraft
Nonscheduled airlines - ground crew operations including ticket sellers who handle baggage.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-744, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-744, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-744, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-744, filed 11/24/75, effective 1/1/76; 73-22, § 296-17-744, filed 11/9/73, effective 1/1/74.]

WAC 296-17-745 Classification 6809.

Baseball teams
Basketball teams
Soccer teams
Noncontact sports, N.O.C.
This classification applies to professional noncontact sports and includes umpires, referees, coaches and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-745, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-745, filed 11/30/83, effective 1/1/84; Order 77-10, § 296-17-745, filed 5/31/77; Order 74-40, § 296-17-745, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-745, filed 11/9/73, effective 1/1/74.]

WAC 296-17-746 Classification 6901.

Volunteers
This classification includes all volunteers performing services for any state agency, municipal corporation, political subdivision, or private nonprofit charitable organization
This classification excludes volunteer law enforcement officers which are to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-746, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-

746, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-746, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-746, filed 12/1/77; Order 75-28, § 296-17-746, filed 8/29/75, effective 10/1/75.]

WAC 296-17-747 Classification 6902.

Logging railroad construction or maintenance
Logging road construction or maintenance
For the purposes of this rule logging roads are roads for which the basic use is for the transporting of logs by truck. This classification includes roads constructed on public or private lands in connection with timber sales or logging, such as roads being constructed in accordance with the state department of natural resources or the United States Forest Service timber sales. Roads constructed subject to this classification are comprised of dirt and/or crushed rock. Operations covered include grading, grubbing, clearing of right-of-way and including culverts and bridges, but excludes falling, bucking of right-of-way timber or any of the other logging activities as enumerated under risk classification 5001 (WAC 296-17-659)
This classification excludes the construction of asphalt or concrete type roads which are to be reported separately in risk classification 0101 (WAC 296-17-501)
See risk classification 5206 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-747, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-747, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-747, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-747, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-747, filed 11/24/75, effective 1/1/76.]

WAC 296-17-748 Classification 6903.

Aerial spraying, seeding, crop dusting, firefighting.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-748, filed 11/27/85, effective 1/1/86; Order 76-36, § 296-17-748, filed 11/30/76.]

WAC 296-17-749 Classification 6904.

Fire fighters - salaried fire fighters of municipal fire departments.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-749, filed 11/27/85, effective 1/1/86; Order 77-27, § 296-17-749, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-749, filed 12/1/77.]

WAC 296-17-750 Classification 6905.

Law enforcement officers - law enforcement officers of cities, towns, counties or Indian tribal councils
This classification includes volunteer law enforcement officers, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-750, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-750, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-750, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-750, filed 12/1/77.]

WAC 296-17-751 Classification 6906.

Volunteer law enforcement officers
This classification includes volunteer law enforcement officers in accordance with RCW 51.12.035.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-751, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-751, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-751, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-751, filed 12/1/77.]

WAC 296-17-752 Classification 6907.

Household furnishings moving and storage.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-752, filed 11/27/85, effective 1/1/86; Order 77-27, § 296-17-752, filed 11/30/77, effective 1/1/78.]

WAC 296-17-753 Classification 6908.

Carbon paper, crepe paper, blue print paper, computer paper, calculation tape, note pad, file folder, envelope, stationery, and typewriter ribbon: Manufacturing
Lightweight paper goods: Manufacturing such as but not limited to such single or double ply paper items as surgical gowns, towels, napkins, table or shelf covers, florist papers, tissue, and shredded packing material
Paper bag, abrasive paper, movers packing pads, and wallpaper: Manufacturing
Paper box: Manufacturing - set up or folding paper boxes.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-12-014, § 296-17-753, filed 5/31/91, effective 7/1/91. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-753, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-753, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-753, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-753, filed 11/30/77, effective 1/1/78.]

WAC 296-17-75301 Classification 6909.

Medical laboratories
Blood banks
Assaying laboratories
Laboratories—Analytical, testing, or quality control for others, including outside operations, excluding outside x-raying and drilling.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-75301, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-75301, filed 11/27/78, effective 1/1/79.]

WAC 296-17-754 Classification 7101.

Corporate officers, N.O.C.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-754, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-754, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-754, filed 11/27/78, effective 1/1/79.]

WAC 296-17-755 Classification 7102.

Football teams
This classification applies to football teams which are participants in the National Football League and includes players, referees, coaches, and managers.

[Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-755, filed 12/1/87, effective 1/1/88; 85-24-032 (Order 85-33), § 296-17-755,

filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-755, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-755, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-755, filed 11/30/79, effective 1/1/80.]

WAC 296-17-756 Classification 7103.

State government, this classification is to be used to report all workers who have law enforcement powers although such workers are professional white collar employees

This classification includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government, including employees having arrest powers or such other powers common to law enforcement, such as state patrol, wildlife agents, guards or correctional officers of inmates, fishery patrol officers, lottery officers

See risk classifications 4902 (WAC 296-17-651), 5307 (WAC 296-17-67901), and 7201 (WAC 296-17-763) for other state government operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-756, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-756, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-756, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-756, filed 11/30/79, effective 1/1/80.]

WAC 296-17-757 Classification 7104.

Temporary help company: Administrative offices including clerical office and sales personnel.

This classification applies only to those employees of the temporary help company assigned to work in the administrative or branch offices of a temporary help company. It does not apply to employees of a temporary help company assigned to a customer's administrative or clerical office. This classification is also applicable to an employment agency's administrative office when conducted in connection with a temporary help company operation.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-757, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-757, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-757, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-757, filed 11/30/79, effective 1/1/80.]

WAC 296-17-758 Classification 7105.

Temporary help company: Office support services.

This classification applies to employees of a temporary help company who are assigned on a temporary basis to its customers and who are engaged wholly in office work for such customers. This classification includes occupations such as clerks, typists, receptionists, secretaries, accountants, actuaries, attorneys, bank tellers, bookkeepers, word processors, data entry and computer operators, programmers, drafters, designers, graphic artists, technical writers, technical illustrators, design engineers, library assistants, telemarketers, and dispatchers, prepress work for printers, bindery - collating by hand, and mail clerks who do not operate equipment. Mail clerks who operate equipment are to be reported separately in risk classification 7109. Employees subject to this classification are not required to physically be located in a clerical office. The test is whether or not they perform clerical office work as described in this classification. A division of worker hours is not permitted between this classification and any other classification.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-758, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-758, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-758, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-758, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-758, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-758, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-758, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-758, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-758, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-758, filed 11/30/79, effective 1/1/80.]

WAC 296-17-759 Classification 7106.

Temporary help company: Retail or wholesale store services.

This classification applies to employees of a temporary help company who are assigned on a temporary basis to its customers and who are engaged in activities related to a store operation as opposed to a warehouse or repackaging operation. Activities may include a combination of clerical type duties and those that require minimal physical lifting. This classification includes occupations such as cashiering, stocking, beauticians, gift wrappers, buyers, product demonstration, booth aids, modeling, outside sales, and inventory taking.

For the purposes of this section, inventory taking is limited to those services provided to store operations which are performed exclusively at ground level. Inventory taking utilizing ladders, step stools, or at any height or when performed for customers not engaged in store operations are to be reported separately in risk classification 7114 provided they do not operate equipment or machinery.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-759, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-759, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-759, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-759, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-759, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-759, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-759, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-759, filed 11/30/79, effective 1/1/80.]

WAC 296-17-760 Classification 7107.

Temporary help company: Bakery, restaurant, or food sundry preparation services, and musicians or entertainers.

This classification applies to employees of a temporary help company who are assigned on a temporary basis to its customers and who are engaged in activities such as baking, cooking, food preparation, waiting and busing tables, and dishwashing, or who are assigned to a customer and who are engaged as musicians or entertainers.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-760, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-760, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-760, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-760, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-760, filed

11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-760, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-760, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-760, filed 11/30/79, effective 1/1/80.]

WAC 296-17-761 Classification 7108.

Temporary help company: Packaging and repackaging of dry goods such as clothing, wearing apparel, textile, and related articles of trade; retail products such as books, china, and glassware; and pharmaceuticals as part of the distribution and preshipping process

This classification applies to employees of a temporary help company who are assigned on a temporary basis to its customers and who are engaged in warehousing or repackaging of items such as clothing, fabric, yarn, shoes, glassware, art, linens, kitchenware, drugs and pharmaceutical preparations, computer discs, bulk film or cassette tapes and records. This classification excludes any assembly or freight handling of wood, metal, plastic, or masonry products to be reported separately in risk classification 7114 provided they do not operate equipment or machinery.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-761, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-761, filed 5/31/88, effective 7/1/88; 87-12-032 (Order 87-12), § 296-17-761, filed 5/29/87, effective 7/1/87; 86-12-041 (Order 86-18), § 296-17-761, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-761, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-761, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-761, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-761, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-761, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-761, filed 11/30/79, effective 1/1/80.]

WAC 296-17-762 Classification 7109.

Temporary help company: Electronic, precision, and scientific equipment assembly and nonfield technician services.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers engaged in the assembly of electronic or biomedical equipment and employees engaged in printing and bindery work. This classification includes occupations such as electronic assemblers, mechanical assemblers, electromechanical assemblers, quality control inspectors, test technicians, kit pullers, storekeepers, upholsterers, laboratory technicians, printers, offset operators, lead typesetters, and bindery workers.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-762, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-762, filed 5/31/88, effective 7/1/88; 85-24-032 (Order 85-33), § 296-17-762, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-762, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-762, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-762, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-762, filed 11/30/79, effective 1/1/80.]

WAC 296-17-76201 Classification 7110.

Temporary help company: Field engineer and field technician services.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers who are engaged in duties away from the customers premises and who are providing field engineering, field technician, traffic counters and surveying services, telephone installation and service within buildings, vending machine service and parking lot or garage attendants, weigh scale attendants, and service station attendants excluding mechanics.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-76201, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76201, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76202 Classification 7111.

Temporary help company: Health care, medical laboratory, quality control services, testing laboratories, N.O.C., homemaker services and home health services.

This classification applies to employees of a temporary help company who are assigned on a temporary basis to its customers and who are providing health care services and includes such employments as therapists, nurses, nurses aides, physicians, dental hygienists, laboratory technicians and assistants.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-76202, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76202, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76203 Classification 7112.

Temporary help company: Agricultural services.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are engaged in any aspects of agricultural work such as field crops, livestock, stables, dairies, nurseries and greenhouses including the operation of power driven farm machinery or equipment.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76203, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76204 Classification 7113.

Temporary help company: Janitorial, plant or facility supplemental maintenance and groundskeeping services.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are engaged in janitorial work, preoccupancy building cleanup, plant maintenance, and groundskeeping or grounds maintenance work to an existing landscape such as mowing lawns, pruning shrubs and weeding as compared to new landscape construction work. Landscape workers involved exclusively in hand labor work such as raking, digging, using wheel barrow to haul soil, beauty bark or decorative rock, whether performed as maintenance of existing landscape or new landscape work are subject to this risk classification (7113). Separately report employees engaged in exterior window cleaning, debris or building material cleanup and removal, and new landscape construction (i.e., clearing of land, installation of underground sprinkler systems, moving boulders) in risk classification 7118.

Tree removal to be reported separately in risk classification 7121. A division of worker hours is not permitted between this classification and any other classification.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-76204, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76204, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76205 Classification 7114.

Temporary help company: Assembly work and freight handling, N.O.C.

This classification applies to employees of a temporary help company assigned on a temporary basis to customers of a temporary help company engaged in the assembly of wood, metal, plastic, or masonry products during shipping or receiving; and freight handling such as furniture, tires, and other products made of wood, metal, plastic, or masonry products during shipping and receiving. Employees assigned this classification could use small power driven hand tools in the assembly process, and nonpower pallet jacks and hand trucks for the freight handling activity. This classification also includes inventory takers, N.O.C. Employees whose duties include the operation of power driven equipment or machinery, although they may also be engaged in assembly work or freight handling activities, are to be reported without division of hours in risk classification 7117.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-76205, filed 5/31/93, effective 7/1/93. Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76205, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76206 Classification 7115.

Temporary help company: Cannery or food processing services, including fresh fruit and vegetable packing and food dehydrating processes.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are assigned to work in a cannery, fruit and vegetable packing or freezer operation. This classification includes employees engaged in cooking or otherwise preparing food prior to packaging or canning, but excludes employees engaged in plant or cannery equipment or machinery operations or maintenance which are to be reported separately in risk classification 7117.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76206, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76207 Classification 7116.

Temporary help company: Flagging for public utility, power, water, or gas line construction.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are engaged in flagging services for a public utility company involved in the extension of overhead or underground power line construction or underground water or gas line construction.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76207, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76208 Classification 7117.

Temporary help company: Machine operators and skilled craftpersons—plant or shop operations, N.O.C.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers who operate power driven equipment or machinery such as forklifts, table saws, drill presses, industrial packaging and processing equipment or machinery and skilled craftpersons such as machinists, mechanics, welders, tool and die makers, carpenters, cabinet makers, and who are assigned to work in the customer's plant or shop but does not apply to maritime trades or plant maintenance workers.

This classification includes such industries as cabinet shops, lumber remanufacturing, canneries, amusement parks, sign paint shops, laundries, printing shops but would exclude shake or shingle mills.

Employees whose duties include work at a construction site are to be reported without a division of hours in risk classification 7118 except for those employees working in the specialty trades of plumbing, electrical wiring, or sheet metal work, who are subject to this risk classification (7117). Employees assigned to work in maritime trades subject to Washington workers compensation laws are to be reported separately in risk classification 7120. Employees assigned to work in a customer's plant as maintenance workers are to be reported separately in risk classification 7113.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76208, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76209 Classification 7118.

Temporary help company: Construction.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are engaged in any aspect of construction work such as road, underground or overhead utility lines, fence, metal erection, signs or lighting including the operation of equipment, machinery, and tools by such employees. This classification also applies to construction security personnel and flaggers, N.O.C. Employees working in the specialty trades of plumbing, electrical wiring, or sheet metal work are to be reported separately in risk classification 7117.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76209, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76210 Classification 7119.

Temporary help company: Commercial vehicle operations, N.O.C. and sawmill operations.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are engaged in commercial vehicle operations such as truck, delivery, and taxi drivers or who are engaged in any aspect of sawmill work, such as operating machinery, grading lumber, or sorting and stacking lumber.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76210, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76211 Classification 7120.

Temporary help company: Hazardous waste handling and maritime employments.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers who are engaged in hazardous waste handling or maritime employments subject to Washington workers compensation laws including diving or subaqueous work.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76211, filed 5/31/88, effective 7/1/88.]

WAC 296-17-76212 Classification 7121.

Temporary help company: Logging, shake or shingle mills, and aircraft flight crew members.

This classification applies to employees of a temporary help company assigned on a temporary basis to its customers and who are engaged in any phase of logging or aircraft operations or who are assigned to work in any lumbering mill including equipment or machinery operators related to industries subject to this classification.

[Statutory Authority: RCW 51.16.035. 88-12-050 (Order 88-06), § 296-17-76212, filed 5/31/88, effective 7/1/88.]

WAC 296-17-763 Classification 7201.

State government - this classification is to be used to report all employments of workers assigned to work at state operated facilities that provide patient or health care of any type. Usage of this classification is not limited to state-operated hospitals as it is intended to also cover health care facilities at state schools, infirmaries at correctional institutions, travelling nurses and physicians, etc.

This classification excludes clerical office and white collar professional employments that are not engaged in providing or attending to patient care and all blue collar employments

See risk classifications 4902 (WAC 296-17-651), 5307 (WAC 296-17-67901) and 7103 (WAC 296-17-756) for other state government operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-763, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-763, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-763, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-763, filed 11/30/79, effective 1/1/80.]

WAC 296-17-764 Classification 7202.

Real estate agencies

This classification includes clerical office and sales personnel but, excludes building management and/or property development.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-764, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-764, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-764, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-764, filed 11/30/79, effective 1/1/80.]

WAC 296-17-765 Classification 7203.

Community service workers

This classification includes all community service workers performing work for counties, cities, towns, state agencies, or nonprofit organizations pursuant to court order or under the provisions of chapter 13.40 RCW.

[Statutory Authority: RCW 51.16.035. 87-12-032 (Order 87-12), § 296-17-765, filed 5/29/87, effective 7/1/87; 85-24-032 (Order 85-33), § 296-17-765, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1). 84-12-048 (Order 84-12), § 296-17-765, filed 6/1/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-765, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-765, filed 11/30/81, effective 1/1/82.]

WAC 296-17-766 Classification 7204.

Preferred workers

This classification includes all preferred workers in accordance with the provisions of RCW 51.16.120(3) and WAC 296-16-010.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-766, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-766, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-766, filed 11/30/81, effective 1/1/82.]

WAC 296-17-772 Classification 7301.

Dairy farms

This classification includes all farm operations related and incidental to the enterprise described and applies to all acreage devoted to the raising of these animals.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-772, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-772, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-772, filed 11/29/82, effective 1/1/83.]

WAC 296-17-773 Classification 7302.

Livestock farms

Parimutuel horse racing: Proprietors, partners, and corporate officers

This subclassification is limited in scope to excluded employment contained in RCW 51.12.020 (5) and (8) "Sole proprietors, partners, and corporate officers" who elect workers compensation insurance on a voluntary basis. See WAC 296-17-350(2) "Excluded employments" for premium reporting and calculations.

Riding academies

This classification includes all farm operations related and incidental to the enterprises described above and applies to all acreage devoted to the raising of these animals.

[Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-773, filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-773, filed 5/31/88; 85-24-032 (Order 85-33), § 296-17-773, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-773, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-773, filed 11/29/82, effective 1/1/83.]

WAC 296-17-777 Classification 7307.

Christmas tree farms - all operations including planting, pruning, harvesting, baling, packing and delivery

Retail operations (i.e., cashiers, parking attendants, customer assistants, etc.) of Christmas tree u-cut farms or retail

sales lots are to be reported separately in classification 4805

Classification 7307 and classification 5004 shall not be assigned to the same risk unless the operations described by these classifications are conducted as separate and distinct businesses and each business has separate and distinct employees.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-777, filed 5/31/93, effective 7/1/93; 89-24-051 (Order 89-22), § 296-17-777, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-777, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-777, filed 11/29/82, effective 1/1/83.]

WAC 296-17-778 Classification 7308.

Animal shelters

Dog grooming parlors

Dog pounds

Humane societies

This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-778, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-778, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-778, filed 11/30/83, effective 1/1/84.]

WAC 296-17-779 Classification 7309.

Work activity centers

This classification is only applicable to businesses who have employees listed on their Community Rehabilitation Program (CRP) subminimum wage certificate as issued by the United States Department of Labor. This classification excludes professional, clerical, and other blue-collar employments which will be separately rated in risk classification 6709 (WAC 296-17-740) even though the only operation of the employer may be a work activity center.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-063, § 296-17-779, filed 5/30/94, effective 6/30/94. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-779, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1). 84-11-034 (Order 84-11), § 296-17-779, filed 5/15/84.]

WAC 296-17-850 Experience rating plan—Eligibility and experience period. (1) **Eligibility.** Effective January 1, 1991, and thereafter each employer who has reported experience during the "experience period" shall have his/her base rates multiplied by an "experience factor" calculated in accordance with the rules of this manual. The development of the "experience factor" as set forth in WAC 296-17-855 shall include losses and exposure reported in all risk classifications.

(2) **Experience period.** The "experience period" shall be the oldest three of the four fiscal years preceding the effective date of premium rates as set forth in WAC 296-17-895.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-20-092, § 296-17-850, filed 10/1/90, effective 11/1/90. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-850, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-850, filed 5/29/87, effective 7/1/87; 86-12-041 (Order 86-18), § 296-17-850, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-850, filed 11/27/85, effective 1/1/86; 85-13-046 (Order 85-13), § 296-17-850, filed 6/17/85; 82-24-047 (Order 82-38), § 296-17-850, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-850, filed 11/30/79, effective 1/1/80; Order 76-18, § 296-17-850, filed 5/28/76, effective 7/1/76; Order 74-40, § 296-17-850, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-850, filed 11/9/73, effective 1/1/74.]

WAC 296-17-855 Experience modification. The basis of the experience modification shall be a comparison of the actual losses charged to an employer during the experience period with the losses which would be expected for an average employer reporting the same exposures in each classification. The comparison shall contain actuarial refinements designed to mitigate the effects of losses which may be considered catastrophic or of doubtful statistical significance, due consideration being given to the volume of the employer's experience. Except for those employers who qualify for an adjusted experience modification as specified in WAC 296-17-860 or 296-17-865, the experience modification shall be calculated from the formula:

$$\text{MODIFICATION} = \frac{Ap + WAe + (1\text{-}W)\,Ee + B}{E + B}$$

The components Ap, WAe, and (1-W) Ee are values which shall be charged against an employer's experience record. The component, E, shall be the expected value of these charges for an average employer reporting the same exposures in each classification. The meaning and function of each symbol in the formula is specified below.

"Ap" signifies "primary actual losses." For each claim the primary actual loss is defined as that portion of the claim which is considered completely rateable for all employers and which is to enter the experience modification calculation at its full value. For each claim in excess of $9,271 the primary actual loss shall be determined from the formula:

$$\text{PRIMARY LOSS} = \frac{23{,}177}{\text{Total loss} + 13{,}906} \times \text{total loss}$$

Primary actual losses for selected claim values are shown in Table I. For each claim less than $9,271 the full value of the claim shall be considered a primary loss.

"Ae" signifies "excess actual losses." For each claim the excess actual loss is defined as that portion of the claim which is not considered completely rateable for all employers. The excess actual loss for each claim shall be determined by subtracting the primary loss from the total loss.

"W" signifies "W value." For each employer, the W value determines the portion of the actual excess losses which shall be included in the calculation of his experience modification, due consideration being given to the volume of his experience. This amount is represented by the symbol "WAe" in the experience modification formula. W values are set forth in Table II.

"E" signifies "expected losses." An employer's expected losses shall be determined by multiplying his reported exposure in each classification during the experience period by the classification expected loss rate. Expected loss rates are set forth in Table III.

"Ee" signifies "expected excess losses." Expected losses in each classification shall be multiplied by the classification "D-Ratio" to obtain "expected primary losses." Expected

excess losses shall then be calculated by subtracting expected primary losses from expected total losses. Each employer shall have a statistical charge included in the calculation of his experience modification, said charge to be actuarially equivalent to the amount forgiven an average employer because of the exclusion of a portion of his excess actual losses. This charge is represented by "(1-W) Ee" in the experience modification formula. D-Ratios are set forth in Table III.

"B" signifies "B value" or "ballast." In order to limit the effect of a single severe accident on the modification of a small employer, a stabilizing element (B value) shall be added to both actual and expected losses. B values are set forth in Table II.

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-855, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-855, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-855, filed 5/31/93, effective 7/1/93; 92-24-063, § 296-17-855, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-855, filed 11/27/91, effective 1/1/92; 90-24-042, § 296-17-855, filed 11/30/90, effective 1/1/91; 89-24-051 (Order 89-22), § 296-17-855, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-855, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-855, filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-855, filed 11/26/86. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-855, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-855, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-855, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-855, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-855, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-855, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-855, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-855, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-855, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-855, filed 11/9/73, effective 1/1/74.]

WAC 296-17-860 Transition adjustment. In the event that an employer has no compensable accidents during the experience period and the experience modification calculated in accordance with WAC 296-17-855 is greater than the experience modification shown in Table IV, WAC 296-17-890 then such modification shall be reduced to the value shown in Table IV. For the purpose of this rule, a compensable accident is defined as one which has resulted in, or is expected to result in, time loss compensation, permanent disability or death.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-860, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-860, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-860, filed 11/9/73, effective 1/1/74.]

WAC 296-17-865 Experience modification limitations. (1) Notwithstanding the experience modification otherwise obtained in this manual, no employer's experience modification shall increase or decrease by more than 25% during any one year except as provided in subparagraph (2) below.

(2) The 25% limitation on the change in the experience modification shall not apply in the following cases:

(a) In cases where it would cause an employer with better than average experience during the experience period to receive an experience modification greater than 1.00.

(b) In cases where it would cause an employer with worse than average experience during the experience period to receive a modification less than 1.00.

In the above specified cases the employer's modification shall be allowed to decrease or to increase, as the case may be, to 1.00.

[Order 77-27, § 296-17-865, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-865, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-865, filed 11/9/73, effective 1/1/74.]

WAC 296-17-86502 Medical aid experience modification limitations. The medical aid fund premiums shall be experience rated beginning January 1, 1989, using the reported past experience of employers as provided for in the department's experience rating plan. However, the initial experience rating adjustment for each employer shall be made from a base modification of 1.0000, with adjustments limited to twenty-five percent annually until the actual experience rating developed by the department for each employer has been reached or four years from the effective date of this section, whichever comes first. Thereafter, adjustments will be made in accordance with the parameters established by the department's experience rating plan.

[Statutory Authority: RCW 51.16.035. 88-16-012 (Order 88-12), § 296-17-86502, filed 7/22/88, effective 1/1/89.]

WAC 296-17-870 Evaluation of actual losses. Except as provided in the following subsections of this paragraph, actual losses shall include all payments as of the "valuation date" for each claim arising from an accident occurring during the experience period. Losses for claims open as of the valuation date may also include a reserve for future payments. Actual losses on claims for accidents occurring outside of the experience period shall not be included.

(1) **Valuation date.** The valuation date shall be on and include December 31, one year and one day immediately preceding the effective date of premium rates as set forth in WAC 296-17-895. For experience modifications effective January 1, 1990, and thereafter, the valuation date shall be June 1, seven months immediately preceding the effective date of premium rates.

(2) **Retroactive adjustments - revision of losses between valuation dates.** No claim value shall be revised between valuation dates and no retroactive adjustment of an experience modification shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where loss values are included or excluded through mistake other than error of judgment.

(b) In cases where a third party recovery is made.

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120.

(d) In cases where a claim, which was previously evaluated as a compensable claim, is closed and is determined to be noncompensable (ineligible for benefits other than medical treatment).

(e) In cases where a claim is closed and is determined to be ineligible for any benefits.

In the above specified cases retroactive adjustment of the experience modification shall be made for each rating in which the claim was included. Retroactive adjustments will not be made for rating periods more than ten years prior to the date on which the claim status was changed.

(3) **Average death value.** Each fatality occurring to a worker included within the mandatory or elective coverage of Title 51 RCW shall be assigned the "average death value," said value to be the average incurred cost for all such fatalities occurring during the experience period. The average death value is set forth in Table II.

(4) **Third party recovery.** In the event of a third party recovery on a claim, the employer shall be charged for a portion of the actual loss amount, gross of such recovery, established on the claim for each year in which the claim's injury date falls within the experience period (see WAC 296-17-850). This portion shall be calculated at the time the recovery is made, and shall be determined by taking the ratio of the total cost of the claim, including attorneys' fees, after recovery, to the total cost of the claim before recovery. If the claim is open at the time the recovery is made, then costs before and after recovery may include an allowance for future claim payments. Both the primary and excess components of the actual loss amount shall be reduced in the same proportion.

(5) **Second injury claims.** The primary and excess values of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

(6) **Occupational disease claims.** When a claim results from an employee's exposure to an occupational disease hazard, the "date of injury," for the purposes of experience rating, shall be the date on which the disability was diagnosed, giving rise to the filing of a claim for benefits. The cost of any occupational disease claim, paid from the accident fund and medical aid fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment involving exposure to the hazard. Each insured employer who had employed the claimant during the experience period, and for at least ten percent of the claimant's exposure to the hazard, shall be charged for his share of the claim based upon the prorated costs.

(7) **Maximum claim value.** No claim shall enter an employer's experience record at a value greater than the "maximum claim value." The maximum claim value is set forth in Table II.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-13-018, § 296-17-870, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-870, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-870, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 88-16-012 (Order 88-12), § 296-17-870 filed 7/22/88, effective 1/1/89; 81-24-042 (Order 81-30), § 296-17-870, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-870, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-870, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-870, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-870, filed 11/9/73, effective 1/1/74.]

WAC 296-17-873 Responsibility for past experience. WAC 296-17-87301 through 296-17-87306 shall be used to determine the assignment of past loss experience associated with a change in business ownership for experience rating purposes. It is the intent of these rules that every firm (business) shall be responsible for its past experience irrespective of ownership as long as the firm (business) continues to conduct operations which are subject to Washington Workers' Compensation Act. When a business or portion of a business is sold, the new owner or owners of such business or portion thereof shall also take over the past loss experience associated with the business unless another treatment is specified in these rules.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-873, filed 5/31/93, effective 7/1/93; 90-20-092, § 296-17-873, filed 10/1/90, effective 11/1/90; 89-24-051 (Order 89-22), § 296-17-873, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-873, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87301 Definitions. The definitions in this section shall apply throughout WAC 296-17-873 through 296-17-87308.

(1) "Entity" means an individual, partnership, corporation, unincorporated association, or fiduciary operation (e.g. trust, receivership, or estate of deceased individual).

(2) "Majority interest" means more than fifty percent ownership in the firm (business). If the owners of the firm (business) are a partnership, majority interest means more than fifty percent of the general partners' ownership in the firm (business). Majority interest in a partnership shall be determined in proportion to the general partners' ownership of the firm (business). For example, in a three-way partnership . . . partner A owns twenty percent of the business, partner B owns twenty percent of the business, and partner C owns sixty percent of the business . . . if partner A sold his/her share of the business, a majority interest still exists as partners B and C retain a majority interest (eighty percent) in the firm (business). Limited partners shall not be considered to have an ownership interest for purpose of these rules.

(3) "Joint venture" means a combination of two or more entities, entered into for the purpose of carrying to completion a specified job of limited duration.

(4) "Employee leasing entity" means a firm (business) which provides workers on a long-term basis to another firm.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-20-092, § 296-17-87301, filed 10/1/90, effective 11/1/90; 89-24-051 (Order 89-22), § 296-17-87301, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87301, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87304 Change in ownership with an accompanying change in business activities. When a majority change in the ownership of a firm (business) is accompanied by a change in the business activity of the firm (business) and this change is sufficient to result in a reclassification of the basic classification assigned to the firm (business), then the past experience, prior to the change, shall be excluded from future experience ratings of the acquiring entity. If the change in business activities is not sufficient to result in a reclassification of the basic classification assigned to the firm (business), the acquiring entity shall retain the past experience attributable to the firm (business) or portion thereof which was purchased. For purposes of

this rule, the term "basic classification" shall mean the classification other than standard exception classifications as defined in WAC 296-17-440 which produces the largest number of worker hours during the calendar year in which the change in business operations is noted. The basic classification of a business shall be determined in accordance with WAC 296-17-310 (2) and (7) "overview" and "assignment of classifications."

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-20-092, § 296-17-87304, filed 10/1/90, effective 11/1/90.]

WAC 296-17-87305 Initial recalculation of experience factor. When an entity acquires the past experience of an existing firm (business) or portion thereof, the following treatment shall apply until the next date for the general calculation of all employers' experience factors. WAC 296-17-865, "Experience modification limitations" shall not apply in these situations. The purpose of this subsection is to produce the same premium level that would have been generated had no change in the ownership of a firm (business) occurred.

(1) Acquiring entity retains all rating experience associated with the firm (business), or portion thereof, being acquired. The selling entity shall revert to an experience factor of unity (1.0000) until such time as it may requalify for experience rating or unless another treatment is specified in these rules.

(2) If the acquiring entity already has an experience factor, it shall be assigned a weighted average of its existing experience factor and the acquired experience factor. Weights will be based on expected losses. In the event the acquiring entity does not have an existing experience factor, it shall be assigned an experience factor developed from the past experience of the firm (business) or portion thereof being acquired.

(3) If the past experience of the firm (business) cannot be segregated between the operations remaining with the selling entity and the operations being taken over by the acquiring entity, then the entire experience of the firm (business) shall remain with the selling entity. In the event that the past experience can be segregated, the following shall apply:

(a) Separate experience factors shall be calculated for each portion of the firm (business) being sold using the experience rating procedures in WAC 296-17-855 through 296-17-870.

(b) Both experience factors shall be increased or decreased in the same proportion, if necessary, so that their weighted average is the same as the selling entity's experience factor prior to the sale or change.

(c) The selling entity shall be assigned the experience factor for the experience it is retaining.

(d) The experience factor developed in (a) and (b) of this subsection shall be used in accordance with subsection (2) of this section.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-20-092, § 296-17-87305, filed 10/1/90, effective 11/1/90; 89-24-051 (Order 89-22), § 296-17-87305, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-87305, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87305, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87306 Combination of entities. Separate entities shall be combined for experience rating purposes when the same person or persons and/or a single corporation owns a majority interest in each of the entities.

Note: If two or more different combinations are possible in accordance with the provisions of this section, the combination producing the greatest amount of expected losses during the experience period shall be made. The experience of any entity used in such combinations may not be otherwise used in combination with any other entity. The experience used in a rating of combination shall be subject to the provisions of WAC 296-17-87305 (Initial recalculation of experience factor).

Exceptions:

(1) Individual trusts may not be combined for experience rating purposes with operations of the trustee nor with the operations of any other trusts. However, two or more trusts having identical trustees and also having identical beneficiaries shall be combined.

(2) Joint venture operations may not be combined with the operations of any other entity, even though the members of the joint venture are identically owned.

This subsection applies only where the entities are or have been operating and insured concurrently in Washington. It does not apply where concurrent operations are for a short period of time, not exceeding one year, if the operation of the original entity during the period both entities were operating, was restricted to the completion of projects entered into prior to the new entity commencing operations. Newly formed joint ventures shall be assigned an experience factor of unity (1.0000).

(3) Employee leasing firms (businesses) shall be required to establish a subaccount for each client for which they supply workers. This account will be a subaccount number of their client's account number. The client's account and the employee leasing firm's subaccount shall be combined to produce a single experience factor which will be shared by both the client and employee leasing firm (business).

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-20-092, § 296-17-87306, filed 10/1/90, effective 11/1/90. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87306, filed 11/30/79, effective 1/1/80.]

WAC 296-17-875 Table I.

Primary Losses for Selected Claim Values

CLAIM VALUE	PRIMARY LOSS
9,271	9,271
10,553	10,000
12,562	11,000
14,930	12,000
17,764	13,000
21,215	14,000
25,510	15,000
31,002	16,000
48,351	18,000
145,175*	21,151
231,770**	21,865

* Average death value

** Maximum claim value

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-875, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-875, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 92-24-063, § 296-17-875, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-875, filed 11/27/91, effective 1/1/92; 90-24-042, § 296-17-875, filed 11/30/90, effective 1/1/91; 89-24-051 (Order 89-22), § 296-17-875, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-875, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-875, filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-875, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-875, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-875, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-875, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-875, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-875, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-875, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-875, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-875, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-875, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-875, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-875, filed 11/30/76; Order 75-38, § 296-17-875, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-875, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-875, filed 11/9/73, effective 1/1/74.]

WAC 296-17-880 Table II.

"B" and "W" Values

Maximum Claim Value = $231,770
Average Death Value = $145,175

Expected Losses			B	W
5,021	&	Under	43,730	0.00
5,022	-	10,117	43,293	0.01
10,118	-	15,290	42,855	0.02
15,291	-	20,541	42,418	0.03
20,542	-	25,873	41,981	0.04
25,874	-	31,286	41,544	0.05
31,287	-	36,784	41,106	0.06
36,785	-	42,369	40,669	0.07
42,370	-	48,042	40,232	0.08
48,043	-	53,806	39,794	0.09
53,807	-	59,664	39,357	0.10
59,665	-	65,617	38,920	0.11
65,618	-	71,670	38,482	0.12
71,671	-	77,823	38,045	0.13
77,824	-	84,080	37,608	0.14
84,081	-	90,444	37,171	0.15
90,445	-	96,918	36,733	0.16
96,919	-	103,505	36,296	0.17
103,506	-	110,207	35,859	0.18
110,208	-	117,029	35,421	0.19
117,030	-	123,974	34,984	0.20
123,975	-	131,045	34,547	0.21
131,046	-	138,246	34,109	0.22
138,247	-	145,582	33,672	0.23
145,583	-	153,055	33,235	0.24
153,056	-	160,670	32,798	0.25
160,671	-	168,432	32,360	0.26
168,433	-	176,344	31,923	0.27
176,345	-	184,413	31,486	0.28
184,414	-	192,642	31,048	0.29
192,643	-	201,037	30,611	0.30
201,038	-	209,603	30,174	0.31
209,604	-	218,346	29,736	0.32
218,347	-	227,271	29,299	0.33
227,272	-	236,385	28,862	0.34
236,386	-	245,694	28,425	0.35
245,695	-	255,204	27,987	0.36
255,205	-	264,923	27,550	0.37
264,924	-	274,858	27,113	0.38
274,859	-	285,017	26,675	0.39
285,018	-	295,407	26,238	0.40
295,408	-	306,037	25,801	0.41
306,038	-	316,915	25,363	0.42
316,916	-	328,051	24,926	0.43
328,052	-	339,455	24,489	0.44
339,456	-	351,136	24,052	0.45
351,137	-	363,105	23,614	0.46
363,106	-	375,374	23,177	0.47
375,375	-	387,955	22,740	0.48
387,956	-	400,859	22,302	0.49
400,860	-	414,100	21,865	0.50
414,101	-	427,692	21,428	0.51
427,693	-	441,650	20,990	0.52
441,651	-	455,988	20,553	0.53
455,989	-	470,723	20,116	0.54
470,724	-	485,873	19,679	0.55
485,874	-	501,456	19,241	0.56
501,457	-	517,490	18,804	0.57
517,491	-	533,998	18,367	0.58
533,999	-	550,999	17,929	0.59
551,000	-	568,519	17,492	0.60
568,520	-	586,580	17,055	0.61
586,581	-	605,211	16,617	0.62
605,212	-	624,437	16,180	0.63
624,438	-	644,290	15,743	0.64
644,291	-	664,802	15,306	0.65
664,803	-	686,005	14,868	0.66
686,006	-	707,937	14,431	0.67
707,938	-	730,637	13,994	0.68
730,638	-	754,146	13,556	0.69
754,147	-	778,510	13,119	0.70
778,511	-	803,776	12,682	0.71
803,777	-	829,998	12,244	0.72
829,999	-	857,231	11,807	0.73
857,232	-	885,535	11,370	0.74
885,536	-	914,977	10,933	0.75
914,978	-	945,628	10,495	0.76
945,629	-	977,564	10,058	0.77
977,565	-	1,010,870	9,621	0.78
1,010,871	-	1,045,636	9,183	0.79
1,045,637	-	1,081,963	8,746	0.80
1,081,964	-	1,119,960	8,309	0.81
1,119,961	-	1,159,744	7,871	0.82
1,159,745	-	1,201,449	7,434	0.83
1,201,450	-	1,245,216	6,997	0.84
1,245,217	-	1,291,206	6,559	0.85
1,291,207	-	1,339,593	6,122	0.86
1,339,594	-	1,390,572	5,685	0.87
1,390,573	-	1,444,358	5,248	0.88
1,444,359	-	1,501,194	4,810	0.89
1,501,195	-	1,561,347	4,373	0.90
1,561,348	-	1,625,119	3,936	0.91
1,625,120	-	1,692,849	3,498	0.92
1,692,850	-	1,764,921	3,061	0.93

1,764,922	-	1,841,769	2,624	0.94
1,841,770	-	1,923,886	2,186	0.95
1,923,887	-	2,011,838	1,749	0.96
2,011,839	-	2,106,272	1,312	0.97
2,106,273	-	2,207,936	875	0.98
2,207,937	-	2,317,699	437	0.99
2,317,700 & Over			0	1.00

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-880, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-880, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 92-24-063, § 296-17-880, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-880, filed 11/27/91, effective 1/1/92; 90-24-042, § 296-17-880, filed 11/30/90, effective 1/1/91; 89-24-051 (Order 89-22), § 296-17-880, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-880, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-880, filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-880, filed 11/26/86. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-880, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-880, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-880, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-880, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-880, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-880, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-880, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-880, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-880, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-880, filed 11/30/76; Order 75-38, § 296-17-880, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-880, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-880, filed 11/9/73, effective 1/1/74.]

WAC 296-17-885 Table III.

Expected Loss Rates and D-Ratios
Expected Loss Rates in Dollars Per Worker Hour for Indicated Fiscal Year

Class	1991	1992	1993	D-Ratio
0101	1.1716	1.1383	1.0065	0.401
0102	1.1587	1.1262	0.9968	0.420
0103	1.3483	1.3127	1.1659	0.456
0104	1.7145	1.6640	1.4631	0.322
0105	1.2145	1.1838	1.0542	0.475
0107	1.0986	1.0673	0.9432	0.417
0108	0.9125	0.8864	0.7845	0.454
0109	3.9389	3.8219	3.3694	0.372
0201	2.2564	2.1885	1.9280	0.372
0202	2.6469	2.5768	2.2870	0.454
0206	1.7910	1.7364	1.5281	0.392
0301	0.5469	0.5349	0.4791	0.536
0302	1.7283	1.6760	1.4772	0.396
0306	0.9102	0.8859	0.7856	0.430
0307	0.6698	0.6541	0.5838	0.515
0403	1.2632	1.2309	1.0947	0.471
0502	1.1941	1.1594	1.0236	0.411
0504	1.2682	1.2322	1.0896	0.410
0506	3.9920	3.8751	3.4176	0.382
0507	2.7521	2.6765	2.3721	0.429
0508	2.7937	2.7061	2.3731	0.357
0509	1.5714	1.5279	1.3517	0.389
0510	1.2550	1.2223	1.0863	0.459
0511	1.0066	0.9816	0.8748	0.537
0512	1.4228	1.3845	1.2289	0.469
0513	0.6560	0.6389	0.5678	0.459
0514	1.2550	1.2223	1.0863	0.466
0515	2.3907	2.3193	2.0447	0.389
0516	1.2550	1.2223	1.0863	0.466
0517	1.5684	1.5293	1.3630	0.474
0518	1.4874	1.4439	1.2739	0.393
0519	1.3844	1.3512	1.2053	0.450
0601	0.6322	0.6160	0.5473	0.462
0602	0.3667	0.3577	0.3190	0.546
0603	0.7089	0.6898	0.6120	0.427
0604	1.0457	1.0216	0.9121	0.453
0606	0.2405	0.2364	0.2136	0.608
0607	0.2690	0.2640	0.2377	0.569
0608	0.2676	0.2622	0.2356	0.504
0701	2.2346	2.1587	1.8829	0.317
0803	0.3087	0.3020	0.2702	0.529
0804	0.8505	0.8272	0.7320	0.397
0901	1.4495	1.4103	1.2490	0.422
1002	0.7977	0.7789	0.6960	0.528
1003	0.5790	0.5646	0.5025	0.486
1004	0.4775	0.4658	0.4149	0.478
1005	4.4004	4.2695	3.7681	0.409
1007	0.2594	0.2537	0.2270	0.500
1101	0.4778	0.4676	0.4195	0.559
1102	1.1142	1.0842	0.9622	0.447
1103	0.4583	0.4486	0.4026	0.537
1104	0.5205	0.5102	0.4586	0.538
1106	0.2269	0.2237	0.2029	0.597
1108	0.3956	0.3881	0.3487	0.513
1109	0.6794	0.6658	0.5984	0.501
1301	0.2936	0.2873	0.2575	0.528
1303	0.1645	0.1607	0.1437	0.534
1304	0.0204	0.0200	0.0181	0.556
1305	0.3146	0.3084	0.2772	0.547
1401	0.5805	0.5678	0.5090	0.503
1404	0.5029	0.4912	0.4394	0.517
1405	0.4801	0.4699	0.4207	0.499
1501	0.3163	0.3092	0.2767	0.538
1507	0.2659	0.2607	0.2343	0.578
1701	1.5108	1.4659	1.2901	0.353
1702	1.4987	1.4550	1.2822	0.354
1703	0.3426	0.3341	0.2977	0.514
1704	0.7294	0.7106	0.6311	0.406
1801	0.8025	0.7805	0.6908	0.447
1802	0.9177	0.8942	0.7958	0.479
2002	0.5087	0.4987	0.4485	0.559
2003	0.3715	0.3644	0.3276	0.555
2004	0.5914	0.5792	0.5201	0.563
2007	0.4424	0.4334	0.3894	0.503
2008	0.2408	0.2355	0.2106	0.498
2009	0.2931	0.2874	0.2587	0.557
2101	0.5748	0.5618	0.5024	0.467
2102	0.3989	0.3913	0.3520	0.570
2104	0.2663	0.2617	0.2362	0.590
2105	0.4877	0.4756	0.4242	0.545
2106	0.3386	0.3316	0.2974	0.531
2201	0.2179	0.2131	0.1910	0.512
2202	0.5094	0.4999	0.4508	0.607
2203	0.2724	0.2674	0.2408	0.571
2401	0.4003	0.3925	0.3530	0.532
2903	0.5991	0.5873	0.5281	0.555
2904	0.6458	0.6319	0.5665	0.528
2905	0.4666	0.4579	0.4127	0.585

2906	0.3164	0.3091	0.2759	0.506
2907	0.4402	0.4313	0.3879	0.591
2908	0.8617	0.8428	0.7548	0.534
2909	0.5088	0.4988	0.4487	0.568
3101	0.7210	0.7023	0.6242	0.444
3102	0.3020	0.2962	0.2666	0.586
3103	0.6505	0.6342	0.5647	0.466
3104	0.4495	0.4389	0.3919	0.522
3105	0.7925	0.7738	0.6905	0.479
3303	0.2095	0.2055	0.1846	0.526
3304	0.5176	0.5078	0.4572	0.572
3309	0.3953	0.3882	0.3505	0.522
3401	0.3522	0.3445	0.3084	0.517
3402	0.4279	0.4183	0.3742	0.523
3403	0.1994	0.1950	0.1741	0.458
3404	0.3897	0.3823	0.3441	0.558
3405	0.2782	0.2722	0.2437	0.543
3406	0.2207	0.2167	0.1952	0.542
3407	0.3015	0.2951	0.2648	0.560
3408	0.0823	0.0806	0.0722	0.534
3409	0.0852	0.0837	0.0754	0.561
3410	0.1847	0.1818	0.1647	0.591
3501	0.8308	0.8101	0.7216	0.440
3503	0.2755	0.2717	0.2471	0.570
3506	0.7037	0.6851	0.6086	0.496
3509	0.3803	0.3733	0.3370	0.640
3510	0.3861	0.3788	0.3412	0.579
3511	0.5418	0.5305	0.4762	0.541
3512	0.3507	0.3451	0.3122	0.582
3602	0.0989	0.0973	0.0880	0.575
3603	0.3457	0.3401	0.3075	0.567
3604	1.2996	1.2699	1.1362	0.541
3605	0.4145	0.4055	0.3635	0.544
3701	0.2537	0.2484	0.2227	0.508
3702	0.4848	0.4747	0.4258	0.555
3707	0.4535	0.4447	0.4005	0.488
3708	0.3020	0.2962	0.2666	0.586
3801	0.2304	0.2255	0.2020	0.524
3802	0.1772	0.1739	0.1568	0.573
3808	0.2682	0.2624	0.2350	0.502
3901	0.1623	0.1597	0.1443	0.604
3902	0.3903	0.3835	0.3462	0.598
3903	1.0550	1.0360	0.9331	0.510
3905	0.1472	0.1452	0.1320	0.623
3906	0.4694	0.4597	0.4129	0.527
3909	0.2006	0.1971	0.1779	0.571
4002	0.6497	0.6338	0.5663	0.560
4101	0.1906	0.1870	0.1683	0.568
4103	0.2220	0.2186	0.1981	0.660
4107	0.1217	0.1196	0.1079	0.555
4108	0.1750	0.1716	0.1544	0.550
4109	0.1906	0.1870	0.1683	0.568
4201	0.2573	0.2510	0.2239	0.535
4301	0.7303	0.7152	0.6417	0.540
4302	0.5963	0.5811	0.5183	0.546
4304	0.5405	0.5297	0.4761	0.561
4305	0.8920	0.8691	0.7735	0.513
4401	0.4679	0.4578	0.4101	0.480
4402	0.5747	0.5638	0.5073	0.567
4404	0.3728	0.3654	0.3283	0.567
4501	0.1245	0.1221	0.1097	0.515
4502	0.0377	0.0370	0.0333	0.540
4504	0.0788	0.0778	0.0707	0.629
4601	0.5748	0.5635	0.5067	0.528
4802	0.2316	0.2268	0.2034	0.557
4803	0.2117	0.2084	0.1888	0.580
4804	0.4798	0.4715	0.4259	0.587
4805	0.2810	0.2757	0.2480	0.524
4806	0.0670	0.0657	0.0591	0.512
4808	0.4351	0.4257	0.3816	0.492
4809	0.2187	0.2149	0.1943	0.626
4810	0.1404	0.1381	0.1247	0.598
4811	0.2351	0.2310	0.2083	0.576
4812	0.3306	0.3234	0.2898	0.544
4813	0.2346	0.2299	0.2065	0.501
4901	0.0415	0.0407	0.0365	0.553
4902	0.0511	0.0501	0.0450	0.572
4903	0.0415	0.0407	0.0365	0.553
4904	0.0219	0.0215	0.0195	0.577
4905	0.2364	0.2330	0.2114	0.629
4906	0.0654	0.0642	0.0578	0.582
4907	0.0578	0.0566	0.0508	0.533
4908	0.0973	0.0968	0.0888	0.604
4909	0.0973	0.0968	0.0888	0.604
4910	0.3699	0.3630	0.3267	0.524
5001	4.2988	4.1695	3.6734	0.367
5002	0.4527	0.4428	0.3969	0.564
5003	1.4123	1.3699	1.2073	0.383
5004	1.7389	1.6958	1.5094	0.461
5005	1.1716	1.1383	1.0065	0.407
5101	0.6891	0.6758	0.6091	0.607
5103	0.7122	0.6976	0.6264	0.548
5106	0.5319	0.5222	0.4702	0.525
5108	0.5925	0.5786	0.5168	0.524
5109	0.5715	0.5578	0.4974	0.503
5201	0.2998	0.2933	0.2626	0.532
5204	0.8676	0.8474	0.7567	0.499
5206	0.4427	0.4316	0.3837	0.437
5207	0.1307	0.1290	0.1172	0.648
5208	0.8474	0.8282	0.7397	0.485
5209	0.6063	0.5943	0.5347	0.557
5301	0.0254	0.0250	0.0225	0.587
5305	0.0379	0.0372	0.0336	0.594
5306	0.0393	0.0386	0.0348	0.551
5307	0.2893	0.2830	0.2535	0.553
6103	0.0538	0.0531	0.0484	0.639
6104	0.2271	0.2230	0.2012	0.575
6105	0.1695	0.1663	0.1497	0.555
6107	0.1240	0.1220	0.1103	0.572
6108	0.4589	0.4507	0.4067	0.582
6109	0.0509	0.0500	0.0450	0.573
6110	0.4171	0.4085	0.3670	0.563
6201	0.2029	0.1988	0.1785	0.543
6202	0.5090	0.4976	0.4448	0.477
6203	0.0756	0.0745	0.0675	0.639
6204	0.1676	0.1650	0.1493	0.582
6205	0.1676	0.1650	0.1493	0.582
6206	0.1676	0.1650	0.1493	0.582
6207	1.0483	1.0340	0.9391	0.589
6208	0.2470	0.2435	0.2206	0.603
6209	0.2123	0.2090	0.1891	0.608
6301	0.1092	0.1068	0.0955	0.462
6302	0.1477	0.1448	0.1301	0.471
6303	0.0580	0.0569	0.0512	0.540

6304	0.1488	0.1470	0.1336	0.613
6305	0.0641	0.0630	0.0570	0.576
6306	0.2371	0.2327	0.2096	0.568
6308	0.0426	0.0418	0.0376	0.573
6309	0.1183	0.1164	0.1053	0.592
6402	0.2516	0.2468	0.2222	0.580
6403	0.1847	0.1818	0.1647	0.591
6404	0.1358	0.1339	0.1216	0.611
6405	0.4812	0.4713	0.4231	0.530
6406	0.0739	0.0728	0.0659	0.596
6407	0.1814	0.1782	0.1606	0.566
6408	0.3123	0.3064	0.2759	0.585
6409	0.4379	0.4281	0.3826	0.523
6410	0.1415	0.1389	0.1252	0.550
6501	0.0822	0.0807	0.0729	0.611
6502	0.0242	0.0238	0.0215	0.574
6503	0.0614	0.0599	0.0532	0.450
6504	0.3728	0.3674	0.3334	0.582
6505	0.0899	0.0886	0.0801	0.544
6506	0.0648	0.0639	0.0579	0.549
6508	0.3273	0.3210	0.2890	0.551
6509	0.1899	0.1870	0.1694	0.600
6601	0.1775	0.1747	0.1581	0.583
6602	0.4225	0.4142	0.3726	0.537
6603	0.2526	0.2480	0.2236	0.570
6604	0.0564	0.0553	0.0498	0.496
6605	0.3227	0.3180	0.2886	0.666
6607	0.1472	0.1452	0.1320	0.629
6608	0.2632	0.2564	0.2280	0.467
6620	0.4750	0.4687	0.4265	0.710
6704	0.1243	0.1221	0.1099	0.562
6705	0.7102	0.6990	0.6331	0.632
6706	0.3613	0.3558	0.3218	0.565
6707	1.5670	1.5425	1.3974	0.624
6708	4.2480	4.1912	3.8006	0.496
6709	0.1744	0.1723	0.1568	0.634
6801	0.2258	0.2212	0.1986	0.569
6802	0.3183	0.3140	0.2850	0.628
6803	1.0236	0.9861	0.8519	0.273
6804	0.1728	0.1696	0.1526	0.599
6809	3.7870	3.7668	3.4561	0.655
6901	0.0241	0.0244	0.0230	0.667
6902	0.6699	0.6498	0.5727	0.382
6903	3.6264	3.5363	3.1282	0.337
6904	0.1953	0.1913	0.1719	0.584
6905	0.2281	0.2240	0.2016	0.564
6906	0.1105	0.1121	0.1057	0.674
6907	1.0315	1.0069	0.8994	0.495
6908	0.3593	0.3519	0.3159	0.569
6909	0.0790	0.0776	0.0701	0.611
7101	0.0291	0.0286	0.0257	0.513
7102	3.4134	3.3901	3.1079	0.591
7103	0.2573	0.2515	0.2250	0.512
7104	0.0234	0.0230	0.0208	0.557
7105	0.0264	0.0259	0.0233	0.545
7106	0.1560	0.1527	0.1368	0.503
7107	0.2302	0.2252	0.2018	0.528
7108	0.1986	0.1953	0.1765	0.587
7109	0.2497	0.2454	0.2215	0.560
7110	0.3103	0.3029	0.2702	0.489
7111	0.4397	0.4303	0.3859	0.519
7112	0.5780	0.5648	0.5046	0.494
7113	0.6402	0.6245	0.5561	0.486
7114	0.6399	0.6311	0.5728	0.625
7115	0.5111	0.4997	0.4468	0.509
7116	0.5579	0.5446	0.4862	0.478
7117	1.4186	1.3931	1.2588	0.538
7118	2.6490	2.5919	2.3190	0.530
7119	1.6583	1.6195	1.4458	0.502
7120	5.1299	5.0196	4.4883	0.443
7121	5.3160	5.1944	4.6382	0.454
7201	0.7814	0.7617	0.6794	0.527
7202	0.0456	0.0447	0.0402	0.522
7203	0.1157	0.1144	0.1040	0.562
7204	0.0000	0.0000	0.0000	0.667
7301	0.5434	0.5310	0.4748	0.382
7302	0.6012	0.5902	0.5320	0.544
7307	0.6164	0.6046	0.5441	0.539
7308	0.2032	0.2003	0.1814	0.577
7309	0.1744	0.1723	0.1568	0.631

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-885, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-885, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 92-24-063, § 296-17-885, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-885, filed 11/27/91, effective 1/1/92; 91-12-014, § 296-17-885, filed 5/31/91, effective 7/1/91; 90-24-042, § 296-17-885, filed 11/30/90, effective 1/1/91; 90-13-018, § 296-17-885, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-885, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-885, filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-885, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-885, filed 5/31/88; 88-12-050 (Order 88-06), § 296-17-885, filed 5/31/88, effective 7/1/88; 88-06-047 (Order 87-33), § 296-17-885, filed 3/1/88; 87-24-060 (Order 87-26), § 296-17-885, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-885, filed 5/29/87, effective 7/1/87. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-885, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-885, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-885, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-885, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-885, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-885, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-885, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-885, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-885, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-885, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-885, filed 11/27/78, effective 1/1/79, effective 1/1/80. Order 77-27, § 296-17-885, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-885, filed 12/1/77; Order 77-10, § 296-17-885, filed 5/31/77; Order 76-36, § 296-17-885, filed 11/30/76; Order 76-18, § 296-17-885, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-885, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-885, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-885, filed 11/9/73, effective 1/1/74.]

WAC 296-17-890 Table IV.

Maximum experience modifications for firms with no compensable accidents:

Expected Loss Range	Maximum Experience Modification
2,194 & Under	0.90
2,195 - 2,347	0.89
2,348 - 2,513	0.88
2,514 - 2,693	0.87

2,694	-	2,887	0.86
2,888	-	3,099	0.85
3,100	-	3,329	0.84
3,330	-	3,579	0.83
3,580	-	3,851	0.82
3,852	-	4,148	0.81
4,149	-	4,471	0.80
4,472	-	4,825	0.79
4,826	-	5,211	0.78
5,212	-	5,634	0.77
5,635	-	6,098	0.76
6,099	-	6,606	0.75
6,607	-	7,165	0.74
7,166	-	7,780	0.73
7,781	-	8,457	0.72
8,458	-	9,204	0.71
9,205	-	10,030	0.70
10,031	-	10,942	0.69
10,943	-	11,953	0.68
11,954	-	13,075	0.67
13,076	-	14,322	0.66
14,323	-	15,709	0.65
15,710	-	17,256	0.64
17,257	-	18,983	0.63
18,984	-	20,915	0.62
20,916	-	23,081	0.61
23,082 & Over			0.60

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-890, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-890, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 92-24-063, § 296-17-890, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-890, filed 11/27/91, effective 1/1/92; 90-24-042, § 296-17-890, filed 11/30/90, effective 1/1/91; 89-24-051 (Order 89-22), § 296-17-890, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-890, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 87-24-060 (Order 87-26), § 296-17-890, filed 12/1/87, effective 1/1/88. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-890, filed 11/26/86. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-890, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-890, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-890, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-890, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-890, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-890, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-890, filed 11/30/79, effective 1/1/80.]

WAC 296-17-895 Industrial insurance accident fund base rates and medical aid base rates by class of industry. Industrial insurance accident fund and medical aid fund base rates by class of industry shall be as set forth below.

Base Rates Effective January 1, 1995

Class	Accident Fund	Medical Aid Fund
0101	1.4247	0.7373
0102	1.4036	0.7403
0103	1.5749	0.9287
0104	2.1193	0.9992
0105	1.3778	0.8837
0107	1.3542	0.6754
0108	1.1318	0.5640
0109	4.8977	2.3380
0201	2.8359	1.3093
0202	3.1142	1.7970
0206	2.3064	0.9900
0301	0.5840	0.4420
0302	2.2016	0.9871
0306	1.0725	0.6118
0307	0.7472	0.5053
0403	1.4548	0.8948
0502	1.4856	0.7179
0504	1.5477	0.7952
0506	4.9474	2.3894
0507	3.2863	1.8121
0508	3.6764	1.4328
0509	1.8642	1.0266
0510	1.4603	0.8730
0511	1.1705	0.7171
0512	1.7015	0.9476
0513	0.7639	0.4560
0514	1.4603	0.8730
0515	3.0165	1.3890
0516	1.4603	0.8730
0517	1.7552	1.1660
0518	1.8547	0.8859
0519	1.4948	1.0730
0601	0.7351	0.4394
0602	0.4245	0.2643
0603	0.8327	0.4803
0604	1.1062	0.8315
0606	0.2259	0.2280
0607	0.2639	0.2420
0608	0.2607	0.2385
0701	3.0988	0.9681
0803	0.3300	0.2472
0804	1.0070	0.5585
0901	1.7204	0.9548
1002	0.8876	0.6087
1003	0.6622	0.4160
1004	0.5366	0.3517
1005	5.5279	2.6017
1007	0.2735	0.2102
1101	0.5055	0.3939
1102	1.3193	0.7504
1103	0.4719	0.3878
1104	0.5174	0.4580
1106	0.1917	0.2353
1108	0.3817	0.3549
1109	0.6580	0.6093
1301	0.3067	0.2433
1303	0.1809	0.1273
1304	0.0191	0.0192
1305	0.3136	0.2764
1401	0.5977	0.4867
1404	0.5441	0.3971
1405	0.4960	0.3980
1501	0.3419	0.2511
1507	0.2700	0.2301
1701	1.8890	0.8741
1702	1.8402	0.9019
1703	0.3927	0.2480

1704	0.8206	0.5239	3902	0.3707	0.3656
1801	0.9765	0.5094	3903	0.9734	0.9930
1802	1.0560	0.6538	3905	0.1221	0.1558
2002	0.5074	0.4484	3906	0.4725	0.4064
2003	0.3687	0.3282	3909	0.1862	0.1907
2004	0.6109	0.5011	4002	0.7430	0.4815
2007	0.4334	0.3924	4101	0.1880	0.1702
2008	0.2547	0.1940	4103	0.2042	0.2174
2009	0.2885	0.2619	4107	0.1125	0.1156
2101	0.5997	0.4686	4108	0.1709	0.1571
2102	0.3973	0.3524	4109	0.1880	0.1702
2104	0.2512	0.2505	4201	0.2950	0.1876
2105	0.5644	0.3520	4301	0.7507	0.6176
2106	0.3466	0.2868	4302	0.6962	0.4263
2201	0.2263	0.1810	4304	0.5467	0.4694
2202	0.5022	0.4612	4305	1.0465	0.6225
2203	0.2657	0.2462	4401	0.4751	0.3958
2401	0.3912	0.3576	4402	0.5684	0.5111
2903	0.5996	0.5261	4404	0.3805	0.3202
2904	0.6717	0.5376	4501	0.1215	0.1107
2905	0.4554	0.4236	4502	0.0357	0.0348
2906	0.3463	0.2433	4504	0.0651	0.0836
2907	0.4528	0.3786	4601	0.5618	0.5140
2908	0.9163	0.6985	4802	0.2423	0.1926
2909	0.5090	0.4478	4803	0.1852	0.2134
3101	0.8246	0.5118	4804	0.4477	0.4568
3102	0.3018	0.2675	4805	0.2697	0.2552
3103	0.7326	0.4765	4806	0.0640	0.0608
3104	0.4991	0.3420	4808	0.4447	0.3670
3105	0.8640	0.6104	4809	0.2069	0.2074
3303	0.2050	0.1860	4810	0.1310	0.1339
3304	0.5104	0.4638	4811	0.2220	0.2198
3309	0.3567	0.3835	4812	0.3509	0.2693
3401	0.3730	0.2856	4813	0.2294	0.2083
3402	0.4618	0.3392	4901	0.0425	0.0352
3403	0.2098	0.1594	4902	0.0523	0.0439
3404	0.3829	0.3492	4903	0.0425	0.0352
3405	0.2973	0.2240	4904	0.0199	0.0212
3406	0.2095	0.2037	4905	0.2055	0.2419
3407	0.3154	0.2514	4906	0.0653	0.0579
3408	0.0858	0.0684	4907	0.0591	0.0492
3409	0.0805	0.0795	4908	0.0566	0.1256
3410	0.1630	0.1850	4909	0.0566	0.1256
3501	0.9162	0.6234	4910	0.3546	0.3376
3503	0.2179	0.3004	5001	5.4002	2.4976
3506	0.8400	0.4726	5002	0.4857	0.3662
3509	0.3784	0.3445	5003	1.7809	0.8190
3510	0.3804	0.3468	5004	1.9548	1.2729
3511	0.5547	0.4611	5005	1.4247	0.7373
3512	0.3124	0.3473	5101	0.6909	0.6139
3602	0.0878	0.0979	5103	0.7281	0.6080
3603	0.3090	0.3405	5106	0.4999	0.4931
3604	1.4196	1.0199	5108	0.6571	0.4522
3605	0.4376	0.3403	5109	0.6402	0.4258
3701	0.2589	0.2143	5201	0.3193	0.2418
3702	0.5058	0.4041	5204	0.9478	0.6700
3707	0.4213	0.4248	5206	0.4986	0.3201
3708	0.3018	0.2675	5207	0.1095	0.1380
3801	0.2406	0.1899	5208	0.9067	0.6688
3802	0.1703	0.1630	5209	0.6024	0.5372
3808	0.2775	0.2228	5301	0.0243	0.0236
3901	0.1497	0.1564	5305	0.0355	0.0358

5306	0.0373	0.0363
5307	0.3117	0.2321
6103	0.0432	0.0586
6104	0.2141	0.2131
6105	0.1651	0.1532
6107	0.1105	0.1219
6108	0.4371	0.4279
6109	0.0496	0.0462
6110	0.4285	0.3568
6201	0.2063	0.1740
6202	0.5354	0.4104
6203	0.0679	0.0753
6204	0.1487	0.1666
6205	0.1487	0.1666
6206	0.1487	0.1666
6207	0.8573	1.1159
6208	0.2130	0.2517
6209	0.1912	0.2094
6301	0.1138	0.0890
6302	0.1396	0.1340
6303	0.0565	0.0520
6304	0.1194	0.1612
6305	0.0580	0.0625
6306	0.2297	0.2159
6308	0.0423	0.0378
6309	0.1062	0.1166
6402	0.2509	0.2234
6403	0.1630	0.1850
6404	0.1142	0.1418
6405	0.4876	0.4130
6406	0.0648	0.0743
6407	0.1722	0.1682
6408	0.3081	0.2800
6409	0.4746	0.3434
6410	0.1341	0.1312
6501	0.0784	0.0771
6502	0.0217	0.0239
6503	0.0704	0.0432
6504	0.3116	0.3900
6505	0.0765	0.0915
6506	0.0540	0.0673
6508	0.3196	0.2953
6509	0.1682	0.1901
6601	0.1567	0.1774
6602	0.4142	0.3776
6603	0.2415	0.2331
6604	0.0534	0.0515
6605	0.2877	0.3259
6607	0.1221	0.1558
6608	0.3038	0.1856
6614	283.6400**	238.0000**
6615	211.8800**	176.7600**
6616	28.1200**	23.5200**
6617	21.0400**	17.6000**
6618	80.8000**	67.8400**
6620	0.4168	0.4917
6704	0.1198	0.1136
6705	0.6471	0.6985
6706	0.3150	0.3623
6707	11.30*	12.44*
6708	3.2570	4.6300
6709	0.1409	0.1887
6801	0.2333	0.1910
6802	0.2705	0.3299
6803	1.5385	0.3053
6804	0.1744	0.1513
6809	2.3520	4.7838
6901	0.0000	0.0451
6902	0.8429	0.3895
6903	4.0311	2.5499
6904	0.2030	0.1654
6905	0.2207	0.2068
6906	0.0000	0.2068
6907	1.1267	0.7995
6908	0.3739	0.3020
6909	0.0745	0.0746
7101	0.0282	0.0263
7102	16.58*	34.60*
7103	0.2755	0.2056
7104	0.0203	0.0236
7105	0.0254	0.0239
7106	0.1604	0.1305
7107	0.2408	0.1905
7108	0.1819	0.1916
7109	0.2304	0.2379
7110	0.3427	0.2354
7111	0.4518	0.3710
7112	0.6218	0.4554
7113	0.7251	0.4661
7114	0.5450	0.6637
7115	0.5451	0.4083
7116	0.6058	0.4331
7117	1.2826	1.3809
7118	2.8220	2.1272
7119	1.8203	1.2733
7120	5.1898	4.2887
7121	5.6092	4.2428
7201	0.9038	0.5638
7202	0.0443	0.0410
7203	0.0877	0.1286
7204	0.0000	0.0000
7301	0.5781	0.4354
7302	0.5665	0.5611
7307	0.5996	0.5560
7308	0.1744	0.2070
7309	0.1409	0.1887

* Daily rate. The daily rate shall be paid in full on any person for any calendar day in which any duties are performed that are incidental to the profession of the worker.

** These rates are calculated on a per license basis for parimutuel race tracks and are base rated.

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-895, filed 11/28/94, effective 1/1/95. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 94-12-051, § 296-17-895, filed 5/27/94, effective 7/1/94. Statutory Authority: RCW 51.04.020. 93-24-114, § 296-17-895, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-895, filed 5/31/93, effective 7/1/93; 92-24-063, § 296-17-895, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-895, filed 11/27/91, effective 1/1/92; 91-12-014, § 296-17-895, filed 5/31/91, effective 7/1/91; 90-24-042, § 296-17-895, filed 11/30/90, effective 1/1/91; 90-13-018, § 296-17-895, filed 6/8/90, effective 7/9/90; 89-24-051 (Order 89-22), § 296-17-895, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020(1). 89-16-001 (Order 89-07), § 296-17-895, filed 7/20/89, effective 8/20/89. Statutory Authority: RCW 51.16.035 and 51.04.020. 88-24-012 (Order 88-30), § 296-17-895, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 88-12-065 (Order 88-05), § 296-17-895, filed 5/31/88; 88-12-050 (Order 88-06), § 296-17-895, filed

5/31/88, effective 7/1/88; 88-06-047 (Order 87-33), § 296-17-895, filed 3/1/88; 87-24-060 (Order 87-26), § 296-17-895, filed 12/1/87, effective 1/1/88; 87-12-032 (Order 87-12), § 296-17-895, filed 5/29/87, effective 7/1/87. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-895, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-895, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-895, filed 11/27/85, effective 1/1/86; 85-13-046 (Order 85-13), § 296-17-895, filed 6/17/85; 85-06-026 (Order 85-7), § 296-17-895, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-895, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.020(1). 84-12-048 (Order 84-12), § 296-17-895, filed 6/1/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-895, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-895, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-895, filed 11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-895, filed 1/30/81; 80-17-016 (Order 80-23), § 296-17-895, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-895, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-895, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-895, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-895, filed 12/1/77; Order 77-10, § 296-17-895, filed 5/31/77; Order 76-36, § 296-17-895, filed 11/30/76; Order 76-18, § 296-17-895, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-895, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-895, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-895, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-895, filed 11/9/73, effective 1/1/74.]

WAC 296-17-89501 Average hourly wage effective July 1, 1993. The following table represents the average hourly wage rate to be used when computing worker hours in accordance with WAC 296-17-350(6).

Class	Average hourly wage
4802	6.50
4803	6.50
4804	7.50
4805	7.50
4806	5.00
4808	7.50
4809	7.00
4810	6.00
4811	6.00
4812	12.00
4813	5.50
4910	8.50
7301	9.00
7302	7.50
7307	6.50
7309	6.00

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-12-093, § 296-17-89501, filed 5/31/93, effective 7/1/93.]

WAC 296-17-900 Premium discounts. In providing a rate modification system consistent with recognized insurance principles, the department may, in addition to the experience rating plan, provide a premium discount plan which recognizes the differences in administrative expense to the department in collecting premiums from employers based on differences in their premium volume.

[Order 73-22, § 296-17-900, filed 11/9/73, effective 1/1/74.]

WAC 296-17-904 Definitions. The definitions in this section shall apply throughout WAC 296-17-905 through 296-17-91902.

(1) "Coverage period" means a one-year period beginning the first day of either January, April, July, or October.

(2) "Group" means those members of an association who have elected to have a group dividend and/or retrospective premium calculated based on the combined premium and incurred loss data of the participants, and have satisfactorily complied with eligibility requirements for doing so.

(3) "Premium" means only that portion of the money collected from an employer for worker's compensation (not to include any money paid in penalties or security deposits), which is deposited in the accident fund and the medical aid fund.

(4) "Standard premium" for a particular coverage period means premium collected or due for insurance coverage provided during the period, prior to any adjustments under a dividend or retrospective rating plan.

(5) "Incurred losses" for a coverage period means the estimated ultimate cost to the accident fund and medical aid fund of claims arising from incidents occurring during the coverage period, subject to the special evaluation methods prescribed in WAC 296-17-915.

(6) "Loss development factor" means an actuarially determined factor which is multiplied times individual case basis estimates of claim costs to produce incurred losses for a firm or group of firms during a coverage period. Loss development factors allow for reopenings, aggravations, and any other individually unpredictable contingencies which may affect claim costs based on past experience of the accident fund and medical aid fund as a whole.

(7) "Loss ratio" means incurred losses divided by standard premium.

(8) "Dividend" is a partial refund of standard premium based on a firm's standard premium and loss ratio.

(9) "Retrospective premium" is a premium determined after a coverage period has ended, based on a firm's standard premium, incurred losses, and other preselected parameters for the coverage period.

(10) "Retrospective premium adjustment" is an additional assessment or refund of premium owing to an employer's retrospective premium as of a given evaluation date being more or less than the premium previously paid for the coverage period. Additional assessments of premium will be deposited entirely in the accident fund and refunds will be paid entirely from the accident fund.

(11) "Performance adjustment factor" means an actuarially determined factor which is multiplied times incurred losses prior to application of the retrospective rating formula, to produce "adjusted incurred losses." This adjustment will produce net retrospective premium credits for employers and employer groups participating in the retrospective rating program when they have combined experience which is more favorable than other state fund experience. Conversely, this adjustment will produce net retrospective premium penalties for employers and employer groups participating in the retrospective rating program when their combined experience is more adverse than other state fund experience. The purpose of the performance adjustment factor is to retain a consistent economic incentive for those employers to improve their accident cost experience while participating in these plans.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 91-24-053, § 296-17-904, filed 11/27/91, effective 1/1/92; 88-24-010 (Order 88-26), § 296-17-

904, filed 12/1/88, effective 1/1/89. 88-24-010 (Order 88-26), § 296-17-904, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-904, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-904, filed 2/28/85, effective 7/1/85; 81-04-024 (Order 81-02), § 296-17-904, filed 1/30/81.]

WAC 296-17-905 Dividends. Periodically, the department shall determine the total liability existing against the accident fund. If, after such determination, the department finds the accident fund, aside from the reserves deemed actuarially necessary according to recognized insurance principles, contains a surplus, the director, in his/her discretion may declare a dividend to be paid to, or credited to the accounts of, employers who were insured with the department during all or part of the period for which the dividend is declared, according to a uniform formula to be promulgated by the department. Any dividends so declared shall give due consideration to the solvency of the accident fund, not be unfairly discriminatory, and not be promised in advance of such declaration. An employer in default when the dividend is declared shall not be eligible to receive payment as provided by this section but credit will be made towards reducing the employer's obligation to the department.

[Statutory Authority: RCW 51.16.035. 84-06-024 (Order 84-2), § 296-17-905, filed 2/29/84, effective 7/1/84; 81-04-024 (Order 81-02), § 296-17-905, filed 1/30/81; Order 73-22, § 296-17-905, filed 11/9/73, effective 1/1/74.]

WAC 296-17-907 Dividend declarations and distributions. Dividends, if any, will be declared approximately fifteen months after the conclusion of the coverage period with credit or payment made within sixty days of the calculation. No dividend checks will be written for less than ten dollars.

Adjustments to the dividend calculation due to clerical errors will be made if reported to the department within ninety days of the payments. No subsequent adjustments will be made.

[Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-907, filed 1/30/81.]

WAC 296-17-910 Qualifications for employer groups for workers' compensation insurance. The department may insure the workers' compensation obligations of employers as a group, provided the following conditions are met:

(1) All the employers in the group are members of an organization that has been in existence for at least two years.

(2) The organization was formed for a purpose other than that of obtaining workers' compensation coverage.

(3) The business of the employers in the organization is substantially similar, taking into consideration the nature of the work being performed by workers of such employers such that the group comprises substantially homogeneous risks.

(4) The formation and operation of the group program in the organization will substantially improve accident prevention and claims handling for the employers in the group.

Each employer seeking to enroll in a group for workers' compensation insurance must have an industrial insurance account in good standing with the department such that at the time the agreement is processed no outstanding premiums, penalties or assessments are due and quarterly reporting of payroll has been made in accordance with WAC 296-17-310.

The above conditions do not pertain to groupings or combination of persons or risks by way of common ownership or common use and control for experience rating purposes. Combinations for experience rating are governed by WAC 296-17-873.

Final determination of group eligibility under this section rests with the department subject to review under chapter 51.52 RCW.

In providing employer group plans under this rule, the department may consider an employer group as a single employing entity for purposes of dividends or retrospective rating. No employer will be a member of more than one group for the purposes of insuring their workers' compensation obligations.

[Statutory Authority: RCW 51.04.020, 51.16.035 and 51.12.095. 89-18-051 (Order 89-11), § 296-17-910, filed 8/31/89, effective 10/1/89. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-12-048 (Order 87-30), § 296-17-910, filed 5/31/88. Statutory Authority: RCW 51.16.035. 85-06-025 (Order 85-8), § 296-17-910, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-910, filed 2/29/84, effective 7/1/84; 82-05-019 (Order 82-5), § 296-17-910, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-910, filed 1/30/81; Order 73-22, § 296-17-910, filed 11/9/73, effective 1/1/74.]

WAC 296-17-911 Group dividends. Group dividends will be calculated provided:

(1) Employers qualify as a group as defined by WAC 296-17-910.

(2) Group submits a satisfactorily completed:

(a) Application for group dividend plan no later than:

(i) April 30 for the coverage period beginning the following July 1;

(ii) July 31 for the coverage period beginning the following October 1;

(iii) October 31 for the coverage period beginning the following January 1;

(iv) January 31 for the coverage period beginning the following April 1.

(b) Employer's authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled by the 15th day of the month preceding the start of any quarter within the coverage period;

(c) Group dividend agreement by the 15th day of the month preceding the start of the coverage period.

(3) A dividend is declared under provisions of WAC 296-17-905.

Employers associated with the group at any time during the term of the group dividend agreement will remain parties to the group dividend agreement for the balance of its term.

Members of the organization or association which do not elect to participate in the group dividend at the inception of the agreement may become participating members in the group any quarter during the term of the agreement.

Each employer included as a group member in the group dividend agreement will maintain an individual account with the department and will continue to pay quarterly premiums based on assigned risk classification(s) and individual experience rating.

The department may withhold any member's pro rata share from the group's dividend and credit the employer's industrial insurance account when premiums, penalties, or assessments are owing the department.

Dividends will be calculated in accordance with WAC 296-17-905 and are subject to WAC 296-17-907 and 296-17-915.

The payment of the group dividend will be made by the department to the association and shall be distributed to the individual group members by the association.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-18-083, § 296-17-911, filed 8/31/93, effective 10/1/93. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-911, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-911, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-911, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-911, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-911, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-911, filed 1/30/81.]

WAC 296-17-912 Retrospective rating plan. The department shall offer a retrospective rating plan to qualified employers. This plan shall be available on a voluntary basis for the period of one coverage period and may be renewed at the end of that year. The retrospective rating plan shall be consistent with recognized insurance principles and shall be administered according to rules, scales, tables, formulas, schedules and factors promulgated by the department.

[Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-912, filed 1/30/81.]

WAC 296-17-913 Qualifications for employer participation in a retrospective rating plan. The department may enroll interested employers in a retrospective rating plan as a means of insuring their workers' compensation obligations provided the following conditions are met:

(1) The employer submits a satisfactorily completed retrospective rating plan agreement for each employer account to be enrolled.

(2) The employer has an industrial insurance account in good standing with the department such that at the time the agreement is processed no outstanding premium, penalties or assessments are due and quarterly reporting of payroll has been made in accordance with WAC 296-17-310.

(3) The employer may be required to post a surety bond or other security deposit separate from the cash deposit required for establishing an industrial insurance account with the department:

(a) The employer's surety bond must be on the prescribed forms authorized by the department;

(b) The employer's surety bond shall be secured in one thousand dollar increments provided further that if the estimated maximum premium falls within two increment ranges, a surety bond at the higher level increment shall be obtained;

(c) The employer's surety bond shall remain in full force and effect for the period required retrospective premium calculations are made.

Such surety bond or security deposit would be sufficient to cover the difference between the employer's estimated standard premium and the maximum premium due under the retrospective rating plan. Past reporting data and current rate levels will be used to determine the estimated standard premium and maximum percentage retrospective premium due under the plan.

(4) The employer maintains any existing retrospective rating account in good standing with the department with no outstanding additional premium assessments or interest therein due at the time the agreement is processed. The department may at its discretion, determine that an employer is in good standing if the employer and the department agree upon a payment schedule or other arrangements satisfactory to the department for payment of additional premium assessments or interest due. Said payment schedule or other established satisfactory arrangements shall be made prior to the time the agreement is processed.

Final determination as to the employer's eligibility under this section and financial ability to assume the responsibilities under the retrospective rating plan rests with the department subject to review under chapter 51.52 RCW.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 87-12-033 (Order 87-17), § 296-17-913, filed 5/29/87. Statutory Authority: RCW 51.16.035. 85-06-025 (Order 85-8), § 296-17-913, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-913, filed 2/29/84, effective 7/1/84; 82-05-019 (Order 82-5), § 296-17-913, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-913, filed 1/30/81.]

WAC 296-17-914 Retrospective rating formula. Employers who elect to have their premium adjusted under a retrospective rating plan must submit an application on a form provided by the department. This application must be received by the department no later than the 15th day of the month preceding the start of the coverage period. The employer must preselect a "maximum premium ratio" and either Plan A, A1, A2, A3, or B.

The employer's retrospective premium shall be calculated from the formula:

Retrospective Premium =

(Basic Premium Ratio x Standard Premium)

+

(Loss Conversion Factor x Adjusted Incurred Losses)

In the above formula, the basic premium ratio and loss conversion factor are taken from Plan A (WAC 296-17-91901) or Plan B (WAC 296-17-91902) or Plan A1 (WAC 296-17-91903) or Plan A2 (WAC 296-17-91904) or Plan A3 (WAC 296-17-91905) based on the employer's standard premium and preselected maximum premium ratio. Adjusted incurred losses equal incurred losses times the performance adjustment factor applicable to the coverage period. When the aggregate experience of retrospectively rated accounts is superior to other state fund experience, the performance adjustment factor will not exceed 1.00. The performance adjustment factor for each coverage period shall be calculated independently of results for previous coverage periods. Evaluation of incurred losses will be done according to the methods prescribed in WAC 296-17-915.

The maximum retrospective premium is the product of the maximum premium ratio times the employer's standard premium. In the event that the retrospective premium formula produces a value greater than the maximum premium, the retrospective premium shall be reduced to the maximum premium.

Under Plans A1, A2, and A3, the minimum retrospective premium is the product of the minimum premium ratio times the employer's standard premium. If the retrospective premium formula produces a value less than the minimum premium, the retrospective premium shall be increased to the minimum premium.

Under Plan A, a firm may elect to forego the protection of a maximum premium ratio if its financial condition is sufficiently strong and stable so that it could qualify as a self-insurer under the department's guidelines for certification of self-insurers. The basic premium ratio effective January 1, 1989, will be .058 if the firm selects and qualifies for an unlimited maximum premium.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-914, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-914, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-914, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-914, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-914, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-914, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-914, filed 1/30/81.]

WAC 296-17-915 Evaluation of incurred losses dividend and retrospective rating plans. The initial evaluation date for each claim arising from incidents occurring during the coverage period shall be approximately twelve months following the end of the coverage period. Each subsequent annual incurred loss evaluation under the retrospective rating plan shall be approximately twelve months following the preceding evaluation date.

The estimated cost of each claim shall include all payments made as of the valuation date and may also include a reserve for future payments consistent with the following evaluation methods applicable to experience rating:

(1) Retroactive adjustments - revision of losses between valuation dates

No claim value shall be revised between valuation dates and no retroactive adjustment of a retrospective premium adjustment shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where incurred loss values are included or excluded through mistake other than error of judgment;

(b) In cases where a third party recovery is made;

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120.

(2) Third party recovery

In the event of a third party recovery on a claim, the employer shall be charged for a portion of the actual loss amount, gross of such recovery, established on the claim. This portion shall be calculated at the time the recovery is made, and shall be determined by taking the ratio of the total cost of the claim, including attorneys' fees, after recovery, to the total cost of the claim before recovery. If the claim is open at the time the recovery is made, then costs before and after recovery may include an allowance for future claim payments.

(3) Second injury claims

The value of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

The incurred losses for each employer shall be determined by multiplying the individual claim cost estimates by loss development factors, and adding the resulting developed losses for all the employer's claims. The following special procedures will be used for making individual claim cost estimates:

Fatal claims - retrospective rating plan

Each fatal claim shall include all payments made as of the valuation date and a pension reserve, if any, based on the annuity value at the time the pension is awarded. Pension costs will not be reevaluated based on events after the pension has been awarded.

Fatal claims - dividend plan

Each fatal claim shall be assigned the "average death value," said value to be the average incurred cost for all fatal claims occurring during the coverage period.

Permanent total claims

Pension costs for permanent total injuries will be based on the annuity value at the time that the pension is awarded. Pension costs will not be reevaluated based on events after the pension has been awarded.

Occupational disease claims

The cost of any occupational disease claim paid and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment. Each employer's share of the claim cost shall be assigned to the coverage period during which the employer last employed the claimant under conditions of injurious exposure, provided the employer's share is at least ten percent of the total claim cost.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-915, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 85-06-025 (Order 85-8), § 296-17-915, filed 2/28/85, effective 7/1/85; 83-05-018 (Order 83-4), § 296-17-915, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-915, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-915, filed 1/30/81.]

WAC 296-17-916 Retrospective premium adjustments—Due and payable. The initial retrospective premium adjustment will be calculated approximately twelve months from the close of the coverage period. The second and final required retrospective premium adjustment will be calculated approximately one year later. Provided a request is made by the employer or employer group within ninety days following the second and final required retrospective premium adjustment, two subsequent annual retrospective premium adjustments on the coverage period will be made. The additional adjustments will be identified as the third and fourth adjustments.

Retrospective premium adjustments are the sole responsibility of the employer or employer group. Retrospective premium adjustments become due or payable within sixty days of notification of amount. Reevaluation of incurred losses or premium audits will not delay retrospective premium adjustment payments. For employers participating on an individual retrospective rating plan, no retrospective premium adjustment refund check will be written for less than ten dollars. In lieu of refund checks, retrospective premium adjustments of less than ten dollars will be credited to the employer's industrial insurance account. Retrospective

premium adjustments of less than five dollars will be disregarded and not considered due or payable.

The department may withhold any member's pro rata share from the group's retrospective premium adjustment refund and credit the employer's industrial insurance account when premiums, penalties, or assessments are owing the department. For employers participating in an individual retrospective rating plan, retrospective premium adjustment refunds may be credited to the employer's industrial insurance account when premiums, penalties, or assessments are owing the department.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-24-040, § 296-17-916, filed 11/30/90, effective 1/1/91; 88-24-010 (Order 88-26), § 296-17-916, filed 12/1/88, effective 1/1/89; 88-12-048 (Order 87-30), § 296-17-916, filed 5/31/88. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-916, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-916, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-916, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-916, filed 2/9/83, effective 7/1/83; 81-04-024 (Order 81-02), § 296-17-916, filed 1/30/81.]

WAC 296-17-91601 Ninety-day open option. Employer or employer groups that have enrolled for coverage periods beginning July 1, 1987, through October 1, 1990, may elect to be governed by WAC 296-17-916 as amended January 1, 1991, by giving written notification to the department of labor and industries no later than March 31, 1991.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 90-24-040, § 296-17-91601, filed 11/30/90, effective 1/1/91; 88-12-049 (Order 88-08), § 296-17-91601, filed 5/31/88.]

WAC 296-17-917 Qualifications for employer group participation in retrospective rating plan. The department may enroll interested groups in the retrospective rating plan provided:

(1) Employers qualify as a group as defined by WAC 296-17-910.

(2) Employers have industrial insurance accounts in good standing with the department such that at the time the agreement is processed no outstanding premium, penalties, or assessments are due and quarterly reporting of payroll has been made in accordance with WAC 296-17-310.

(3) Group submits a satisfactorily completed:

(a) Application for group retrospective rating plan no later than:

(i) April 30 for the coverage period beginning the following July 1;

(ii) July 31 for the coverage period beginning the following October 1;

(iii) October 31 for the coverage period beginning the following January 1;

(iv) January 31 for the coverage period beginning the following April 1.

(b) Employer's authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled by the 15th day of the month preceding the start of any quarter within the coverage period;

(c) Group retrospective rating plan agreement by the 15th day of the month preceding the start of the coverage period.

(4) The group may be required to post a surety bond or other security deposit separate from the individual employer's cash deposits required for establishing industrial insurance accounts with the department:

(a) The group's surety bond must be on the prescribed forms authorized by the department;

(b) The group's surety bond shall be secured in one thousand dollar increments provided further that if the group's estimated maximum premium due falls within two increment ranges, a surety bond at the higher level increment shall be obtained;

(c) The group's surety bond shall remain in force and effect for the period required retrospective premium calculations are made.

The amount of such surety bond or other security deposit, if required, may be fixed by the department in any amount equal to or less than the difference between the group's estimated standard premium and the maximum premium due under the retrospective rating plan. Past reporting data and current rate levels will be used to determine the estimated standard premium and maximum percentage retrospective premium due under the plan.

Each employer included as a group member in the group retrospective rating plan agreement will maintain an individual account with the department and will continue to pay quarterly premiums based on assigned risk classification(s) and individual experience rating.

Employers associated with the group at any time during the term of the group retrospective rating plan agreement will remain parties to the agreement for the balance of its term.

Members of the organization or association which do not elect to participate in the group retrospective rating plan at the inception of the agreement may become participating members in the group any quarter during the term of the agreement.

(5) The group maintains any existing retrospective rating account in good standing with the department with no outstanding additional premium assessment or interest therein due at the time the agreement is processed. The department may at its discretion, determine that a group is in good standing if the group and the department agree upon a payment schedule or other arrangements satisfactory to the department for payment of additional premium assessments or interest due. Said payment schedule or other established satisfactory arrangements shall be made prior to the time the agreement is processed.

Final determination of an employer's eligibility to participate in a group plan under this section rests with the department subject to review under chapter 51.52 RCW.

The payment of the group retrospective premium adjustment will be made to or collected from the association. The distribution to the individual group members or collection from the individual group members will be done by the association.

Group retrospective premium adjustment will be calculated according to WAC 296-17-914 and is subject to WAC 296-17-915 and 296-17-916.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 93-18-083, § 296-17-917, filed 8/31/93, effective 10/1/93; 87-12-033 (Order 87-17), § 296-17-917, filed 5/29/87. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-917, filed 2/25/86; 85-06-025 (Order 85-8), § 296-

17-917, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-917, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-917, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-917, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-917, filed 1/30/81.]

WAC 296-17-918 Limitation of liability indemnification. With the exception of the required authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled, the department disclaims interest in contracts executed between employer groups and participating group members. The department neither approves nor disapproves of any language contained therein and shall be held harmless for misrepresentation of fact(s) or errors of omission or commission stated in the terms of said contract. The department is released and exempt from liability for any dispute or cause of action between an employer group and participating group members or amongst participating group members arising under the contract.

[Statutory Authority: RCW 51.16.035. 84-06-024 (Order 84-2), § 296-17-918, filed 2/29/84, effective 7/1/84.]

WAC 296-17-919 Table I.

RETROSPECTIVE RATING PLANS A, A1, A2, A3, AND B
STANDARD PREMIUM SIZE RANGES
Effective January 1, 1995

Size Group Number	Standard Premium Range		
84	$ 4,089	-	$ 4,717
83	4,718	-	5,416
82	5,417	-	6,190
81	6,191	-	7,048
80	7,049	-	7,997
79	7,998	-	9,042
78	9,043	-	10,191
77	10,192	-	11,456
76	11,457	-	12,844
75	12,845	-	14,363
74	14,364	-	16,024
73	16,025	-	17,837
72	17,838	-	19,814
71	19,815	-	21,969
70	21,970	-	24,312
69	24,313	-	26,859
68	26,860	-	27,598
67	27,599	-	29,150
66	29,151	-	30,813
65	30,814	-	32,600
64	32,601	-	34,521
63	34,522	-	36,586
62	36,587	-	38,814
61	38,815	-	41,216
60	41,217	-	43,811
59	43,812	-	46,618
58	46,619	-	49,657
57	49,658	-	52,953
56	52,954	-	56,533
55	56,534	-	60,428
54	60,429	-	64,669
53	64,670	-	69,297
52	69,298	-	74,355
51	74,356	-	79,892
50	79,893	-	85,965
49	85,966	-	92,638
48	92,639	-	99,986
47	99,987	-	108,091
46	108,092	-	117,051
45	117,052	-	126,980
44	126,981	-	134,155
43	134,156	-	142,978
42	142,979	-	152,615
41	152,616	-	163,160
40	163,161	-	174,724
39	174,725	-	187,435
38	187,436	-	201,445
37	201,446	-	216,924
36	216,925	-	234,074
35	234,075	-	253,127
34	253,128	-	274,366
33	274,367	-	298,111
32	298,112	-	324,753
31	324,754	-	354,754
30	354,755	-	388,671
29	388,672	-	427,173
28	427,174	-	471,075
27	471,076	-	521,377
26	521,378	-	579,308
25	579,309	-	646,392
24	646,393	-	724,546
23	724,547	-	816,192
22	816,193	-	924,423
21	924,424	-	1,053,235
20	1,053,236	-	1,207,852
19	1,207,853	-	1,395,191
18	1,395,192	-	1,624,558
17	1,624,559	-	1,908,651
16	1,908,652	-	2,124,267
15	2,124,268	-	2,370,275
14	2,370,276	-	2,645,210
13	2,645,211	-	3,085,165
12	3,085,166	-	3,627,724
11	3,627,725	-	4,759,430
10	4,759,431	-	6,495,500
9	6,495,501	-	8,459,314
8	8,459,315	-	11,428,175
7	11,428,176	-	16,102,964
6	16,102,965	-	24,127,195
5	24,127,196		& Over

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-919, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-919, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 92-24-063, § 296-17-919, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-919, filed 11/27/91, effective 1/1/92; 90-24-042, § 296-17-919, filed 11/30/90, effective 1/1/91; 89-24-051 (Order 89-22), § 296-17-919, filed 12/1/89, effective 1/1/90; 88-24-010 (Order 88-26), § 296-17-919, filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-919, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-919, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-919, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-919, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-919, filed 2/10/82; 81-24-042 (Order 81-30), § 296-17-919, filed 11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-919, filed 1/30/81.]

WAC 296-17-91901 Table II.

RETROSPECTIVE RATING PLAN A
BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .729
Effective January 1, 1989

Size Group	Maximum Premium Ratio: 1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
84	.976	.957	.941	.929	.918	.908	.900	.892	.886	.879	.867	.857	.847	.828
83	.973	.953	.937	.923	.912	.902	.893	.885	.878	.871	.858	.847	.836	.817
82	.971	.949	.932	.917	.905	.895	.886	.877	.870	.862	.849	.838	.826	.806
81	.968	.945	.927	.912	.899	.888	.878	.870	.862	.854	.840	.828	.816	.795
80	.966	.941	.921	.906	.893	.881	.871	.862	.853	.846	,831	.818	.806	.783
79	.963	.937	.916	.900	.886	.874	.863	.854	.845	.837	.822	.808	.795	.771
78	.960	.933	.912	.894	.880	.867	.856	.846	.836	.828	.812	.798	.784	.759
77	.958	.929	.907	.889	.874	.860	.849	.838	.828	.819	.802	.787	.773	.746
76	.956	.925	.902	.883	.867	.853	.841	.829	.819	.810	.792	.776	.761	.734
75	.953	.921	.896	.876	.860	.845	.832	.821	.810	.800	.782	.766	.750	.722
74	.950	.916	.891	.870	.853	.838	.825	.812	.801	.791	.772	.754	.738	.709
73	.947	.912	.885	.864	.846	.830	.816	.804	.792	.781	.762	.743	.727	.696
72	.943	.907	.880	.858	.839	.823	.808	.795	.783	.772	.751	.732	.715	.682
71	.940	.902	.874	.851	.832	.815	.800	.786	.774	.762	.740	.721	.702	.669
70	.937	.897	.868	.844	.824	.807	.791	.777	.764	.752	.730	.709	.690	.656
69	.933	.892	.862	.837	.817	.799	.783	.768	.754	.742	.719	.698	.678	.643
68	.929	.886	.855	.830	.808	.790	.773	.758	.744	.731	.707	.686	.666	.630
67	.925	.880	.848	.822	.800	.781	.764	.748	.734	.721	.696	.674	.654	.618
66	.920	.875	.841	.814	.792	.772	.754	.738	.723	.710	.685	.662	.641	.604
65	.916	.869	.834	.807	.783	.763	.745	.728	.713	.699	.673	.649	.628	.590
64	.911	.863	.827	.799	.775	.754	.735	.718	.702	.688	.661	.637	.615	.576
63	.907	.856	.820	.791	.766	.745	.725	.708	.692	.677	.649	.625	.602	.563
62	.902	.850	.813	.783	.757	.735	.715	.698	.681	.666	.638	.612	.590	.550
61	.897	.844	.805	.774	.748	.726	.705	.687	.670	.654	.625	.600	.577	.536
60	.892	.838	.798	.766	.739	.716	.695	.676	.658	.642	.613	.587	.563	.522
59	.888	.831	.790	.758	.730	.706	.684	.665	.647	.630	.600	.574	.550	.508
58	.883	.825	.783	.749	.720	.696	.674	.654	.635	.618	.588	.561	.537	.495
57	.878	.818	.775	.740	.711	.686	.663	.643	.624	.607	.576	.548	.524	.482
56	.872	.810	.766	.731	.701	.675	.652	.631	.612	.594	.563	.535	.511	.468
55	.865	.802	.757	.721	.690	.664	.640	.619	.599	.582	.550	.522	.497	.455
54	.858	.794	.747	.710	.679	.652	.628	.607	.587	.569	.537	.509	.484	.442
53	.851	.785	.738	.700	.668	.641	.616	.595	.575	.556	.524	.496	.471	.429
52	.843	.776	.728	.690	.657	.629	.605	.582	.562	.544	.511	.483	.458	.417
51	.836	.767	.718	.679	.646	.618	.592	.570	.550	.531	.498	.470	.446	.405
50	.828	.758	.708	.668	.634	.605	.580	.557	.537	.518	.485	.457	.432	.392
49	.821	.748	.697	.656	.622	.593	.567	.544	.524	.505	.472	.444	.419	.379
48	.813	.739	.686	.645	.610	.581	.555	.531	.511	.492	.459	.431	406	.367
47	.804	.729	.675	.633	.598	.568	.542	.519	.498	.479	.446	.418	.394	.355
46	.796	.718	.663	.620	.584	.554	.528	.505	.484	.465	.433	.406	.382	.344
45	.787	.707	.650	.607	.571	.541	.514	.491	.471	.452	.420	.394	.371	.334
44	.778	.695	.638	.594	.557	.527	.501	.478	.458	.440	.408	.382	.360	.324
43	.768	.683	.625	.580	.544	.514	.488	.465	.445	.427	.396	.371	.349	.314
42	.758	.671	.612	.567	.530	.500	.474	.451	.431	.413	.383	.357	.336	.301
41	.748	.659	.599	.554	.517	.486	.460	.437	.417	.399	.368	.343	.322	.288
40	.737	.647	.586	.540	.503	.472	.446	.423	.403	.385	.355	.330	.309	.276
39	.726	.635	.573	.526	.489	.458	.432	.409	.389	.372	.342	.317	.296	.264
38	.714	.622	.560	.513	.476	.445	.418	.396	.376	.359	.329	.305	.284	.252
37	.702	.608	.546	.499	.462	.431	.405	.383	.363	.346	.317	.293	.273	.242
36	.688	.594	.532	.485	.448	.417	.392	.369	.350	.333	.304	.281	.262	.231
35	.673	.578	.516	.469	.433	.402	.377	.355	.336	.320	.292	.269	.250	.221
34	.657	.562	.500	.454	.418	.388	.363	.342	.323	.307	.280	.258	.240	.211
33	.640	.546	.484	.439	.403	.374	.349	.329	.310	.295	.268	.247	.229	.202
32	.623	.529	.468	.424	.389	.360	.336	.316	.298	.283	.257	.237	.220	.193
31	.607	.512	.452	.408	.373	.345	.322	.302	.285	.270	.246	.226	.210	.185
30	.589	.495	.435	.392	.358	.331	.308	.289	.273	.259	.235	.216	.201	.178
29	.571	.478	.419	.377	.344	.317	.295	.277	.261	.247	.225	.207	.193	.171
28	.553	.461	.403	.361	.329	.303	.282	.264	.248	.235	.213	.195	.181	.160
27	.537	.446	.388	.346	.314	.288	.267	.248	.233	.219	.197	.179	.165	.143
26	.521	.430	.373	.331	.299	.273	.252	.234	.218	.205	.183	.165	.151	.129
25	.504	.414	.358	.317	.285	.259	.238	.220	.205	.192	.170	.152	.138	.117

24	.482	.394	.339	.300	.269	.245	.225	.208	.194	.181	.161	.145	.132	.113
23	.460	.374	.321	.283	.254	.231	.213	.197	.184	.172	.153	.138	.127	.109
22	.437	.355	.304	.268	.241	.219	.201	.187	.174	.163	.146	.132	.121	.105
21	.414	.336	.288	.254	.228	.208	.191	.177	.166	.156	.139	.127	.117	.102
20	.394	.318	.272	.239	.214	.194	.179	.166	.155	.145	.130	.119	.110	.096
19	.377	.301	.254	.222	.198	.179	.164	.152	.142	.133	.120	.109	.101	.089
18	.358	.283	.238	.207	.184	.166	.152	.140	.131	.123	.110	.101	.094	.083
17	.339	.266	.222	.192	.171	.154	.140	.130	.121	.114	.103	.094	.088	.079
16	.320	.249	.208	.179	.159	.143	.131	.121	.113	.106	.096	.088	.083	.075
15	.303	.234	.194	.168	.148	.134	.122	.113	.106	.100	.091	.084	.079	.072
14	.293	.220	.180	.157	.141	.128	.117	.109	.103	.097	.089	.082	.078	.071
13	.281	.204	.167	.148	.133	.122	.112	.105	.099	.094	.086	.081	.076	.070
12	.269	.187	.156	.139	.126	.116	.108	.101	.096	.091	.084	.079	.075	.069
11	.254	.167	.145	.130	.119	.110	.103	.097	.092	.088	.082	.077	.073	.068
10	.238	.150	.135	.122	.113	.105	.098	.093	.089	.085	.079	.075	.072	.067
9	.219	.138	.125	.115	.106	.100	.094	.089	.085	.082	.077	.073	.071	.066
8	.197	.127	.116	.107	.100	.094	.090	.086	.082	.079	.075	.072	.069	.065
7	.170	.117	.108	.100	.094	.089	.085	.082	.079	.077	.073	.070	.068	.064
6	.137	.107	.100	.094	.089	.085	.081	.078	.076	.074	.071	.068	.066	.064
5	.105	.098	.092	.087	.083	.080	.077	.075	.073	.071	.068	.066	.065	.063

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-91901, filed 12/1/88, effective 1/1/89; 88-14-107 (Order 88-10), § 296-17-91901, filed 7/6/88; 86-17-002 (Order 86-29), § 296-17-91901, filed 8/8/86. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-91901, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-91901, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-91901, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-91901, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-91901, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-91901, filed 1/30/81.]

WAC 296-17-91902 Table III.

RETROSPECTIVE RATING PLAN B
BASIC PREMIUM RATIOS
AND LOSS CONVERSION FACTORS
Effective January 1, 1989

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.999	.997	.996	.994	.993	.991	.990	.988	.987	.985	.982	.979	.976	.970
	Loss Conversion Factor	.001	.003	.004	.006	.007	.009	.010	.012	.013	.015	.018	.021	.024	.030
83	Basic Premium Ratio	.998	.997	.995	.993	.992	.990	.989	.987	.985	.984	.980	.977	.974	.967
	Loss Conversion Factor	.002	.003	.005	.007	.008	.010	.011	.013	.015	.016	.020	.023	.026	.033
82	Basic Premium Ratio	.998	.996	.995	.993	.991	.989	.988	.986	.984	.982	.979	.975	.972	.965
	Loss Conversion Factor	.002	.004	.005	.007	.009	.011	.012	.014	.016	.018	.021	.025	.028	.035
81	Basic Premium Ratio	.998	.996	.994	.992	.990	.989	.987	.985	.983	.981	.977	.973	.969	.962
	Loss Conversion Factor	.002	.004	.006	.008	.010	.011	.013	.015	.017	.019	.023	.027	.031	.038
80	Basic Premium Ratio	.998	.996	.994	.992	.990	.988	.986	.984	.982	.980	.976	.972	.967	.959
	Loss Conversion Factor	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.024	.028	.033	.041
79	Basic Premium Ratio	.998	.996	.994	.991	.989	.987	.985	.983	.981	.979	.974	.970	.966	.957
	Loss Conversion Factor	.002	.004	.006	.009	.011	.013	.015	.017	.019	.021	.026	.030	.034	.043
78	Basic Premium Ratio	.998	.995	.993	.991	.988	.986	.984	.981	.979	.977	.972	.967	.963	.953
	Loss Conversion Factor	.002	.005	.007	.009	.012	.014	.016	.019	.021	.023	.028	.033	.037	.047
77	Basic Premium Ratio	.997	.995	.992	.990	.987	.984	.982	.979	.977	.974	.969	.964	.958	.948
	Loss Conversion Factor	.003	.005	.008	.010	.013	.016	.018	.021	.023	.026	.031	.036	.042	.052
76	Basic Premium Ratio	.997	.995	.992	.989	.987	.984	.981	.978	.976	.973	.968	.962	.957	.946
	Loss Conversion Factor	.003	.005	.008	.011	.013	.016	.019	.022	.024	.027	.032	.038	.043	.054
75	Basic Premium Ratio	.997	.994	.992	.989	.986	.983	.981	.978	.975	.972	.967	.961	.956	.945
	Loss Conversion Factor	.003	.006	.008	.011	.014	.017	.019	.022	.025	.028	.033	.039	.044	.055
74	Basic Premium Ratio	.997	.994	.991	.988	.985	.982	.979	.976	.973	.970	.964	.958	.952	.940
	Loss Conversion Factor	.003	.006	.009	.012	.015	.018	.021	.024	.027	.030	.036	.042	.048	.060
73	Basic Premium Ratio	.997	.994	.990	.987	.984	.981	.977	.974	.971	.968	.961	.955	.948	.936
	Loss Conversion Factor	.003	.006	.010	.013	.016	.019	.023	.026	.029	.032	.039	.045	.052	.064
72	Basic Premium Ratio	.996	.993	.989	.986	.982	.979	.975	.972	.968	.965	.957	.950	.943	.929
	Loss Conversion Factor	.004	.007	.011	.014	.018	.021	.025	.028	.032	.035	.043	.050	.057	.071
71	Basic Premium Ratio	.996	.992	.988	.984	.980	.976	.972	.969	.965	.961	.953	.945	.937	.921
	Loss Conversion Factor	.004	.008	.012	.016	.020	.024	.028	.031	.035	.039	.047	.055	.063	.079

70	Basic Premium Ratio	.996	.991	.987	.983	.978	.974	.970	.965	.961	.957	.948	.939	.931	.913
	Loss Conversion Factor	.004	.009	.013	.017	.022	.026	.030	.035	.039	.043	.052	.061	.069	.087
69	Basic Premium Ratio	.995	.991	.986	.981	.977	.972	.967	.963	.958	.953	.944	.935	.925	.907
	Loss Conversion Factor	.005	.009	.014	.019	.023	.028	.033	.037	.042	.047	.056	.065	.075	.093
68	Basic Premium Ratio	.995	.990	.985	.981	.976	.971	.966	.961	.956	.952	.942	.932	.923	.903
	Loss Conversion Factor	.005	.010	.015	.019	.024	.029	.034	.039	.044	.048	.058	.068	.077	.097
67	Basic Premium Ratio	.995	.990	.985	.980	.975	.970	.965	.959	.954	.949	.939	.929	.919	.899
	Loss Conversion Factor	.005	.010	.015	.020	.025	.030	.035	.041	.046	.051	.061	.071	.081	.101
66	Basic Premium Ratio	.995	.989	.984	.978	.973	.967	.962	.956	.951	.946	.935	.924	.913	.891
	Loss Conversion Factor	.005	.011	.016	.022	.027	.033	.038	.044	.049	.054	.065	.076	.087	.109
65	Basic Premium Ratio	.994	.988	.982	.976	.971	.965	.959	.953	.947	.941	.929	.917	.906	.882
	Loss Conversion Factor	.006	.012	.018	.024	.029	.035	.041	.047	.053	.059	.071	.083	.094	.118
64	Basic Premium Ratio	.994	.987	.981	.974	.968	.962	.955	.949	.942	.936	.923	.910	.898	.872
	Loss Conversion Factor	.006	.013	.019	.026	.032	.038	.045	.051	.058	.064	.077	.090	.102	.128
63	Basic Premium Ratio	.993	.986	.979	.972	.965	.958	.951	.944	.938	.931	.917	.903	.889	.861
	Loss Conversion Factor	.007	.014	.021	.028	.035	.042	.049	.056	.062	.069	.083	.097	.111	.139
62	Basic Premium Ratio	.992	.985	.977	.970	.962	.954	.947	.939	.931	.924	.909	.893	.878	.848
	Loss Conversion Factor	.008	.015	.023	.030	.038	.046	.053	.061	.069	.076	.091	.107	.122	.152
61	Basic Premium Ratio	.992	.983	.975	.967	.959	.950	.942	.934	.926	.917	.901	.884	.868	.835
	Loss Conversion Factor	.008	.017	.025	.033	.041	.050	.058	.066	.074	.083	.099	.116	.132	.165
60	Basic Premium Ratio	.991	.982	.973	.964	.955	.946	.937	.928	.919	.910	.892	.874	.856	.819
	Loss Conversion Factor	.009	.018	.027	.036	.045	.054	.063	.072	.081	.090	.108	.126	.144	.181
59	Basic Premium Ratio	.990	.980	.971	.961	.951	.941	.931	.921	.912	.902	.882	.862	.843	.803
	Loss Conversion Factor	.010	.020	.029	.039	.049	.059	.069	.079	.088	.098	.118	.138	.157	.197
58	Basic Premium Ratio	.989	.979	.968	.957	.947	.936	.926	.915	.904	.894	.872	.851	.830	.787
	Loss Conversion Factor	.011	.021	.032	.043	.053	.064	.074	.085	.096	.106	.128	.149	.170	.213
57	Basic Premium Ratio	.989	.977	.966	.954	.943	.931	.920	.908	.897	.886	.863	.840	.817	.771
	Loss Conversion Factor	.011	.023	.034	.046	.057	.069	.080	.092	.103	.114	.137	.160	.183	.229
56	Basic Premium Ratio	.988	.976	.963	.951	.939	.927	.914	.902	.890	.878	.853	.829	.805	.756
	Loss Conversion Factor	.012	.024	.037	.049	.061	.073	.086	.098	.110	.122	.147	.171	.195	.244
55	Basic Premium Ratio	.987	.974	.961	.948	.935	.922	.909	.896	.883	.870	.844	.818	.792	.741
	Loss Conversion Factor	.013	.026	.039	.052	.065	.078	.091	.104	.117	.130	.156	.182	.208	.259
54	Basic Premium Ratio	.986	.972	.959	.945	.931	.917	.904	.890	.876	.862	.835	.807	.780	.724
	Loss Conversion Factor	.014	.028	.041	.055	.069	.083	.096	.110	.124	.138	.165	.193	.220	.276
53	Basic Premium Ratio	.985	.971	.956	.941	.927	.912	.898	.883	.868	.854	.824	.795	.766	.707
	Loss Conversion Factor	.015	.029	.044	.059	.073	.088	.102	.117	.132	.146	.176	.205	.234	.293
52	Basic Premium Ratio	.984	.969	.953	.938	.922	.907	.891	.876	.860	.845	.814	.783	.752	.690
	Loss Conversion Factor	.016	.031	.047	.062	.078	.093	.109	.124	.140	.155	.186	.217	.248	.310
51	Basic Premium Ratio	.983	.967	.950	.934	.917	.901	.884	.868	.851	.835	.802	.769	.735	.669
	Loss Conversion Factor	.017	.033	.050	.066	.083	.099	.116	.132	.149	.165	.198	.231	.265	.331
50	Basic Premium Ratio	.982	.965	.947	.929	.911	.894	.876	.858	.841	.823	.787	.752	.717	.646
	Loss Conversion Factor	.018	.035	.053	.071	.089	.106	.124	.142	.159	.177	.213	.248	.283	.354
49	Basic Premium Ratio	.981	.962	.943	.924	.905	.886	.867	.848	.829	.810	.772	.734	.696	.621
	Loss Conversion Factor	.019	.038	.057	.076	.095	.114	.133	.152	.171	.190	.228	.266	.304	.379
48	Basic Premium Ratio	.980	.959	.939	.919	.898	.878	.858	.837	.817	.797	.756	.716	.675	.594
	Loss Conversion Factor	.020	.041	.061	.081	.102	.122	.142	.163	.183	.203	.244	.284	.325	.406
47	Basic Premium Ratio	.978	.957	.935	.913	.891	.870	.848	.826	.805	.783	.740	.696	.653	.566
	Loss Conversion Factor	.022	.043	.065	.087	.109	.130	.152	.174	.195	.217	.260	.304	.347	.434
46	Basic Premium Ratio	.977	.954	.931	.908	.885	.862	.839	.816	.793	.770	.724	.677	.631	.539
	Loss Conversion Factor	.023	.046	.069	.092	.115	.138	.161	.184	.207	.230	.276	.323	.369	.461
45	Basic Premium Ratio	.976	.951	.927	.902	.878	.854	.829	.805	.780	.756	.707	.658	.609	.512
	Loss Conversion Factor	.024	.049	.073	.098	.122	.146	.171	.195	.220	.244	.293	.342	.391	.488
44	Basic Premium Ratio	.974	.948	.922	.897	.871	.845	.819	.793	.767	.742	.690	.638	.587	.483
	Loss Conversion Factor	.026	.052	.078	.103	.129	.155	.181	.207	.233	.258	.310	.362	.413	.517
43	Basic Premium Ratio	.973	.945	.918	.891	.863	.836	.809	.781	.754	.727	.672	.617	.562	.453
	Loss Conversion Factor	.027	.055	.082	.109	.137	.164	.191	.219	.246	.273	.328	.383	.438	.547
42	Basic Premium Ratio	.970	.941	.911	.881	.852	.822	.792	.763	.733	.703	.644	.585	.525	.406
	Loss Conversion Factor	.030	.059	.089	.119	.148	.178	.208	.237	.267	.297	.356	.415	.475	.594
41	Basic Premium Ratio	.968	.935	.903	.870	.838	.806	.773	.741	.708	.676	.611	.546	.481	.352

	Loss Conversion Factor	.032	.065	.097	.130	.162	.194	.227	.259	.292	.324	.389	.454	.519	.648
40	Basic Premium Ratio	.965	.929	.894	.859	.823	.788	.753	.718	.682	.647	.576	.506	.435	.294
	Loss Conversion Factor	.035	.071	.106	.141	.177	.212	.247	.282	.318	.353	.424	.494	.565	.706
39	Basic Premium Ratio	.962	.923	.885	.847	.808	.770	.732	.693	.655	.616	.540	.463	.386	.233
	Loss Conversion Factor	.038	.077	.115	.153	.192	.230	.268	.307	.345	.384	.460	.537	.614	.767
38	Basic Premium Ratio	.958	.917	.875	.834	.792	.751	.709	.668	.626	.585	.502	.419	.336	.170
	Loss Conversion Factor	.042	.083	.125	.166	.208	.249	.291	.332	.374	.415	.498	.581	.664	.830
37	Basic Premium Ratio	.955	.910	.865	.820	.776	.731	.686	.641	.596	.551	.461	.371	.282	.102
	Loss Conversion Factor	.045	.090	.135	.180	.224	.269	.314	.359	.404	.449	.539	.629	.718	.898
36	Basic Premium Ratio	.951	.903	.854	.806	.757	.709	.660	.612	.563	.514	.417	.320	.223	.029
	Loss Conversion Factor	.049	.097	.146	.194	.243	.291	.340	.388	.437	.486	.583	.680	.777	.971
35	Basic Premium Ratio	.947	.895	.842	.789	.736	.684	.631	.578	.525	.473	.367	.262	.156	.000
	Loss Conversion Factor	.053	.105	.158	.211	.264	.316	.369	.422	.475	.527	.633	.738	.844	.987
34	Basic Premium Ratio	.943	.886	.829	.771	.714	.657	.600	.543	.486	.428	.314	.200	.085	.000
	Loss Conversion Factor	.057	.114	.171	.229	.286	.343	.400	.457	.514	.572	.686	.800	.915	.969
33	Basic Premium Ratio	.938	.876	.814	.752	.690	.628	.567	.505	.443	.381	.257	.133	.009	.000
	Loss Conversion Factor	.062	.124	.186	.248	.310	.372	.433	.495	.557	.619	.743	.867	.991	.953
32	Basic Premium Ratio	.933	.866	.799	.732	.665	.598	.531	.463	.396	.329	.195	.061	.000	.000
	Loss Conversion Factor	.067	.134	.201	.268	.335	.402	.469	.537	.604	.671	.805	.939	.984	.939
31	Basic Premium Ratio	.927	.854	.781	.707	.634	.561	.488	.415	.342	.268	.122	.000	.000	.000
	Loss Conversion Factor	.073	.146	.219	.293	.366	.439	.512	.585	.658	.732	.878	.994	.965	.925
30	Basic Premium Ratio	.920	.840	.760	.680	.600	.520	.440	.360	.280	.200	.040	.000	.000	.000
	Loss Conversion Factor	.080	.160	.240	.320	.400	.480	.560	.640	.720	.800	.960	.975	.949	.913
29	Basic Premium Ratio	.913	.826	.739	.651	.564	.477	.390	.303	.216	.128	.000	.000	.000	.000
	Loss Conversion Factor	.087	.174	.261	.349	.436	.523	.610	.697	.784	.872	.990	.958	.935	.902
28	Basic Premium Ratio	.904	.807	.711	.615	.519	.422	.326	.230	.134	.037	.000	.000	.000	.000
	Loss Conversion Factor	.096	.193	.289	.385	.481	.578	.674	.770	.866	.963	.969	.940	.918	.887
27	Basic Premium Ratio	.892	.785	.677	.570	.462	.355	.247	.140	.032	.000	.000	.000	.000	.000
	Loss Conversion Factor	.108	.215	.323	.430	.538	.645	.753	.860	.968	.983	.946	.918	.897	.868
26	Basic Premium Ratio	.881	.761	.642	.522	.403	.283	.164	.044	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.119	.239	.358	.478	.597	.717	.836	.956	.983	.960	.925	.899	.879	.851
25	Basic Premium Ratio	.868	.736	.604	.472	.340	.208	.075	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.132	.264	.396	.528	.660	.792	.925	.987	.961	.940	.907	.883	.864	.838
24	Basic Premium Ratio	.852	.705	.557	.409	.261	.114	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.148	.295	.443	.591	.739	.886	.992	.964	.941	.922	.893	.872	.855	.832
23	Basic Premium Ratio	.835	.669	.504	.338	.173	.008	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.165	.331	.496	.662	.827	.992	.969	.944	.924	.907	.881	.862	.848	.827
22	Basic Premium Ratio	.814	.628	.442	.256	.070	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.186	.372	.558	.744	.930	.978	.949	.927	.909	.894	.871	.854	.841	.823
21	Basic Premium Ratio	.790	.579	.369	.159	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.210	.421	.631	.841	.990	.957	.932	.912	.896	.882	.862	.847	.835	.818
20	Basic Premium Ratio	.758	.516	.274	.032	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.242	.484	.726	.968	.966	.936	.913	.895	.881	.869	.851	.837	.827	.812
19	Basic Premium Ratio	.720	.439	.159	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.280	.561	.841	.979	.942	.915	.894	.878	.865	.854	.838	.826	.817	.805
18	Basic Premium Ratio	.672	.344	.016	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.328	.656	.984	.954	.920	.896	.877	.863	.851	.842	.827	.817	.810	.799
17	Basic Premium Ratio	.617	.234	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.383	.766	.977	.932	.902	.879	.863	.850	.839	.831	.819	.810	.803	.794
16	Basic Premium Ratio	.550	.100	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.450	.900	.953	.913	.885	.865	.851	.839	.830	.823	.812	.804	.798	.790
15	Basic Premium Ratio	.477	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.523	.992	.932	.896	.872	.854	.841	.831	.822	.816	.806	.799	.794	.788
14	Basic Premium Ratio	.414	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.586	.973	.912	.881	.861	.846	.834	.825	.818	.812	.804	.797	.793	.787
13	Basic Premium Ratio	.344	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.656	.953	.889	.867	.851	.838	.828	.821	.814	.809	.801	.796	.791	.786
12	Basic Premium Ratio	.256	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.744	.931	.874	.856	.842	.831	.823	.816	.810	.806	.799	.794	.790	.785

11	Basic Premium Ratio	.159	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.841	.906	.860	.846	.834	.825	.818	.812	.807	.803	.796	.792	.788	.784
10	Basic Premium Ratio	.032	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.968	.879	.848	.836	.827	.819	.813	.807	.803	.800	.794	.790	.787	.783
9	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.982	.850	.838	.828	.820	.813	.808	.803	.800	.797	.792	.788	.786	.782
8	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.952	.838	.828	.820	.813	.808	.803	.800	.796	.794	.790	.787	.784	.781
7	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.917	.828	.820	.813	.807	.803	.799	.796	.793	.791	.788	.785	.783	.780
6	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.876	.818	.812	.806	.802	.798	.795	.792	.790	.788	.785	.783	.782	.779
5	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.826	.809	.804	.800	.797	.794	.791	.789	.787	.786	.783	.782	.780	.778

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-91902, filed 12/1/88, effective 1/1/89; 88-14-107 (Order 88-10), § 296-17-91902, filed 7/6/88; 86-17-002 (Order 86-29), § 296-17-91902, filed 8/8/86. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-91902, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-91902, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-91902, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-91902, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-91902, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-91902, filed 1/30/81.]

WAC 296-17-91903 Table IV.

RETROSPECTIVE RATING PLAN A1
MINIMUM PREMIUM RATIOS
BASIC PREMIUM RATIO = .058
LOSS CONVERSION FACTOR = .729
Effective January 1, 1989

Size Group	Maximum Premium Ratio: 1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
84	.995	.990	.986	.981	.977	.972	.968	.963	.959	.955	.947	.939	.931	.917
83	.995	.990	.985	.980	.975	.970	.966	.961	.957	.952	.944	.935	.927	.912
82	.995	.989	.984	.979	.974	.969	.964	.959	.954	.950	.940	.932	.923	.907
81	.994	.989	.983	.978	.972	.967	.962	.957	.952	.947	.937	.928	.919	.903
80	.994	.988	.982	.977	.971	.965	.960	.955	.949	.944	.934	.924	.915	.898
79	.994	.987	.981	.975	.969	.963	.958	.952	.946	.941	.930	.920	.910	.892
78	.993	.987	.980	.974	.967	.961	.955	.949	.943	.938	.927	.916	.905	.886
77	.993	.986	.979	.972	.966	.959	.953	.946	.940	.934	.922	.911	.900	.880
76	.992	.985	.978	.971	.964	.957	.951	.944	.938	.931	.919	.907	.896	.875
75	.992	.985	.977	.970	.962	.955	.949	.942	.935	.929	.916	.904	.892	.870
74	.992	.984	.976	.968	.960	.953	.946	.939	.932	.925	.911	.898	.886	.863
73	.991	.983	.974	.966	.958	.951	.943	.935	.928	.921	.907	.893	.881	.856
72	.991	.982	.973	.965	.956	.948	.940	.932	.925	.917	.902	.888	.875	.850
71	.990	.981	.972	.963	.954	.946	.937	.929	.921	.913	.898	.883	.869	.843
70	.990	.980	.971	.961	.952	.943	.934	.926	.917	.909	.893	.878	.863	.836
69	.990	.979	.969	.960	.950	.941	.932	.923	.914	.906	.889	.874	.859	.831
68	.989	.979	.969	.959	.949	.939	.930	.921	.912	.904	.887	.871	.856	.827
67	.989	.978	.968	.958	.948	.938	.928	.919	.910	.901	.884	.868	.852	.824
66	.989	.977	.967	.956	.946	.936	.926	.916	.907	.898	.880	.864	.848	.818
65	.988	.976	.965	.954	.944	.933	.923	.913	.903	.894	.876	.859	.842	.812
64	.988	.976	.964	.953	.942	.931	.920	.910	.900	.890	.872	.854	.837	.806
63	.987	.975	.963	.951	.940	.928	.918	.907	.897	.887	.868	.850	.833	.801
62	.987	.974	.961	.949	.938	.926	.915	.904	.894	.884	.864	.845	.828	.795
61	.986	.973	.960	.948	.936	.924	.912	.901	.890	.880	.860	.841	.823	.789
60	.986	.972	.959	.946	.933	.921	.909	.898	.887	.876	.855	.836	.817	.783
59	.985	.971	.958	.944	.931	.919	.907	.895	.883	.872	.851	.831	.812	.777
58	.985	.970	.956	.943	.929	.917	.904	.892	.880	.869	.847	.826	.807	.771
57	.985	.970	.955	.941	.927	.914	.901	.889	.877	.865	.843	.822	.802	.765
56	.984	.969	.954	.939	.925	.912	.899	.886	.874	.862	.839	.818	.797	.760
55	.984	.968	.953	.938	.924	.910	.896	.884	.871	.859	.836	.814	.793	.756
54	.983	.967	.951	.936	.922	.908	.894	.881	.868	.856	.832	.810	.790	.752
53	.983	.966	.950	.935	.920	.906	.892	.878	.866	.853	.829	.807	.786	.748
52	.982	.965	.949	.933	.918	.904	.890	.876	.863	.850	.826	.804	.783	.744
51	.982	.965	.948	.932	.917	.902	.887	.874	.860	.847	.823	.800	.779	.740
50	.982	.964	.947	.930	.915	.899	.885	.871	.857	.844	.819	.796	.775	.735

49	.981	.963	.946	.929	.913	.897	.882	.868	.854	.841	.816	.792	.770	.731
48	.981	.962	.945	.927	.911	.895	.880	.866	.852	.838	.812	.789	.767	.727
47	.980	.962	.944	.926	.910	.894	.878	.864	.849	.836	.810	.786	.764	.723
46	.980	.961	.943	.925	.909	.893	.877	.863	.848	.835	.809	.785	.763	.723
45	.980	.961	.942	.925	.908	.892	.877	.862	.848	.834	.808	.784	.762	.722
44	.980	.960	.942	.924	.907	.891	.876	.861	.847	.833	.808	.784	.762	.722
43	.980	.960	.941	.924	.907	.891	.875	.861	.846	.833	.807	.784	.762	.722
42	.979	.959	.940	.922	.905	.888	.872	.857	.843	.829	.803	.779	.757	.717
41	.978	.958	.938	.920	.902	.885	.869	.853	.839	.825	.798	.774	.751	.710
40	.978	.957	.937	.918	.899	.882	.866	.850	.835	.820	.793	.768	.745	.704
39	.977	.956	.935	.916	.897	.879	.863	.846	.831	.816	.789	.764	.741	.699
38	.977	.955	.934	.914	.895	.877	.860	.843	.828	.813	.785	.760	.736	.694
37	.976	.954	.933	.912	.893	.875	.857	.841	.825	.810	.782	.756	.732	.690
36	.976	.953	.932	.911	.891	.873	.855	.838	.822	.807	.779	.753	.729	.686
35	.976	.953	.931	.910	.890	.871	.854	.837	.821	.805	.777	.751	.727	.684
34	.975	.952	.930	.909	.889	.870	.852	.835	.819	.804	.775	.749	.725	.683
33	.975	.951	.929	.908	.888	.869	.851	.834	.818	.802	.774	.748	.724	.682
32	.975	.951	.929	.907	.887	.868	.850	.833	.817	.802	.773	.747	.724	.682
31	.975	.951	.928	.907	.886	.867	.849	.832	.816	.801	.773	.747	.724	.682
30	.974	.950	.927	.906	.886	.867	.849	.832	.816	.801	.773	.747	.724	.682
29	.974	.950	.927	.906	.886	.867	.849	.832	.816	.801	.773	.747	.724	.682
28	.974	.949	.926	.904	.883	.864	.846	.828	.812	.797	.769	.744	.721	.682
27	.973	.947	.922	.899	.877	.857	.837	.819	.802	.785	.754	.727	.701	.657
26	.972	.945	.919	.895	.872	.851	.830	.811	.792	.775	.742	.712	.685	.636
25	.971	.943	.917	.892	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
24	.971	.943	.917	.892	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
23	.971	.943	.917	.892	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
22	.971	.943	.917	.892	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
21	.971	.943	.917	.892	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
20	.971	.943	.917	.892	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
19	.970	.941	.915	.891	.868	.846	.824	.804	.785	.766	.732	.701	.672	.620
18	.969	.940	.912	.887	.864	.843	.823	.804	.785	.766	.732	.701	.672	.620
17	.968	.938	.911	.885	.862	.840	.820	.801	.784	.766	.732	.701	.672	.620
16	.968	.937	.910	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
15	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
14	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
13	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
12	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
11	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
10	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
9	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
8	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
7	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
6	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620
5	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-91903, filed 12/1/88, effective 1/1/89; 88-14-107 (Order 88-10), § 296-17-91903, filed 7/6/88; 86-17-002 (Order 86-29), § 296-17-91903, filed 8/8/86. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-91903, filed 2/25/86.]

WAC 296-17-91904 Table V.

RETROSPECTIVE RATING PLAN A2
MINIMUM PREMIUM RATIOS
AND BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .729
Effective January 1, 1989

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.517	.508	.500	.494	.488	.483	.479	.475	.472	.469	.463	.458	.453	.443
	Minimum Premium Ratio	.993	.986	.980	.974	.968	.963	.958	.953	.948	.943	.934	.924	.916	.899
83	Basic Premium Ratio	.516	.506	.498	.491	.485	.480	.476	.472	.468	.465	.458	.453	.447	.438
	Minimum Premium Ratio	.992	.985	.979	.972	.966	.961	.955	.950	.945	.939	.930	.920	.911	.893
82	Basic Premium Ratio	.515	.504	.495	.488	.482	.477	.472	.468	.464	.460	.454	.448	.442	.432
	Minimum Premium Ratio	.992	.984	.977	.971	.965	.959	.953	.947	.941	.936	.925	.915	.905	.887
81	Basic Premium Ratio	.513	.502	.493	.485	.479	.473	.468	.464	.460	.456	.449	.443	.437	.427
	Minimum Premium Ratio	.991	.983	.976	.969	.963	.956	.950	.944	.938	.933	.922	.911	.900	.881

80	Basic Premium Ratio	.512	.500	.490	.482	.476	.470	.465	.460	.456	.452	.445	.438	.432	.421
	Minimum Premium Ratio	.991	.983	.975	.968	.961	.954	.948	.941	.935	.929	.917	.906	.895	.875
79	Basic Premium Ratio	.511	.498	.487	.479	.472	.466	.461	.456	.452	.448	.440	.433	.427	.415
	Minimum Premium Ratio	.990	.981	.973	.966	.958	.951	.944	.938	.931	.925	.913	.901	.889	.868
78	Basic Premium Ratio	.509	.496	.485	.476	.469	.463	.457	.452	.447	.443	.435	.428	.421	.409
	Minimum Premium Ratio	.990	.980	.972	.964	.956	.948	.941	.934	.927	.920	.907	.895	.883	.860
77	Basic Premium Ratio	.508	.494	.483	.474	.466	.459	.454	.448	.443	.439	.430	.423	.416	.402
	Minimum Premium Ratio	.989	.979	.970	.961	.953	.945	.937	.930	.923	.915	.902	.888	.876	.852
76	Basic Premium Ratio	.507	.492	.480	.471	.463	.456	.450	.444	.439	.434	.425	.417	.410	.396
	Minimum Premium Ratio	.988	.978	.968	.959	.950	.942	.934	.926	.919	.911	.897	.883	.870	.845
75	Basic Premium Ratio	.506	.490	.477	.467	.459	.452	.445	.440	.434	429	.420	.412	.404	.390
	Minimum Premium Ratio	.988	.977	.967	.957	.948	.939	.931	.923	.915	.907	.892	.878	.864	.838
74	Basic Premium Ratio	.504	.487	.475	.464	.456	.448	.442	.435	.430	.425	.415	.406	.398	.384
	Minimum Premium Ratio	.987	.976	.965	.955	.945	.936	.927	.918	.910	.902	.886	871	.857	.830
73	Basic Premium Ratio	.503	.485	.472	.461	.452	.444	.437	.431	.425	.420	.410	.401	.393	.377
	Minimum Premium Ratio	.986	.974	.963	.952	.942	.933	.923	.914	.905	.897	.880	.865	.849	.821
72	Basic Premium Ratio	.501	.483	.469	.458	.449	.441	.433	.427	.421	.415	.405	.395	.387	.370
	Minimum Premium Ratio	.986	.973	.961	.950	.939	.929	.919	.910	.901	.892	.874	.858	.842	.813
71	Basic Premium Ratio	.499	.480	.466	.455	.445	.437	.429	.422	.416	.410	.399	.390	.380	.364
	Minimum Premium Ratio	.985	.972	.959	.948	.936	.926	.916	.906	.896	.886	.868	.851	.835	.804
70	Basic Premium Ratio	.498	.478	.463	.451	.441	.433	.425	.418	.411	.405	.394	.384	.374	.357
	Minimum Premium Ratio	.984	.970	.957	.945	.934	.922	.912	.901	.891	.881	.862	.844	.827	.796
69	Basic Premium Ratio	.496	.475	.460	.448	.438	.429	.421	.413	.406	.400	.389	.378	.368	.351
	Minimum Premium Ratio	.984	.969	.956	.943	.931	.919	.908	.897	.887	.876	.857	.838	.821	.788
68	Basic Premium Ratio	.494	.472	.457	.444	.433	.424	.416	.408	.401	.395	.383	.372	.362	.344
	Minimum Premium Ratio	.983	.968	.954	.940	.928	.916	.904	.893	.883	.872	.852	.833	.815	.782
67	Basic Premium Ratio	.492	.469	.453	.440	.429	.420	.411	.403	.396	.390	.377	.366	.356	.338
	Minimum Premium Ratio	.982	.966	.952	.938	.925	.913	.901	.890	.879	.868	.848	.828	.810	.776
66	Basic Premium Ratio	.489	.467	.450	.436	.425	.415	.406	.398	.391	.384	.372	.360	.350	.331
	Minimum Premium Ratio	.981	.965	.950	.936	.922	.909	.897	.885	.874	.863	.841	.822	.803	.769
65	Basic Premium Ratio	.487	.464	.446	.433	.421	.411	.402	.393	.386	.379	.366	.354	.343	.324
	Minimum Premium Ratio	.981	.963	.948	.933	.919	.905	.893	.880	.868	.857	.835	.815	.796	.761
64	Basic Premium Ratio	.485	.461	.443	.429	.417	.406	.397	.388	.380	.373	.360	.348	.337	.317
	Minimum Premium Ratio	.980	.962	.945	.930	.916	.902	.888	.876	.864	.852	.829	.808	.788	.753
63	Basic Premium Ratio	.483	.457	.439	.425	.412	.402	.392	.383	.375	.368	.354	.342	.330	.311
	Minimum Premium Ratio	.979	.960	.943	.927	.912	.898	.884	.871	.859	.846	.823	.802	.782	.745
62	Basic Premium Ratio	.480	.454	.436	.421	.408	.397	.387	.378	.370	.362	.348	.335	.324	.304
	Minimum Premium Ratio	.978	.959	.941	.925	.909	.894	.880	.867	.854	.841	.818	.796	.775	.738
61	Basic Premium Ratio	.478	.451	.432	.416	.403	.392	.382	.373	.364	.356	.342	.329	.318	.297
	Minimum Premium Ratio	.977	.957	.939	.922	.906	.891	.876	.862	.849	.836	.811	.789	.768	.730
60	Basic Premium Ratio	.475	.448	.428	.412	.399	.387	.377	.367	.358	.350	.336	.323	.311	.290
	Minimum Premium Ratio	.976	.955	.936	.919	.902	.886	.871	.857	.843	.830	.805	.781	.760	.721
59	Basic Premium Ratio	.473	.445	.424	.408	.394	.382	.371	.362	.353	.344	.329	.316	.304	.283
	Minimum Premium Ratio	.975	.954	.934	.916	.898	.882	.867	.852	.837	.824	.798	.774	.752	.713
58	Basic Premium Ratio	.471	.442	.421	.404	.389	.377	.366	.356	.347	.338	.323	.310	.298	.277
	Minimum Premium Ratio	.974	.952	.931	.912	.895	.878	.862	.847	.832	.818	.792	.767	.745	.704
57	Basic Premium Ratio	.468	.438	.417	.399	.385	.372	.361	.351	.341	.333	.317	.303	.291	.270
	Minimum Premium Ratio	.973	.950	.929	.909	.891	.874	.857	.842	.827	.813	.786	.761	.738	.697
56	Basic Premium Ratio	.465	.434	.412	.395	.380	.367	.355	.345	.335	.326	.311	.297	.285	.263
	Minimum Premium Ratio	.972	.948	.926	.906	.887	.870	.853	.837	.822	.807	.780	.755	.731	.690
55	Basic Premium Ratio	.462	.430	.408	.390	.374	.361	.349	.339	.329	.320	.304	.290	.278	.257
	Minimum Premium Ratio	.971	.946	.924	.903	.884	.866	.849	.832	.817	.802	.774	.749	.725	.683
54	Basic Premium Ratio	.458	.426	.403	.384	.369	.355	.343	.333	.323	.314	.298	.284	.271	.250
	Minimum Premium Ratio	.970	.945	.922	.900	.880	.862	.844	.827	.812	.797	.768	.743	.719	.677
53	Basic Premium Ratio	.455	.422	.398	.379	.363	.350	.337	.327	.317	.307	.291	.277	.265	.244
	Minimum Premium Ratio	.969	.943	.919	.897	.877	.858	.840	.823	.807	.792	.763	.737	.713	.671
52	Basic Premium Ratio	.451	.417	.393	.374	.358	.344	.332	.320	.310	.301	.285	.271	.258	.238
	Minimum Premium Ratio	.968	.941	.917	.895	.874	.854	.836	.819	.803	.787	.758	.732	.709	.666
51	Basic Premium Ratio	.447	.413	.388	.369	.352	.338	.325	.314	.304	.295	.278	.264	.252	.232

	Minimum Premium Ratio	.967	.939	.914	.891	.870	.851	.832	.815	.798	.782	.753	.727	.703	.660
50	Basic Premium Ratio	.443	.408	.383	.363	.346	.332	.319	.308	.298	.288	.272	.258	.245	.225
	Minimum Premium Ratio	.966	.937	.912	.888	.867	.846	.828	.810	.793	.777	.747	.721	.697	.654
49	Basic Premium Ratio	.440	.403	.378	.357	.340	.326	.313	.301	.291	.282	.265	.251	.239	.219
	Minimum Premium Ratio	.965	.935	.909	.885	.863	.842	.823	.805	.788	.772	.742	.715	.690	.647
48	Basic Premium Ratio	.436	.399	.372	.352	.334	.320	.307	.295	.285	.275	.259	.245	.232	.213
	Minimum Premium Ratio	.964	.933	.907	.882	.860	.839	.819	.801	.783	.767	.737	.710	.685	.641
47	Basic Premium Ratio	.431	.394	.367	.346	.328	.313	.300	.289	.278	.269	.252	.238	.226	.207
	Minimum Premium Ratio	.962	.931	.904	.879	.856	.835	.816	.797	.780	.763	.733	.706	.681	.637
46	Basic Premium Ratio	.427	.388	.361	.339	.321	.306	.293	.282	.271	.262	.246	.232	.220	.201
	Minimum Premium Ratio	.961	.929	.901	.876	.853	.832	.812	.793	.776	.760	.729	.702	.678	.635
45	Basic Premium Ratio	.423	.383	.354	.333	.315	.300	.286	.275	.265	.255	.239	.226	.215	.196
	Minimum Premium Ratio	.960	.927	.899	.873	.850	.829	.809	.790	.773	.757	.727	.700	.675	.633
44	Basic Premium Ratio	.418	.377	.348	.326	.308	.293	.280	.268	.258	.249	.233	.220	.209	.191
	Minimum Premium Ratio	.958	.925	.897	.871	.848	.826	.806	.788	.771	.754	.725	.698	.674	.631
43	Basic Premium Ratio	.413	.371	.342	.319	.301	.286	.273	.262	.252	.243	.227	.215	.204	.186
	Minimum Premium Ratio	.957	.924	.895	.869	.846	.824	.804	.786	.768	.752	.723	.696	.672	.630
42	Basic Premium Ratio	.408	.365	.335	.313	.294	.279	.266	.255	.245	.236	.221	.208	.197	.180
	Minimum Premium Ratio	.956	.921	.892	.865	.842	.820	.799	.781	.763	.747	.716	.690	.666	.623
41	Basic Premium Ratio	.403	.359	.329	.306	.288	.272	.259	.248	.238	.229	.213	.201	.190	.173
	Minimum Premium Ratio	.954	.919	.889	.862	.837	.815	.794	.775	.757	.740	.710	.683	.659	.616
40	Basic Premium Ratio	.398	.353	.322	.299	.281	.265	.252	.241	.231	.222	.207	.194	.184	.167
	Minimum Premium Ratio	.953	.917	.886	.858	.833	.810	.789	.770	.752	.735	.704	.677	.651	.609
39	Basic Premium Ratio	.392	.347	.316	.292	.274	.258	.245	.234	.224	.215	.200	.188	.177	.161
	Minimum Premium Ratio	.951	.914	.883	.855	.829	.806	.785	.765	.747	.730	.699	.671	.646	.603
38	Basic Premium Ratio	.386	.340	.309	.286	.267	.252	.238	.227	.217	.209	.194	.182	.171	.155
	Minimum Premium Ratio	.950	.913	.880	.852	.826	.802	.781	.761	.743	.725	.694	.666	.641	.598
37	Basic Premium Ratio	.380	.333	.302	.279	.260	.245	.232	.221	.211	.202	.188	.176	.166	.150
	Minimum Premium Ratio	.949	.911	.878	.849	.823	.800	.778	.757	.739	.722	.690	.661	.636	.593
36	Basic Premium Ratio	.373	.326	.295	.272	.253	.238	.225	.214	.204	.196	.181	.170	.160	.145
	Minimum Premium Ratio	.948	.909	.876	.847	.821	.797	.775	.755	.736	.718	.687	.658	.634	.590
35	Basic Premium Ratio	.366	.318	.287	.264	.246	.230	.218	.207	.197	.189	.175	.164	.154	.140
	Minimum Premium Ratio	.947	.908	.874	.845	.818	.795	.773	.752	.734	.716	.685	.656	.632	.588
34	Basic Premium Ratio	.358	.310	.279	.256	.238	.223	.211	.200	.191	.183	.169	.158	.149	.135
	Minimum Premium Ratio	.946	.906	.873	.844	.817	.793	.771	.751	.732	.714	.683	.655	.630	.587
33	Basic Premium Ratio	.349	.302	.271	.249	.231	.216	.204	.194	.184	.177	.163	.153	.144	.130
	Minimum Premium Ratio	.945	.906	.872	.842	.816	.792	.770	.750	.732	.714	.683	.655	.630	.588
32	Basic Premium Ratio	.341	.294	.263	.241	.224	.209	.197	.187	.178	.171	.158	.148	.139	.126
	Minimum Premium Ratio	.945	.905	.872	.842	.816	.792	.770	.750	.732	.714	.683	.655	.631	.589
31	Basic Premium Ratio	.333	.285	.255	.233	.216	.202	.190	.180	.172	.164	.152	.142	.134	.122
	Minimum Premium Ratio	.944	.904	.870	.841	.814	.790	.769	.749	.730	.714	.683	.656	.633	.591
30	Basic Premium Ratio	.324	.277	.247	.225	.208	.195	.183	.174	.166	.159	.147	.137	.130	.118
	Minimum Premium Ratio	.943	.902	.869	.840	.814	.790	.769	.748	.730	.713	.683	.658	.634	.595
29	Basic Premium Ratio	.315	.268	.239	.218	.201	.188	.177	.168	.160	.153	.142	.133	.126	.115
	Minimum Premium Ratio	.942	.902	.868	.839	.813	.790	.769	.749	.731	.715	.685	.659	.637	.599
28	Basic Premium Ratio	.306	.260	.231	.210	.194	.181	.170	.161	.153	.147	.136	.127	.120	.109
	Minimum Premium Ratio	.942	.901	.867	.838	.811	.788	.766	.747	.729	.711	.681	.655	.632	.593
27	Basic Premium Ratio	.298	.252	.223	.202	.186	.173	.163	.153	.146	.139	.128	.119	.112	.101
	Minimum Premium Ratio	.940	.898	.864	.833	.806	.781	.758	.738	.718	.700	.668	.640	.614	.571
26	Basic Premium Ratio	.290	.244	.216	.195	.179	.166	.155	.146	.138	.132	.121	.112	.105	.094
	Minimum Premium Ratio	.939	.896	.860	.829	.801	.775	.752	.731	.711	.691	.657	.627	.599	.553
25	Basic Premium Ratio	.281	.236	.208	.188	.172	.159	.148	.139	.132	.125	.114	.105	.098	.088
	Minimum Premium Ratio	.938	.895	.858	.826	.797	.771	.747	.725	.704	.685	.650	.619	.592	.542
24	Basic Premium Ratio	.270	.226	.199	.179	.164	.152	.142	.133	.126	.120	.110	.102	.095	.086
	Minimum Premium Ratio	.938	.894	.858	.827	.798	.773	.749	.729	.708	.689	.655	.625	.600	.551
23	Basic Premium Ratio	.259	.216	.190	.171	.156	.145	.136	.128	.121	.115	.106	.098	.093	.084
	Minimum Premium Ratio	.938	.895	.860	.829	.802	.777	.753	.733	.714	.697	.663	.636	.608	.564
22	Basic Premium Ratio	.248	.207	.181	.163	.150	.139	.130	.123	.116	.111	.102	.095	.090	.082
	Minimum Premium Ratio	.938	.896	.862	.832	.805	.781	.760	.739	.722	.704	.674	.648	.622	.580

21	Basic Premium Ratio	.236	.197	.173	.156	.143	.133	.125	.118	.112	.107	.099	.093	.088	.080
	Minimum Premium Ratio	.940	.899	.865	.836	.811	.787	.766	.747	.730	.714	.685	.659	.636	.599
20	Basic Premium Ratio	.226	.188	.165	.149	.136	.126	.119	.112	.107	.102	.094	.089	.084	.077
	Minimum Premium Ratio	.939	.898	.865	.835	.810	.788	.766	.748	.730	.715	.689	.662	.642	.607
19	Basic Premium Ratio	.218	.180	.156	.140	.128	.119	.111	.105	.100	.096	.089	.084	.080	.074
	Minimum Premium Ratio	.937	.894	.860	.830	.804	.781	.761	.742	.724	.708	.680	.655	.633	.597
18	Basic Premium Ratio	.208	.171	.148	.133	.121	.112	.105	.099	.095	.091	.084	.080	.076	.071
	Minimum Premium Ratio	.935	.892	.857	.826	.800	.777	.756	.737	.718	.703	.677	.651	.631	.594
17	Basic Premium Ratio	.199	.162	.140	.125	.115	.106	.099	.094	.090	.086	.081	.076	.073	.069
	Minimum Premium Ratio	.934	.891	.856	.826	.798	.775	.755	.736	.717	.703	.673	.653	.631	.592
16	Basic Premium Ratio	.189	.154	.133	.119	.109	.101	.095	.090	.086	.082	.077	.073	.071	.067
	Minimum Premium Ratio	.934	.890	.855	.825	.798	.775	.754	.736	.719	.706	.679	.658	.633	.598
15	Basic Premium Ratio	.181	.146	.126	.113	.103	.096	.090	.086	.082	.079	.075	.071	.069	.065
	Minimum Premium Ratio	.933	.889	.855	.826	.801	.778	.759	.739	.724	.710	.682	.663	.641	.613
14	Basic Premium Ratio	.176	.139	.119	.108	.100	.093	.088	.084	.081	.078	.074	.070	.068	.065
	Minimum Premium Ratio	.924	.878	.850	.821	.796	.775	.755	.737	.720	.706	.679	.663	.642	.608
13	Basic Premium Ratio	.170	.131	.113	.103	.096	.090	.085	.082	.079	.076	.072	.070	.067	.064
	Minimum Premium Ratio	.915	.868	.844	.818	.793	.772	.754	.735	.719	.706	.682	.656	.643	.612
12	Basic Premium Ratio	.164	.123	.107	.099	.092	.087	.083	.080	.077	.075	.071	.069	.067	.064
	Minimum Premium Ratio	.904	.860	.839	.812	.791	.770	.751	.732	.718	.702	.680	.655	.637	.606
11	Basic Premium Ratio	.156	.113	.102	.094	.089	.084	.081	.078	.075	.073	.070	.068	.066	.063
	Minimum Premium Ratio	.892	.859	.834	.811	.786	.768	.747	.730	.718	.704	.678	.655	.638	.612
10	Basic Premium Ratio	.148	.104	.097	.090	.086	.082	.078	.076	.074	.072	.069	.067	.065	.063
	Minimum Premium Ratio	.876	.858	.829	.807	.782	.762	.748	.728	.712	.699	.676	.654	.640	.605
9	Basic Premium Ratio	.139	.098	.092	.087	.082	.079	.076	.074	.072	.070	.068	.066	.065	.062
	Minimum Premium Ratio	.856	.853	.825	.800	.782	.761	.744	.727	.712	.702	.674	.654	.631	.612
8	Basic Premium Ratio	.106	.093	.087	.083	.079	.076	.074	.072	.070	.069	.067	.065	.064	.062
	Minimum Premium Ratio	.855	.846	.823	.798	.779	.761	.741	.725	.713	.697	.671	.654	.633	.604
7	Basic Premium Ratio	.097	.088	.083	.079	.076	.074	.072	.070	.069	.068	.066	.064	.063	.061
	Minimum Premium Ratio	.855	.840	.818	.797	.777	.756	.738	.725	.707	.691	.668	.655	.636	.613
6	Basic Premium Ratio	.089	.083	.079	.076	.074	.072	.070	.068	.067	.066	.065	.063	.062	.061
	Minimum Premium Ratio	.855	.836	.814	.792	.768	.749	.735	.725	.709	.696	.664	.656	.640	.602
5	Basic Premium Ratio	.082	.078	.075	.073	.071	.069	.068	.067	.066	.065	.063	.062	.062	.061
	Minimum Premium Ratio	.855	.833	.811	.787	.767	.752	.732	.714	.700	.689	.677	.658	.624	.586

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-91904, filed 12/1/88, effective 1/1/89; 88-14-107 (Order 88-10), § 296-17-91904, filed 7/6/88; 86-17-002 (Order 86-29), § 296-17-91904, filed 8/8/86. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-91904, filed 2/25/86.]

WAC 296-17-91905 Table VI.

RETROSPECTIVE RATING PLAN A3
MINIMUM PREMIUM RATIOS
AND BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .729
Effective January 1, 1989

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.832	.812	.793	.783	.767	.765	.754	.747	.736	.733	.720	.705	.694	.667
	Minimum Premium Ratio	.986	.974	.964	.955	.948	.940	.934	.928	.923	.917	.907	.898	.889	.873
83	Basic Premium Ratio	.832	.811	.793	.782	.767	.761	.748	.744	.731	.726	.714	.702	.687	.660
	Minimum Premium Ratio	.984	.972	.961	.952	.944	.936	.930	.923	.918	.912	.901	.891	.882	.865
82	Basic Premium Ratio	.832	.810	.793	.781	.766	.757	.747	.740	.731	.724	.709	.693	.680	.653
	Minimum Premium Ratio	.983	.969	.958	.948	.940	.932	.925	.918	.912	.906	.895	.885	.875	.857
81	Basic Premium Ratio	.832	.810	.793	.777	.764	.753	.746	.732	.726	.717	.703	.689	.674	.646
	Minimum Premium Ratio	.981	.967	.955	.945	.936	.928	.920	.914	.907	.901	.889	.878	.868	.849
80	Basic Premium Ratio	.832	.810	.791	.771	.761	.752	.738	.727	.724	.713	.697	.684	.666	.638
	Minimum Premium Ratio	.980	.965	.952	.942	.932	.923	.916	.909	.901	.895	.883	.871	.861	.841

79	Basic Premium Ratio	.831	.810	.788	.770	.757	.745	.733	.725	.715	.706	.691	.675	.658	.629
	Minimum Premium Ratio	.979	.962	.949	.938	.928	.919	.911	.903	.896	.889	.876	.864	.853	.832
78	Basic Premium Ratio	.830	.805	.785	.768	.751	.741	.727	.716	.708	.698	.679	.664	.648	.618
	Minimum Premium Ratio	.977	.960	.946	.934	.924	.914	.906	.898	.890	.883	.870	.857	.845	.823
77	Basic Premium Ratio	.829	.803	.781	.760	.745	.732	.719	.710	.700	.688	.672	.654	.636	.607
	Minimum Premium Ratio	.976	.958	.943	.931	.920	.910	.901	.892	.884	.877	.862	.849	.837	.813
76	Basic Premium Ratio	.829	.802	.776	.757	.739	.727	.712	.701	.689	.679	.661	.644	.627	.595
	Minimum Premium Ratio	.974	.955	.940	.927	.916	.905	.896	.887	.879	.871	.856	.842	.829	.805
75	Basic Premium Ratio	.828	.796	.771	.753	.736	.722	.705	.693	.682	.671	.653	.634	.618	.586
	Minimum Premium Ratio	.973	.953	.937	.923	.911	.900	.891	.882	.873	.865	.849	.835	.821	.796
74	Basic Premium Ratio	.828	.796	.767	.750	.730	.713	.698	.687	.675	.665	.644	.627	.609	.575
	Minimum Premium Ratio	.971	.950	.934	.919	.907	.896	.886	.876	.867	.858	.842	.826	.812	.786
73	Basic Premium Ratio	.827	.791	.767	.746	.727	.708	.694	.681	.670	.658	.634	.618	.597	.565
	Minimum Premium Ratio	.969	.948	.930	.915	.902	.891	.880	.870	.860	.851	.835	.818	.804	.776
72	Basic Premium Ratio	.827	.790	.762	.738	.720	.703	.690	.674	.662	.649	.627	.608	.588	.554
	Minimum Premium Ratio	.967	.945	.927	.912	.898	.886	.874	.864	.854	.845	.827	.810	.795	.766
71	Basic Premium Ratio	.826	.789	.760	.736	.716	.696	.681	.667	.653	.641	.619	.598	.577	.543
	Minimum Premium Ratio	.965	.942	.923	.907	.893	.881	.869	.858	.848	.838	.819	.802	.786	.756
70	Basic Premium Ratio	.825	.787	.754	.731	.712	.693	.676	.660	.647	.634	.609	.588	.568	.532
	Minimum Premium Ratio	.964	.939	.920	.903	.888	.875	.863	.852	.841	.831	.812	.794	.777	.746
69	Basic Premium Ratio	.824	.784	.751	.725	.704	.686	.667	.653	.641	.626	.602	.578	.557	.521
	Minimum Premium Ratio	.962	.936	.916	.899	.884	.870	.858	.846	.834	.824	.804	.786	.769	.737
68	Basic Premium Ratio	.824	.779	.746	.718	.697	.677	.660	.644	.631	.615	.592	.567	.547	.510
	Minimum Premium Ratio	.959	.933	.912	.895	.879	.865	.852	.840	.828	.818	.797	.779	.761	.729
67	Basic Premium Ratio	.824	.778	.742	.713	.690	.669	.653	.636	.621	.607	.582	.559	.538	.500
	Minimum Premium Ratio	.957	.929	.908	.890	.874	.860	.846	.834	.822	.811	.790	.771	.753	.721
66	Basic Premium Ratio	.821	.774	.737	.709	.684	.663	.645	.629	.613	.598	.571	.548	.526	.490
	Minimum Premium Ratio	.955	.926	.904	.885	.869	.854	.840	.827	.815	.804	.783	.763	.745	.711
65	Basic Premium Ratio	.821	.769	.732	.702	.677	.657	.637	.619	.604	.588	.561	.538	.517	.479
	Minimum Premium Ratio	.952	.923	.900	.881	.864	.848	.834	.821	.808	.797	.775	.754	.735	.701
64	Basic Premium Ratio	.818	.764	.727	.697	.670	.648	.629	.612	.596	.580	.552	.528	.507	.469
	Minimum Premium Ratio	.950	.920	.896	.876	.859	.843	.828	.814	.801	.789	.767	.746	.726	.691
63	Basic Premium Ratio	.818	.762	.722	.692	.666	.642	.622	.603	.586	.571	.543	.517	.495	.458
	Minimum Premium Ratio	.947	.916	.892	.871	.853	.837	.822	.808	.795	.782	.759	.738	.718	.682
62	Basic Premium Ratio	.814	.760	.719	.687	.659	.636	.616	.596	.578	.562	.534	.509	.486	.448
	Minimum Premium Ratio	.945	.912	.887	.866	.848	.831	.815	.801	.788	.775	.751	.729	.709	.673
61	Basic Premium Ratio	.813	.754	.713	.680	.652	.628	.606	.587	.570	.553	.524	.497	.475	.437
	Minimum Premium Ratio	.942	.909	.883	.861	.842	.825	.809	.794	.780	.767	.743	.721	.700	.663
60	Basic Premium Ratio	.811	.749	.705	.672	.644	.618	.597	.577	.558	.543	.513	.486	.464	.425
	Minimum Premium Ratio	.939	.905	.879	.856	.836	.819	.802	.787	.773	.759	.734	.712	.690	.653
59	Basic Premium Ratio	.805	.744	.699	.664	.634	.608	.586	.567	.549	.532	.501	.475	.452	.413
	Minimum Premium Ratio	.937	.901	.874	.851	.831	.813	.796	.780	.765	.751	.726	.703	.681	.643
58	Basic Premium Ratio	.802	.737	.691	.655	.626	.599	.577	.557	.538	.521	.490	.464	.441	.403
	Minimum Premium Ratio	.934	.898	.870	.846	.825	.807	.789	.773	.758	.744	.718	.694	.672	.633
57	Basic Premium Ratio	.796	.731	.685	.647	.618	.591	.568	.547	.528	.511	.480	.454	.431	.392
	Minimum Premium Ratio	.932	.894	.865	.841	.819	.800	.782	.766	.751	.736	.710	.685	.663	.624
56	Basic Premium Ratio	.794	.725	.678	.640	.609	.581	.558	.537	.518	.501	.470	.443	.421	.382
	Minimum Premium Ratio	.928	.890	.860	.835	.813	.794	.776	.759	.743	.728	.701	.677	.654	.614
55	Basic Premium Ratio	.790	.721	.671	.632	.601	.573	.550	.527	.509	.490	.460	.433	.411	.371
	Minimum Premium Ratio	.925	.885	.855	.830	.807	.787	.768	.752	.735	.721	.693	.668	.645	.606
54	Basic Premium Ratio	.787	.714	.666	.626	.592	.565	.541	.518	.499	.481	.450	.423	.400	.363
	Minimum Premium Ratio	.921	.881	.849	.823	.801	.780	.761	.744	.728	.713	.685	.660	.637	.597
53	Basic Premium Ratio	.784	.709	.659	.617	.585	.555	.532	.509	.489	.472	.440	.414	.391	.353
	Minimum Premium Ratio	.917	.876	.844	.818	.794	.774	.754	.737	.721	.705	.677	.652	.629	.589
52	Basic Premium Ratio	.780	.704	.651	.610	.577	.548	.522	.501	.481	.463	.431	.405	.382	.345
	Minimum Premium Ratio	.913	.871	.839	.812	.788	.767	.748	.729	.713	.697	.669	.644	.621	.581
51	Basic Premium Ratio	.775	.698	.644	.602	.567	.539	.514	.491	.471	.454	.422	.396	.372	.336
	Minimum Premium Ratio	.909	.866	.833	.806	.782	.760	.740	.722	.705	.689	.661	.635	.613	.573
50	Basic Premium Ratio	.769	.690	.634	.593	.557	.529	.502	.480	.460	.442	.411	.384	.362	.325

	Minimum Premium Ratio	.905	.861	.828	.799	.775	.752	.733	.714	.697	.681	.652	.627	.604	.564
49	Basic Premium Ratio	.763	.682	.626	.583	.548	.519	.493	.470	.450	.432	.400	.374	.352	.316
	Minimum Premium Ratio	.901	.856	.822	.793	.768	.745	.725	.706	.689	.673	.644	.618	.595	.555
48	Basic Premium Ratio	.756	.674	.617	.574	.538	.509	.482	.460	.439	.422	.390	.365	.342	.307
	Minimum Premium Ratio	.897	.851	.816	.786	.761	.738	.718	.699	.682	.665	.636	.610	.587	.547
47	Basic Premium Ratio	.750	.665	.607	.564	.528	.498	.472	.449	.429	.411	.381	.355	.333	.298
	Minimum Premium Ratio	.892	.846	.810	.780	.754	.731	.710	.692	.674	.658	.628	.602	.579	.539
46	Basic Premium Ratio	.741	.654	.596	.552	.516	.485	.460	.437	.418	.400	.370	.345	.323	.289
	Minimum Premium Ratio	.888	.840	.803	.773	.747	.724	.703	.684	.666	.650	.621	.596	.573	.534
45	Basic Premium Ratio	.731	.643	.585	.540	.503	.473	.448	.426	.406	.389	.360	.335	.315	.282
	Minimum Premium Ratio	.884	.834	.796	.766	.740	.717	.696	.677	.660	.643	.614	.589	.567	.528
44	Basic Premium Ratio	.722	.633	.573	.528	.493	.463	.437	.415	.396	.379	.350	.326	.306	.274
	Minimum Premium Ratio	.879	.828	.790	.759	.732	.709	.689	.670	.653	.637	.608	.583	.561	.523
43	Basic Premium Ratio	.712	.622	.562	.517	.481	.451	.426	.405	.386	.370	.341	.318	.298	.267
	Minimum Premium Ratio	.874	.822	.783	.752	.726	.703	.682	.663	.646	.630	.602	.578	.556	.518
42	Basic Premium Ratio	.703	.612	.551	.506	.470	.440	.415	.394	.375	.358	.330	.307	.288	.257
	Minimum Premium Ratio	.869	.815	.776	.745	.718	.694	.673	.654	.637	.621	.593	.568	.547	.509
41	Basic Premium Ratio	.696	.602	.541	.495	.458	.429	.403	.382	.363	.347	.319	.296	.277	.247
	Minimum Premium Ratio	.863	.809	.769	.737	.710	.686	.665	.645	.628	.612	.583	.559	.537	.499
40	Basic Premium Ratio	.686	.592	.530	.484	.448	.418	.392	.371	.352	.336	.308	.286	.267	.237
	Minimum Premium Ratio	.858	.802	.762	.729	.701	.677	.656	.637	.619	.603	.574	.549	.527	.490
39	Basic Premium Ratio	.677	.581	.520	.473	.437	.407	.382	.360	.342	.325	.298	.275	.257	.228
	Minimum Premium Ratio	.852	.796	.754	.721	.693	.669	.648	.628	.610	.594	.566	.541	.519	.482
38	Basic Premium Ratio	.668	.571	.509	.463	.426	.396	.372	.350	.332	.315	.288	.266	.248	.220
	Minimum Premium Ratio	.846	.789	.747	.714	.686	.661	.639	.620	.602	.586	.557	.533	.510	.473
37	Basic Premium Ratio	.659	.562	.499	.453	.416	.387	.362	.340	.322	.306	.279	.257	.240	.212
	Minimum Premium Ratio	.839	.781	.740	.706	.678	.653	.631	.612	.594	.578	.550	.525	.503	.466
36	Basic Premium Ratio	.649	.551	.488	.442	.405	.376	.351	.330	.312	.297	.270	.249	.231	.204
	Minimum Premium Ratio	.832	.774	.732	.698	.670	.645	.624	.604	.586	.570	.542	.517	.496	.459
35	Basic Premium Ratio	.635	.538	.475	.429	.393	.365	.340	.320	.302	.286	.260	.240	.223	.196
	Minimum Premium Ratio	.825	.766	.724	.690	.662	.637	.616	.596	.579	.563	.535	.510	.489	.453
34	Basic Premium Ratio	.623	.525	.463	.418	.382	.354	.330	.309	.292	.277	.252	.231	.215	.189
	Minimum Premium Ratio	.816	.757	.715	.682	.654	.629	.608	.589	.571	.556	.528	.504	.483	.447
33	Basic Premium Ratio	.610	.513	.451	.406	.371	.343	.320	.300	.283	.268	.244	.224	.208	.183
	Minimum Premium Ratio	.808	.749	.707	.674	.646	.622	.600	.582	.564	.549	.521	.498	.477	.442
32	Basic Premium Ratio	.597	.501	.440	.395	.361	.334	.311	.291	.274	.260	.236	.217	.201	.177
	Minimum Premium Ratio	.799	.740	.699	.666	.638	.614	.593	.575	.558	.543	.515	.492	.472	.438
31	Basic Premium Ratio	.582	.486	.425	.382	.348	.321	.299	.280	.264	.250	.226	.208	.193	.171
	Minimum Premium Ratio	.791	.732	.690	.658	.630	.606	.586	.567	.551	.536	.510	.487	.467	.434
30	Basic Premium Ratio	.567	.471	.412	.369	.336	.309	.288	.269	.254	.240	.218	.201	.187	.165
	Minimum Premium Ratio	.782	.723	.681	.649	.622	.599	.579	.561	.545	.530	.504	.482	.463	.430
29	Basic Premium Ratio	.551	.457	.398	.356	.324	.299	.277	.260	.245	.232	.210	.194	.180	.160
	Minimum Premium Ratio	.773	.714	.673	.642	.615	.592	.572	.555	.539	.524	.499	.477	.459	.427
28	Basic Premium Ratio	.537	.444	.386	.344	.313	.287	.266	.249	.234	.221	.200	.184	.171	.151
	Minimum Premium Ratio	.764	.705	.665	.633	.606	.584	.564	.546	.530	.516	.491	.470	.451	.421
27	Basic Premium Ratio	.524	.431	.373	.332	.300	.275	.254	.236	.221	.208	.187	.170	.157	.136
	Minimum Premium Ratio	.755	.697	.655	.623	.596	.573	.552	.534	.518	.502	.476	.453	.433	.400
26	Basic Premium Ratio	.510	.418	.361	.320	.288	.263	.242	.224	.209	.196	.175	.158	.145	.124
	Minimum Premium Ratio	.747	.688	.646	.613	.586	.562	.541	.523	.505	.490	.463	.439	.418	.383
25	Basic Premium Ratio	.497	.405	.348	.307	.276	.251	.230	.213	.198	.185	.164	.147	.134	.114
	Minimum Premium Ratio	.738	.679	.638	.605	.577	.553	.531	.512	.495	.479	.451	.427	.405	.369
24	Basic Premium Ratio	.476	.386	.331	.292	.262	.238	.218	.202	.188	.176	.157	.141	.129	.111
	Minimum Premium Ratio	.727	.669	.628	.596	.569	.546	.525	.506	.490	.474	.447	.423	.402	.367
23	Basic Premium Ratio	.454	.368	.315	.277	.249	.226	.208	.192	.179	.168	.150	.136	.124	.107
	Minimum Premium Ratio	.716	.659	.619	.588	.561	.539	.519	.501	.485	.469	.443	.420	.400	.365
22	Basic Premium Ratio	.434	.351	.300	.264	.237	.216	.198	.184	.172	.161	.144	.131	.120	.104
	Minimum Premium Ratio	.704	.649	.611	.580	.555	.533	.513	.496	.480	.465	.439	.417	.397	.363
21	Basic Premium Ratio	.414	.335	.286	.252	.226	.206	.190	.176	.165	.155	.139	.126	.117	.102
	Minimum Premium Ratio	.693	.640	.603	.573	.548	.527	.508	.491	.476	.461	.436	.414	.395	.361

20	Basic Premium Ratio	.394	.318	.271	.238	.214	.194	.178	.166	.155	.145	.130	.119	.110	.096
	Minimum Premium Ratio	.683	.631	.595	.566	.541	.520	.502	.485	.470	.456	.431	.410	.391	.358
19	Basic Premium Ratio	.377	.301	.254	.222	.198	.179	.164	.152	.142	.133	.120	.109	.101	.089
	Minimum Premium Ratio	.674	.621	.585	.557	.533	.513	.494	.478	.464	.450	.426	.405	.387	.355
18	Basic Premium Ratio	.358	.283	.238	.207	.184	.166	.152	.140	.131	.123	.110	.101	.094	.083
	Minimum Premium Ratio	.664	.612	.575	.547	.524	.505	.488	.472	.458	.445	.421	.401	.383	.352
17	Basic Premium Ratio	.339	.266	.222	.192	.171	.154	.140	.130	.121	.114	.103	.094	.088	.079
	Minimum Premium Ratio	.654	.602	.567	.539	.517	.497	.480	.466	.453	.440	.418	.398	.380	.350
16	Basic Premium Ratio	.320	.249	.208	.179	.159	.143	.131	.121	.113	.106	.096	.088	.083	.075
	Minimum Premium Ratio	.644	.593	.559	.532	.510	.491	.475	.461	.448	.436	.414	.395	.378	.348
15	Basic Premium Ratio	.303	.234	.194	.168	.148	.134	.122	.113	.106	.100	.091	.084	.079	.072
	Minimum Premium Ratio	.635	.586	.552	.526	.504	.486	.470	.457	.445	.433	.412	.393	.376	.346
14	Basic Premium Ratio	.293	.220	.180	.157	.141	.128	.117	.109	.103	.097	.089	.082	.078	.071
	Minimum Premium Ratio	.630	.579	.545	.521	.501	.483	.468	.455	.443	.432	.411	.392	.375	.346
13	Basic Premium Ratio	.281	.204	.167	.148	.133	.122	.112	.105	.099	.094	.086	.081	.076	.070
	Minimum Premium Ratio	.624	.571	.538	.516	.497	.480	.465	.453	.441	.430	.409	.391	.374	.345
12	Basic Premium Ratio	.269	.187	.156	.139	.126	.116	.108	.101	.096	.091	.084	.079	.075	.069
	Minimum Premium Ratio	.618	.562	.533	.512	.493	.477	.463	.451	.440	.429	.408	.390	.374	.345
11	Basic Premium Ratio	.254	.167	.145	.130	.119	.110	.103	.097	.092	.088	.082	.077	.073	.068
	Minimum Premium Ratio	.611	.552	.527	.507	.490	.474	.461	.449	.438	.427	.407	.389	.373	.344
10	Basic Premium Ratio	.238	.150	.135	.122	.113	.105	.098	.093	.089	.085	.079	.075	.072	.067
	Minimum Premium Ratio	.603	.544	.522	.503	.487	.472	.458	.447	.436	.426	.406	.388	.372	.344
9	Basic Premium Ratio	.219	.138	.125	.115	.106	.100	.094	.089	.085	.082	.077	.073	.071	.066
	Minimum Premium Ratio	.593	.538	.517	.500	.483	.469	.456	.445	.434	.424	.405	.387	.372	.343
8	Basic Premium Ratio	.197	.127	.116	.107	.100	.094	.090	.086	.082	.079	.075	.072	.069	.065
	Minimum Premium Ratio	.582	.532	.513	.496	.480	.466	.454	.443	.433	.423	.404	.387	.371	.343
7	Basic Premium Ratio	.170	.117	.108	.100	.094	.089	.085	.082	.079	.077	.073	.070	.068	.064
	Minimum Premium Ratio	.569	.527	.509	.492	.477	.464	.452	.441	.431	.422	.403	.386	.370	.342
6	Basic Premium Ratio	.137	.107	.100	.094	.089	.085	.081	.078	.076	.074	.071	.068	.066	.064
	Minimum Premium Ratio	.552	.522	.505	.489	.475	.462	.450	.439	.430	.420	.402	.385	.369	.342
5	Basic Premium Ratio	.105	.098	.092	.087	.083	.080	.077	.075	.073	.071	.068	.066	.065	.063
	Minimum Premium Ratio	.536	.518	.501	.486	.472	.459	.448	.438	.428	.419	.400	.384	.369	.342

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 88-24-010 (Order 88-26), § 296-17-91905, filed 12/1/88, effective 1/1/89; 88-14-107 (Order 88-10), § 296-17-91905, filed 7/6/88; 86-17-002 (Order 86-29), § 296-17-91905, filed 8/8/86. Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-91905, filed 2/25/86.]

WAC 296-17-920 Assessment for supplemental pension fund. The amount of 24.8 mills ($.0248) shall be retained by each employer from the earnings of each worker for each hour or fraction thereof the worker is employed. Provided that in classifications 6707 and 7102, the employer shall retain twenty cents per day from each worker. The amount of money so retained from the employee shall be matched in an equal amount by each employer, except as otherwise provided in these rules, all such moneys shall be remitted to the department on or before the last day of January, April, July and October of each year for the preceding calendar quarter, provided self-insured employers shall remit to the department as provided under WAC 296-15-060. All such moneys shall be deposited in the supplemental pension fund.

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-920, filed 11/28/94, effective 1/1/95; 93-24-114, § 296-17-920, filed 12/1/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 92-24-063, § 296-17-920, filed 11/30/92, effective 1/1/93; 91-24-053, § 296-17-920, filed 11/27/91, effective 1/1/92; 89-24-051 (Order 89-22), § 296-17-920, filed 12/1/89, effective 1/1/90. Statutory Authority: RCW 51.04.020 and 51.32.073. 87-04-006 (Order 86-49), § 296-17-920, filed 1/23/87. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-920, filed 5/30/86, effective 7/1/86; 83-24-017 (Order 83-36), § 296-17-920, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-920, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-920, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-920, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-920, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-920, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-920, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-920, filed 5/31/77; Order 76-36, § 296-17-920, filed 11/30/76; Order 75-38, § 296-17-920, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-920, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-920, filed 11/27/74, effective 1/1/75; Order 74-6, § 296-17-920, filed 1/23/74.]

WAC 296-17-925 Student volunteers. Any employer electing to insure student volunteers under the authority of chapter 51.12 RCW as now or hereafter amended shall give notice in writing on a form prescribed by the department. Any employer having elected to insure student volunteers shall maintain office records of all hours of work performed by student volunteers. Such office records shall include notice in writing as a registration of each student who has been recognized by the school and accepted by the employer to perform or observe the work of the employer. A report of such hours will be included with the employer's regular quarterly report of payroll as prescribed by the department, and will include payment for the premium based on such hours and at such rates per hour as assigned by the department.

[Statutory Authority: RCW 51.04.020. 94-24-007, § 296-17-925, filed 11/28/94, effective 1/1/95.]

WAC 296-17-930 Volunteers. Any city, county, school district, municipal corporation or any other political subdivision, or private nonprofit charitable organization electing to insure volunteers under the authority of RCW 51.12.035 as now or hereafter amended shall give notice in writing on a form prescribed by the department. Any employer having elected to insure volunteers shall maintain office records of all hours of work performed by volunteers. Such office records shall include notice in writing as a registration of each person who has volunteered and has been accepted by the employer to perform work as a volunteer. A report of such hours will be included with the employer's regular quarterly report of payroll as prescribed by the department, and will include payment for the premium based on such hours and at such rates per hour as assigned by the department.

[Order 77-27, § 296-17-930, filed 11/30/77, effective 1/1/78; Order 75-28, § 296-17-930, filed 8/29/75, effective 10/1/75.]

Chapter 296-18A WAC
REHABILITATION REVIEW

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-18A-010 General information. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-010 (codified as WAC 296-18A-010), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-020 Vocational rehabilitation advisory committee. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-020 (codified as WAC 296-18A-020), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-040 Definitions. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-040 (codified as WAC 296-18A-040), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-070 Application of certain timetables. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-070 (codified as WAC 296-18A-070), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-080 Referral and initial contact. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-080 (codified as WAC 296-18A-080), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-090 Initial evaluations. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-090 (codified as WAC 296-18A-090), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-100 Rehabilitation plans. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-100 (codified as WAC 296-18A-100), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-110 Modification to the rehabilitation plan. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-110 (codified as WAC 296-18A-110), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-120 Plan completion. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-120 (codified as WAC 296-18A-120), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-130 Application of certain timetables (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-130 (codified as WAC 296-18A-130), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-140 Return to work summary report (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-140 (codified as WAC 296-18A-140), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-160 Progress reports (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-160 (codified as WAC 296-18A-160), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-170 Return to work (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-170 (codified as WAC 296-18A-170), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-180 Vocational rehabilitation plan. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-180 (codified as WAC 296-18A-180), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-190 Responsibility of the injured worker. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-190 (codified as WAC 296-18A-190), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-200 Failure to meet responsibilities. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-200 (codified as WAC 296-18A-200), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-210 Resolution of vocational rehabilitation disputes. [Statutory Authority: RCW 51.04.020, 51.41.020 and 51.41.060. 83-17-110 (Order 83-25), § 296-18-210, filed 8/24/83. Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-210 (codified as WAC 296-18A-210), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-300 Registration of vocational rehabilitation counselors. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-300 (codified as WAC 296-18A-300), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-310 Qualifications for registration of vocational rehabilitation counselors. [Statutory Authority: RCW 51.04.020, 51.41.010 and 51.41.030. 83-17-051 (Order 83-24), § 296-18-310, filed 8/16/83. Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-310 (codified as WAC 296-18A-310), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-320 Qualifications for the registration of vocational rehabilitation firms. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-320 (codified as WAC 296-18A-320), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-330 Availability of the register. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-330 (codified as WAC 296-18A-330), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-340 Immediate deregistration. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-340 (codified as WAC 296-18A-340), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-350 Performance evaluations and deregistration. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-350 (codified as WAC 296-18A-350), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-360 Petition for reconsideration of the intent to remove. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-360 (codified as WAC 296-18A-360), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-370 Period of deregistration. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-370 (codified as WAC 296-18A-370), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-400 Job modification assistance. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-400 (codified as WAC 296-18A-400), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-465 Request for proposal. [Statutory Authority: RCW 51.16.120(3) and 51.32.095. 88-21-022 (Order 88-24), § 296-18A-465, filed 10/10/88. Statutory Authority: RCW 51.32.095 and 51.04.030. 87-10-071 (Order 87-14), § 296-18A-465, filed 5/6/87.] Repealed by 92-19-026, filed 9/8/92, effective 10/9/92. Statutory Authority: RCW 51.04.020

WAC 296-18A-420 Definitions. (1) "Employable" means having the skills and training that are commonly and currently necessary in the labor market to be gainfully employed on a reasonably continuous basis when considering the worker's: Age, education, experience, and physical and mental capabilities due to the industrial injury or subsequent reopening.

(2) "Gainful employment" means any occupation, not to exclude self-employment, which allows a worker to be compensated with wages or other earnings considering RCW 51.12.010.

(3) "Formal program" means an approved rehabilitation plan and the contents thereof as described in WAC 296-18A-450 that provides services necessary and likely to enable the injured worker to be employable at gainful employment.

(4) "Vocational rehabilitation counselor" means those persons determined by the department to have met the requirements of these rules regarding experience and training which qualify them to aid the injured workers to become employable at gainful employment.

(5) "Vocational rehabilitation provider" means any vocational rehabilitation counselor or firm that has a vendor number to bill for services the Washington department of labor and industries.

(6) "Vocational rehabilitation firm" means any entity comprised of vocational rehabilitation counselors that has a vendor number whether sole proprietorship, partnership, or corporation.

(7) "Vocational rehabilitation services" means services that are designed to enable the injured worker to become employable at gainful employment. The services may include, but not be limited to vocational evaluation, vocational counseling, job analysis, job modification, on-the-job training, or short-term training programs with job placement services provided.

(8) "Referral source" means either the state fund or self-insurer.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-420 (codified as WAC 296-18A-420), filed 8/13/85.]

WAC 296-18A-440 Reports. The following reports are required from the vocational rehabilitation provider for state fund referrals.

(1) Progress reports. Unless otherwise authorized by the claim manager, in writing, plan development progress reports are to be submitted at thirty day intervals; with plan implementation progress reports submitted at sixty day intervals. These reports should be submitted to the department through VOC-LINK when possible. Progress reports will follow a department approved format. The referral source is to be notified immediately of factors affecting plan completion or changes of status or changes in plan costs.

(2) Closing report. Upon completion of vocational rehabilitation services, a closing report to the referral source shall be submitted by the vocational rehabilitation provider. That report shall contain at least the following:

(a) Assessment of the injured worker's employability status at the time of completion of vocational services;

(b) Whether or not the injured worker has returned to work;

(c) Any remaining barriers to the injured worker becoming employable at gainful employment;

(d) An ability to work summary may be substituted for a closing report.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-440, filed 6/25/90, effective 8/1/90. Statutory Authority: RCW 51.16.120(3) and 51.32.095. 88-21-022 (Order 88-24), § 296-18A-440, filed 10/10/88. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-440 (codified as WAC 296-18A-440), filed 8/13/85.]

WAC 296-18A-445 Self-insured reports. The following reports are required from the self-insurer to be sent to the self-insurance section.

(1) Self-insured rehabilitation referral. A form submitted no later than after paying ninety continuous days of time loss after the initial filing or reopening of a claim. If more time is necessary, an extension may be requested on this form. The format for this form will be supplied by the department.

(2) Employability assessment report. If a vocational referral is not being made and an extension of time is not necessary, this form must be completed and submitted to the self-insured section no later than after paying ninety continuous days of time loss after the initial filing or reopening of a claim. The format for this form will be supplied by the department.

(3) A vocational rehabilitation plan shall be submitted to the self-insurance section by the self-insurer no later than ten calendar days after being signed by the injured worker, vocational rehabilitation provider and the employer. The plan will follow the criteria established in WAC 296-18A-450.

(4) Closing report. Upon completion of a formal program, the self-insurer will submit the closing report to the department. The closing report must follow the criteria as outlined in WAC 296-18A-440(3).

(5) Rehabilitation outcome report. This form is to be submitted with the final self-insurer's report on occupational injury or disease (SIF-5) or, in the case of medical only claims, with the self-insurers accident report (SIF-2), which is submitted at the time of claim closure. The format for this form will be supplied by the department and applies to all claims where vocational rehabilitation services have been provided.

[Statutory Authority: RCW 51.04.020. 88-12-096 (Order 88-07), § 296-18A-445, filed 6/1/88. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-445 (codified as WAC 296-18A-445), filed 8/13/85.]

WAC 296-18A-450 Vocational rehabilitation plan. (1) A vocational rehabilitation plan shall be approved by the referral source prior to its implementation. After the plan has been approved by the referral source, injured worker and vocational rehabilitation counselor, a copy of it shall be sent to all individuals with responsibilities under it. The plan shall contain the following:

(a) Assessment of the skills and abilities, based on the physical capacities and mental status, aptitudes, and transferrable skills of the injured worker;

(b) The services necessary to enable the injured worker to become employable at gainful employment;

(c) Labor market information indicating the employability of the injured worker at plan completion;

(d) An estimate of the cost and the time necessary for the completion of the plan;

(e) A direct comparison of the injured worker's skills with potential types of employment to demonstrate a likelihood of success;

(f) If necessary, a job analysis of the injured worker's previous occupation, including earnings, may be included; and

(g) Any other information that will significantly affect the plan.

(2) The following priorities shall be addressed and justification given to why each preceding priority was not used.

(a) Return to the previous job with the same employer;

(b) Modification of the previous job with the same employer including transitional return to work;

(c) A new job with the same employer in keeping with any limitations or restrictions;

(d) Modification of a new job with the same employer including transitional return to work;

(e) Modification of the previous job with a new employer;

(f) A new job with a new employer or self-employment based upon transferable skills;

(g) Modification of a new job with a new employer;

(h) A new job with a new employer or self-employment involving on-the-job training; and

(i) Short-term retraining and job placement.

(3) Each plan shall be signed by the vocational rehabilitation counselor and the injured worker. In state fund cases, a copy will be sent to the employer, attending physician, department, injured worker and any parties with responsibilities within the plan by the vocational rehabilitation counselor. The following statement shall be printed above the signatures:

> I have read the above plan and understand its contents. By signing this plan I agree to faithfully execute my responsibilities described in it.

(4) If the plan is interrupted for good cause this case will be returned to the referral source at the discretion of the referral source. At the end of such interruption, the referral source may return the referral to the original vocational provider to resume the plan or its preparation.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-450, filed 6/25/90, effective 8/1/90. Statutory Authority: Chapters 51.08 and 51.32 RCW. 88-14-011 (Order 88-13), § 296-18A-450, filed 6/24/88. Statutory Authority: RCW 51.04.020(4) and 51.040.030 [51.04.030]. 87-08-004 (Order 87-09), § 296-18A-450, filed 3/20/87. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-450 (codified as WAC 296-18A-450), filed 8/13/85.]

WAC 296-18A-460 Audits. In order to ensure compliance with the provisions of chapter 296-18A WAC, every vocational rehabilitation provider used by the department shall be subject to an audit of their facilities and files. Audits may be conducted upon petition or upon the department's own initiative. Audits may be for cause or at random and may consist of, but not be limited to, an on-site evaluation of each provider's facilities, files and records, including the accuracy of the records and the accuracy of billing for services. The vocational rehabilitation provider shall receive written notice at least forty-eight hours in advance of such audit.

The audit of vocational rehabilitation providers at locations outside the state of Washington shall be at the expense of the provider and the expense incurred in making such audit shall be paid by the provider.

Such expenses shall be calculated at the usual and normal per diem and travel expense rates established by law and in effect at the time the expenses are incurred.

[Statutory Authority: RCW 51.04.020. 92-19-026, § 296-18A-460, filed 9/8/92, effective 10/9/92. Statutory Authority: RCW 51.16.120(3) and 51.32.095. 88-21-022 (Order 88-24), § 296-18A-460, filed 10/10/88. Statutory Authority: RCW 51.32.095 and 51.04.030. 87-10-070 (Order 87-13), § 296-18A-460, filed 5/6/87. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-460 (codified as WAC 296-18A-460), filed 8/13/85.]

WAC 296-18A-470 Disputes. (1) In order to avoid delay in the vocational rehabilitation process and to allow resolution of disputes between the injured workers, employers and the referral source, a dispute resolution process is provided. The time limits in this section may be extended by the office of rehabilitation services when good cause is shown.

(2) The director must receive a dispute of the employability determination or formal plan, in writing, within fifteen calendar days from receipt of notification to the worker or employer. The dispute must include reasons for the request. The director, at his or her sole discretion, may initiate an investigation to determine further action on the request. A copy of all disputes received shall be sent to all interested parties.

(3) If necessary, and at the discretion of the director, the office of rehabilitation services will communicate with the aggrieved parties to attempt to resolve the dispute. If the dispute is not resolved, the director in his or her sole discretion may take such other action that he or she considers appropriate to protect the rights of the parties. The director shall inform the aggrieved parties of what action, if any was taken within thirty calendar days of receipt of the dispute from the aggrieved party.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-470 (codified as WAC 296-18A-470), filed 8/13/85.]

WAC 296-18A-480 Responsibilities. All parties will have the following responsibilities in assisting the injured worker to become employable at gainful employment:

(1) The attending physician shall maintain open communication with the injured worker's assigned vocational rehabilitation counselor and the referral source. The attending physician shall respond to any requests for information in a timely fashion and will do all that is possible to expedite the vocational rehabilitation process, including making an estimate of physical capacities or restrictions. The attending physician may review the vocational plan, and if the attending physician feels that the injured worker is not physically capable of carrying out the plan, or the plan is unnecessary, based on current medical findings, shall notify the referral source immediately of this opinion with the reasons for such opinion.

(2) The claims unit within the department shall:

(a) Notify the employer of the referral to a vocational rehabilitation provider;

(b) Send the employer a copy of the closing report; and

(c) Give written notice to an injured worker if a complaint of noncooperation has been made.

(3) The employer shall assist the vocational rehabilitation counselor in any way necessary to collect data regarding the former gainful employment of the injured worker. Further, the employer will assist the vocational rehabilitation counselor and attending physician to determine whether or not a modified job could be made available for employment of the injured worker.

(4) The injured worker shall cooperate with all reasonable requests from all responsible individuals in determining disability, developing and implementing the rehabilitation process. Should the injured worker fail to be cooperative, the sanctions as set out in RCW 51.32.110 shall be applied.

(5) In assisting the injured worker to become employable at gainful employment, the provider is to follow the priorities as set out in RCW 51.32.095. Vocational rehabilitation providers actually assisting the injured worker shall have the burden of showing that they meet the qualifications to be a vocational rehabilitation counselor as set out in these rules. The vocational rehabilitation provider shall comply with all the rules in chapter 296-18A WAC and Title 51 RCW, whether the injured worker is referred by the department or a self-insurer under the following criteria:

(a) Develop a formal program to assist the eligible injured worker to become employable at gainful employment;

(b) Maintain accurate records that will be periodically reviewed by department staff;

(c) Notify the referral source of noncooperative behavior on the part of the injured worker;

(d) Keep all parties informed of the progress and development of the formal program; and

(e) Assist/instruct any person, company, or firm utilized in a formal program and/or job modification in the proper procedure for requesting a provider number and completing and submitting the appropriate bill for services.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-480, filed 6/25/90, effective 8/1/90. Statutory Authority: RCW 51.16.120(3) and 51.32.095. 88-21-022 (Order 88-24), § 296-18A-480, filed 10/10/88. Statutory Authority: RCW 51.04.020(4) and 51.040.030 [51.04.030]. 87-08-004 (Order 87-09), § 296-18A-480, filed 3/20/87. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-480 (codified as WAC 296-18A-480), filed 8/13/85.]

WAC 296-18A-490 Billing for vocational services. (1) Vocational rehabilitation providers must comply with the rules contained in chapter 296-20 WAC as they pertain.

(2) Vocational rehabilitation providers must carry general liability insurance, automobile liability insurance, errors and omission/malpractice insurance, and industrial insurance if required by Title 51 RCW.

(3) All vocational services must be prior authorized by the referral source, except immediate job placement. If immediate job placement activities exceed thirty days, authorization must be obtained for further services.

(4) Charges for the following are considered overhead and will not be paid:

(a) Administrative and supervisory salaries and related personnel expenses;

(b) Office rent;

(c) Depreciation;

(d) Equipment purchase and rental;

(e) Telephone expenses including long distance phone call charges;

(f) Postage;

(g) Shipping;

(h) Expendable supplies;

(i) Printing costs;

(j) Copier costs;

(k) Maintenance and repair;

(l) Taxes;

(m) Automobile costs and maintenance;

(n) Insurance;

(o) Dues and subscriptions;

(p) Professional services;

(q) Vacation, sick leave, and other expenses of a similar nature;

(r) Internal staffing time;

(s) Filing of material in case files, setting up files;

(t) Activities associated with reports other than writing or dictating original draft of the report (e.g., editing, filing, distribution, revising, typing, and mailing);

(u) Generating and keeping internal recordkeeping forms;

(v) Time spent on any administrative and clerical activity, including typing, copying, mailing, distributing, filing, payroll, recordkeeping, delivering mail, picking up mail;

(w) Activities associated with counselor training, general discussion regarding office procedures, internal case file reviews by supervisors, meetings, and seminars;

(x) Unanswered phone calls; and

(y) Any other item or service not specifically identified and separately billable.

(5) All bills must be itemized on referral source approved bill forms. The billed charges must be justified in the provider's case records and be consistent with written reports. If charges are not documented, or justified, or consistent, payment may be reduced, denied, or recouped.

(6) Vocational services must be billed using procedure codes, fees, and methods provided by the department of labor and industries. The department will publish codes, fees, and procedures and provide this information to all vocational rehabilitation providers receiving department referrals. Fees shall be established by the department and reviewed at regular intervals.

[Statutory Authority: RCW 51.32.095, 51.04.030, 51.36.100 and 51.36.110. 87-10-072 (Order 87-15), § 296-18A-490, filed 5/6/87. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-490 (codified as WAC 296-18A-490), filed 8/13/85.]

WAC 296-18A-500 Self-insurers. (1) No later than paying ninety continuous days of time loss following the initial filing or reopening of a claim, the self-insurer shall notify the self-insurance section as to whether or not vocational rehabilitation services are necessary and likely to enable the injured worker to become employable at gainful employment. Each of these cases will be reviewed by the self-insurance section. The criteria outlined in RCW 51.32.095, WAC 296-18A-420 and department guidelines must be followed to determine employability. If the injured worker is determined employable, the self-insurer will submit an employability assessment form which contains objective reasons why the injured worker is employable. Within twenty calendar days of receipt of an employability assessment form, the supervisor's designee within the self-insurance section will inform the self-insurer and the injured worker as to whether or not self-insurers determination of employability is approved. If an employability determination cannot be made due to medical instability, the self-insured shall request an extension by notifying the self-insurance section of the injured worker's condition and when a determination can be made. If the request for extension is not approved, notice will be sent within fifteen calendar days of receipt.

(2) The supervisor's designee within the self-insurance section of the department will receive from the self-insurer the vocational rehabilitation plan signed by the injured worker and employer. Within ten calendar days of receipt of the vocational plan, the supervisor's designee will inform the self-insurer, the vocational rehabilitation counselor and the injured worker that the plan has been received. A review of the vocational rehabilitation plan by the supervisor's designee will be initiated upon request by the employer or the injured worker. Reasons for the review must be stated in writing. A request for a plan review must be made prior to completion or termination of the plan. If necessary, conflict resolution techniques, such as conferences and fact-finding, will be used in order to resolve problems with the plan in as fair and expedient manner as possible. The supervisor's designee shall notify the parties of the plan review results no later than sixty days from the date the request was received.

Disputes of the supervisor's designee's determination must be submitted to the director in accordance with WAC 296-18A-470.

(3) Upon completion of the formal program, the self-insurer will submit to the self-insurance section a closing report. Within ten calendar days of receipt of the closing report, the supervisor's designee shall inform the injured worker and employer that vocational services have concluded.

(4) The self-insurer shall provide the self-insurance section with a rehabilitation outcome report on a form prescribed by the department. The rehabilitation outcome report shall be attached to the final self-insurer's report on occupational injury or disease (SIF-5) or, in the case of medical only claims, with the self-insurers accident report (SIF-2), which is submitted at the time of claim closure. A rehabilitation outcome report will be submitted on all claims where vocational rehabilitation services have been provided.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-500, filed 6/25/90, effective 8/1/90; 88-12-096 (Order 88-07), § 296-18A-500, filed 6/1/88. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-500 (codified as WAC 296-18A-500), filed 8/13/85.]

WAC 296-18A-510 Vocational rehabilitation counselor qualifications. (1) All vocational rehabilitation counselors who are registered by the department, will be placed on a list and be eligible to receive referrals. The referral source may only refer to vocational counselors on the list. The department is not obligated to make referrals to anyone on this list.

(2) When it is determined an injured worker is eligible for vocational rehabilitation services, the referral source shall authorize such services. Selection of the appropriate provider of vocational services is at the sole discretion of the referral source. Selected vocational rehabilitation counselors must meet one or more of the following categories of experience and education:

(a) A doctorate or masters degree in rehabilitation counseling, psychology, counseling and guidance, social work, or educational psychology; and a minimum of one year of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services with industrially injured workers;

(b) A masters degree with twenty-four credit hours in a combination of rehabilitation philosophy, rehabilitation history, rehabilitation ethics, medical aspects of disability, psychological aspects of disability, job placement, occupational information, counseling theory, personal and vocational adjustment, work evaluation, practicum in subjects listed in this subsection, or coursework relating to counseling and subjects listed in this subsection; and a minimum of two years of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services with industrially injured workers;

(c) A bachelors degree in rehabilitation counseling, psychology, counseling and guidance, social work, or educational psychology; and a minimum of two years of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services with industrially injured workers; or

(d) A bachelors degree with twenty-four credit hours in a combination of rehabilitation philosophy, rehabilitation history, rehabilitation ethics, medical aspects of disability, psychological aspects of disability, job placement, occupational information, counseling theory, personal and vocational adjustment, work evaluation, practicum in subjects listed in this subsection, or coursework relating to counseling and subjects listed in this subsection; and a minimum of three years of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services; with industrially injured workers.

(3) An intern is an individual who meets the minimum educational requirements as set forth in subsection (2)(a) through (d) of this section, but not the experience requirements. When the intern is employed, the vocational rehabilitation provider shall provide the name of the intern's supervisor. The intern supervisor will be responsible for all rehabilitation work done by the intern. The intern supervisor will co-sign all reports submitted by the intern. The intern must be designated as such on all reports. At the end of the time requirement the intern may apply for or identification number as a fully qualified vocational rehabilitation counselor.

The period of internship shall be not less than one year during which the intern shall satisfactorily complete a training curriculum as approved by the department. At the completion of this curriculum and a satisfactory performance evaluation from the intern's supervisor, the intern may petition to the department to be registered as a fully qualified vocational rehabilitation counselor.

(4) In order to receive or maintain a provider account number, the provider shall submit an application form provided by the department. The owner or legal representative of the provider must sign the application form. The provider shall also submit the names and signatures of all counselors working for the provider. The provider shall also submit official sealed copies of each counselor's college transcripts unless the counselor is already on the department's vocational rehabilitation counselor list, the department having completed a check of qualifications and having sent written notice of their acceptance. If counselors employed by the provider are not on the department's vocational rehabilitation counselor list, completed applications signed by each counselor must be submitted on a form provided by the department. The application form must include a statement of each counselor's experience providing vocational rehabilitation to industrially injured workers and the names of former and current employers and supervisors.

(5) It is the responsibility of the vocational counselor and provider to be familiar with the industrial insurance rules and laws of the state of Washington. The vocational counselor and provider must act in a professional manner and comply with the code of professional ethics for vocational rehabilitation counselors.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-510, filed 6/25/90, effective 8/1/90. Statutory Authority: RCW 51.32.095. 87-10-073 (Order 87-16), § 296-18A-510, filed 5/6/87; 85-17-022 (Order 85-20), § 296-18-510 (codified as WAC 296-18A-510), filed 8/13/85.]

WAC 296-18A-515 Period of registration. (1) The period of registration for vocational rehabilitation counselors shall be two years.

(2) In order to maintain his or her registration with the department, the vocational rehabilitation counselor must complete forty continuing education units (CEUs) within the two-year registration period.

(a) The forty continuing education units must relate to the field of vocational rehabilitation; and

(b) Are subject to approval by the department.

(3) Any vocational rehabilitation counselor that has not provided vocational rehabilitation services to a Washington state industrially injured worker, and has not completed the forty continuing education units as stated in subsection (2) of this section within each two-year period, shall have his/her registration with the department terminated.

(a) For new vocational rehabilitation counselors the two-year time period shall start upon approval of their application by the department.

(b) For vocational rehabilitation counselors who are registered at the time this rule takes effect, the two-year time period shall start on their next birthday.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-515, filed 6/25/90, effective 8/1/90.]

WAC 296-18A-520 Job modification assistance. (1) As provided for in section 13, chapter 63, Laws of 1982 (RCW 51.32.250), the supervisor or supervisor's designee in his or her discretion may pay job modification costs in an amount not to exceed five thousand dollars from the department per worker per job modification. This payment is intended to be a cooperative participation with the employer and funds shall be taken from the appropriate account within the second injury fund. The employer may add to this amount with their own contribution.

(2) An employer requesting job modification assistance must submit to the department a job modification assistance application.

(3) The job modification assistance application shall include, but not be limited to:

(a) A document supporting the need for job modification;

(b) A description of the job modification; and

(c) An itemized account of each expense to be incurred in the job modification. Job modification assistance applications shall be submitted on a form prescribed by the department.

(4) The supervisor or supervisor's designee shall accept, reject, or modify the job modification application within thirty days of receipt. Notification of the supervisor's acceptance, rejection, or modification shall be in writing.

(5) No employer/employee relationship need exist if the modification is used to assist in the successful completion of vocational rehabilitation services as authorized by chapter 51.32 RCW.

[Statutory Authority: RCW 51.04.020. 90-14-009, § 296-18A-520, filed 6/25/90, effective 8/1/90. Statutory Authority: Chapters 51.08 and 51.32 RCW. 88-14-011 (Order 88-13), § 296-18A-520, filed 6/24/88. Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-520 (codified as WAC 296-18A-520), filed 8/13/85.]

Chapter 296-20 WAC
MEDICAL AID RULES

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-20-040 Modalities not requiring prior authorization after sixty days. [Order 68-7, § 296-20-040, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-20-050 Periodical clinical reports. [Order 68-7, § 296-20-050, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-061.

296-20-060 Fees for concurrent treatment. [Order 68-7, § 296-20-060, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-071.

296-20-061 Periodic clinical progress reports. [Order 71-6, § 296-20-061, filed 6/1/71; Order 70-12, § 296-20-061, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-050.] Repealed by Order 74-39, filed 11/22/74.

296-20-070 Consultations. [Order 68-7, § 296-20-070, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-051.

296-20-080 Private room—Special nurses. [Order 68-7, § 296-20-080, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-091.

296-20-085 Isolation of infected cases. [Order 71-6, § 296-20-085, filed 6/1/71; Order 70-12, § 296-20-085, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-085, filed 11/27/68, effective 1/1/69.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3).

296-20-090 Reopenings. [Order 68-7, § 296-20-090, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-097.

296-20-095 Unrelated elective surgery. [Order 68-7, § 296-20-095, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-081.

296-20-105 Laboratory. [Order 68-7, § 296-20-105, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-20-115 Flat fees. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-115, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-115, filed 6/1/71; Order 70-12, § 296-20-115, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-115, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-20-12502 Physician assistant modifiers. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-12502, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-12502, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-12502, filed 11/30/79, effective 1/1/80.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-20-130 Medical aid contracts. [Order 74-7, § 296-20-130, filed 1/30/74; Order 70-12, § 296-20-130, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-130, filed 11/27/68, effective 1/1/69.] Repealed by Order 77-27, filed 11/30/77, effective 1/1/78.

296-20-131 Advance authorization required for nonstandard treatment. [Order 74-7, § 296-20-131, filed 1/30/74.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-20-140 Conversion factor table—Anesthesia. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-004 (Order 86-45), § 296-20-140, filed 1/8/87; 83-24-016 (Order 83-35), § 296-20-140, filed 11/30/83, effective 1/1/84; 82-24-050 (Order 82-39), § 296-20-140, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-140, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-140, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-140, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-140, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-140, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-140, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-140, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-20-140, filed 1/30/74.] Repealed by 88-24-011 (Order 88-28), filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-20-14001 Conversion factor table—Hospital. [Order 75-39, § 296-20-14001, filed 11/28/75, effective 1/1/76.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-20-145 Conversion factor table—Surgery. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-004 (Order 86-45), § 296-20-145, filed 1/8/87; 83-24-016 (Order 83-35), § 296-20-145, filed 11/30/83, effective 1/1/84; 82-24-050 (Order 82-39), § 296-20-145, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-145, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-145, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-145, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-145, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-145, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-145, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-145, filed 1/30/74.] Repealed by 88-24-011 (Order 88-28), filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-20-150 Conversion factor table—Radiology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-004 (Order 86-45), § 296-20-150, filed 1/8/87; 83-24-016 (Order 83-35), § 296-20-150, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-150, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-150, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-150, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-150, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-150, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-150, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-150, filed 1/30/74.] Repealed by 88-24-011 (Order 88-28), filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-20-155 Conversion factor table—Pathology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-004 (Order 86-45), § 296-20-155, filed 1/8/87; 83-24-016 (Order 83-35), § 296-20-155, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-155, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-155, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-155, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-155, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-155, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-20-155, filed 1/30/74.] Repealed by 88-24-011 (Order 88-28), filed 12/1/88, effective 1/1/89. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

WAC 296-20-010 General information. (1) The following rules are promulgated pursuant to RCW 51.04.020 and 51.04.030. The department or self-insurer may purchase necessary physician and other provider services according to the fee schedules. The fee schedules shall be established in consultation with interested persons and updated at times determined by the department in consultation with those interested persons. Prior to the establishment or amendment of the fee schedules, the department will give at least thirty calendar days notice by mail to interested persons who have made timely request for advance notice of the establishment or amendment of the fee schedules. To request advance notice of the establishment or amendment of the fee schedules, interested persons must contact the department at the following address:

Department of Labor and Industries
Health Services Analysis
Interested Person's Mailing List for the Fee Schedules
P.O. Box 44322
Olympia, WA 98504-4322

The department or self-insurer will require the current version of the federal Health Care Financing Administration's Common Procedure Coding System (HCPCS) Level I (or CPT) and II codes on January 1, of each new year. CPT refers to the American Medical Association's Physicians' Current Procedural Terminology codes.

The department and self-insurer will allow a "grace period" in which codes deleted each year may be submitted for payment. This grace period will start on January 1 of each year and the length of time will be determined by department policy.

The adoption of these codes on an annual basis is designed to reduce the administrative burden on providers and lead to more accurate reporting of services. However, the inclusion of a service, product or supply within these new codes does not necessarily imply coverage, reimbursement or endorsement, by the department or self-insurer. The department will make coverage and reimbursement decisions for these new codes on an individual basis.

If there are any services, procedures or narrative text contained in the new HCPCS Level I and II codes that conflict with the medical aid rules or fee schedules, the department's rules and policies take precedence.

Copies of the HCPCS Level I and II codes are available for public inspection. These documents are available in each of the department's service locations.

Copies of the HCPCS Level II codes may be purchased from:

The Superintendent of Documents
United States Government Printing Office
Washington, DC 20402
(202) 783-3238

Copies of the Level I (or CPT) codes may be purchased from:

The American Medical Association
Chicago, Illinois 60601
(800) 621-8335

In addition to the sources listed above, both the Level I and II codes may be purchased from a variety of private sources.

(2) The fee schedules are intended to cover all services for accepted industrial insurance claims. All fees listed are the maximum fees allowable. Practitioners shall bill their usual and customary fee for services. **If a usual and customary fee for any particular service is lower to the general public than listed in the fee schedules, the practitioner shall bill the department or self-insurer at the lower rate.** The department or self-insurer will pay the lesser of the billed charge or the fee schedules' maximum allowable.

(3) The rules contained in the introductory section pertain to *all* practitioners regardless of specialty area or limitation of practice. Additional rules pertaining to specialty areas will be found in the appropriate section of the medical aid rules.

(4) The methodology for determining the maximum allowable fee for a procedure is listed in WAC 296-20-132 and 296-20-135.

(5) No fee is payable for missed appointments unless the appointment is for an examination arranged by the department or self-insurer.

(6) When a claim has been accepted by the department or self-insurer, no provider or his/her representative may bill the worker for the difference between the allowable fee and the usual and customary charge. Nor can the worker be charged a fee, either for interest or completion of forms, related to services rendered for the industrial injury or condition. Refer to chapter 51.04 RCW.

(7) Practitioners must maintain documentation in claimant medical or health care service records adequate to verify the level, type, and extent of services provided to claimants. A health care practitioner's bill for services, appointment book, accounting records, or other similar methodology do not qualify as appropriate documentation for services rendered. Refer to chapter 296-20 WAC and department policy for reporting requirements.

(8) Except as provided in WAC 296-20-055 (temporary treatment of unrelated conditions when retarding recovery), practitioners shall bill, and the department or self-insurer shall pay, only for proper and necessary medical care required for the diagnosis and curative or rehabilitative treatment of the accepted condition.

(9) When a worker is being treated concurrently for an unrelated condition the fee allowable for the service(s) rendered must be shared proportionally between the payors.

(10) Correspondence: Correspondence pertaining to state fund and department of energy claims should be sent to: Department of Labor and Industries, Claims Administration, P.O. Box 44291, Olympia, Washington 98504-4291.

Accident reports should be sent to: Department of Labor and Industries, P.O. Box 44299, Olympia, Washington 98504-4299.

Send provider bills by type (UB-92) to: Department of Labor and Industries, P.O. Box 44266, Olympia, Washington 98504-4266.

Adjustments, Home Nursing and Miscellaneous to: Department of Labor and Industries, P.O. Box 44267, Olympia, Washington 99504-44267

Pharmacy to: Department of Labor and Industries, P.O. Box 44268, Olympia, Washington 99504-4268.

HFCA to: Department of Labor and Industries, P.O. Box 44269, Olympia, Washington 98504-4269.

State fund claims have six digit numbers preceded by a letter other than "S," "T," or "V."

Department of energy claims have seven digit numbers with no letter prefix.

All correspondence and billings pertaining to *crime victims* claims should be sent to Crime Victims Division, Department of Labor and Industries, P.O. Box 44520, Olympia, Washington 98504-4520.

Crime victim claims have six digit numbers preceded by a "V."

All correspondence and billings pertaining to self-insured claims should be sent directly to the employer or the service representative as the case may be.

Self-insured claims are six digit numbers preceded by a "S," or "T."

Communications to the department or self-insurer must show the patient's full name and claim number. If the claim number is unavailable, providers should contact the department or self-insurer for the number, indicating the patient's name, Social Security number, the date and the nature of the injury, and the employer's name. A communication should refer to one claim only. Correspondence must be legible and reproducible, as department records are microfilmed. Correspondence regarding specific claim matters should be sent directly to the department in Olympia or self-insurer in order to avoid rehandling by the service location.

(11) The department's various local service locations should be utilized by providers to obtain information, supplies, or assistance in dealing with matters pertaining to industrial injuries.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-14-044, § 296-20-010, filed 6/29/94, effective 7/30/94; 93-16-072, § 296-20-010, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-20-010, filed 12/1/92, effective 1/1/93; 90-04-057, § 296-20-010, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-20-010, filed 11/30/87, effective 1/1/88; 86-20-074 (Order 86-36), § 296-20-010, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-010, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-010, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-010, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-010, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-010, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-010, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-010, filed 1/30/74; Order 70-12, § 296-20-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-010, filed 11/27/68, effective 1/1/69.]

WAC 296-20-0100 Chiropractic advisory committee. (1) The director or the director's designee shall appoint a chiropractic advisory and utilization review committee.

(2) The committee will function as an advisor to the department with respect to policies affecting chiropractic care, quality assurance, clinical management of cases, utilization review, and the establishment of rules. It shall advise and assist the department in the department's relationship with providers of chiropractic care, and assist the department in ensuring that injured workers receive good quality chiropractic care in a safe and effective manner.

(3) The chiropractic advisory committee shall:

(a) Advise the department on standards as to what constitutes effective and accepted chiropractic treatment, for use by attending chiropractors and for chiropractic consultants to use in reviewing cases referred for consultation;

(b) Advise the department on standards and minimum credentials for chiropractic consultants and the content of consultant reports; and

(c) Review the performance of individual chiropractors and chiropractic consultants for conformance with standards and requirements and advise the department of instances where standards and requirements have not been met.

The department shall review the advice and recommendations of the committee and shall promulgate those standards and requirements which it chooses to adopt. The department shall review the advice from the committee on the performance of chiropractors and shall act upon this advice at its sole discretion.

(4) The committee will meet on a monthly basis or as needed. The department will reimburse members of the committee for travel and incidental expenses related to the meetings.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 88-24-011 (Order 88-28), § 296-20-0100, filed 12/1/88, effective 1/1/89.]

WAC 296-20-01001 Medical advisory industrial insurance committee. (1) The Washington state medical association shall appoint an advisory and utilization review committee composed of nine members, one of whom shall be an osteopathic physician nominated by the Washington state osteopathic medical association. The remaining members should be selected from the following specialty groups: Family or general practice, orthopaedics, neurology or neurosurgery, general surgery, physical medicine and rehabilitation, psychiatry, internal medicine, and industrial medicine.

(2) The committee will function as an advisor to the department with respect to policies affecting medical care and rehabilitation, quality control and supervision of medical care, and the establishment of rules and regulations. It shall also advise and assist the department in the resolution of controversies, disputes and problems between the department and the providers of medical care. It will also advise and assist the department in the education of members of the medical community with regard to the roles of the physician, the department and the employer in providing the needs and care of the injured worker.

(3) The committee shall normally meet on a monthly basis or as necessity dictates. The department will reimburse members of the committee for each meeting.

[Order 77-27, § 296-20-01001, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-01001, filed 12/1/77; Emergency Order 77-16, § 296-20-01001, filed 9/6/77; Order 76-34, § 296-20-01001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-01002 Definitions. Termination of treatment: When treatment is no longer required and/or the industrial condition is stabilized, a report indicating the date of stabilization should be submitted to the department or self-insurer. This is necessary to initiate closure of the industrial claim. The patient may require continued treatment for conditions not related to the industrial condition; however, financial responsibility for such care must be the patient's.

Unusual or unlisted procedure: Value of unlisted services or procedures should be substantiated "by report" (BR).

"**By report**": BR (by report) in the value column of the fee schedules indicates that the value of this service is to be determined by report (BR) because the service is too unusual, variable or new to be assigned a unit value. The report shall provide an adequate definition or description of the services or procedures that explain why the services or procedures (e.g., operative, medical, radiological, laboratory, pathology, or other similar service report) are too unusual, variable, or complex to be assigned a relative value unit, using any of the following as indicated:

(1) Diagnosis;

(2) Size, location and number of lesion(s) or procedure(s) where appropriate;

(3) Surgical procedure(s) and supplementary procedure(s);

(4) Whenever possible, list the nearest similar procedure by number according to the fee schedules;

(5) Estimated follow-up;

(6) Operative time;

(7) Describe in detail any service rendered and billed using an "unlisted" procedure code.

The department or self-insurer may adjust BR procedures when such action is indicated.

"**Independent or separate procedure**": Certain of the fee schedule's listed procedures are commonly carried out as an integral part of a total service, and as such do not warrant a separate charge. When such a procedure is carried out as a separate entity, not immediately related to other services, the indicated value for "independent procedure" is applicable.

Chart notes: This type of documentation may also be referred to as "office" or "progress" notes. Providers must maintain charts and records in order to support and justify the services provided. "Chart" means a compendium of medical records on an individual patient. "Record" means dated reports supporting bills submitted to the department or self-insurer for medical services provided in an office, nursing facility, hospital, outpatient, emergency room, or other place of service. Records of service shall be entered in a chronological order by the practitioner who rendered the service. For reimbursement purposes, such records shall be legible, and shall include but are not limited to:

(1) Date(s) of service;

(2) Patient's name and date of birth;

(3) Claim number;

(4) Name and title of the person performing the service;

(5) Chief complaint or reason for each visit;

(6) Pertinent medical history;

(7) Pertinent findings on examination;

(8) Medications and/or equipment/supplies prescribed or provided;

(9) Description of treatment (when applicable);

(10) Recommendations for additional treatments, procedures, or consultations;

(11) X-rays, tests, and results; and

(12) Plan of treatment/care/outcome.

Attending doctor report: This type of report may also be referred to as a "60 day" or "special" report. The following information must be included in this type of report. Also, additional information may be requested by the department as needed.

(1) The condition(s) diagnosed including ICD-9-CM codes and the objective and subjective findings.

(2) Their relationship, if any, to the industrial injury or exposure.

(3) Outline of proposed treatment program, its length, components, and expected prognosis including an estimate of when treatment should be concluded and condition(s) stable. An estimated return to work date should be included. The probability, if any, of permanent partial disability resulting from industrial conditions should be noted.

(4) If the worker has not returned to work, the attending doctor should indicate whether a vocational assessment will be necessary to evaluate the worker's ability to return to work and why.

(5) If the worker has not returned to work, a doctor's estimate of physical capacities should be included with the report. If further information regarding physical capacities is needed or required, a performance-based physical capacities evaluation can be requested. Performance-based physical capacities evaluations should be conducted by a licensed occupational therapist or a licensed physical therapist. Performance-based physical capacities evaluations may also be conducted by other qualified professionals who provided performance-based physical capacities evaluations to the department prior to May 20, 1987, and who have received written approval to continue supplying this service based on formal department review of their qualifications.

Consultation examination report: The following information must be included in this type of report. Additional information may be requested by the department as needed.

(1) A detailed history to establish:

(a) The type and severity of the industrial injury or occupational disease.

(b) The patient's previous physical and mental health.

(c) Any social and emotional factors which may effect recovery.

(2) A comparison history between history provided by attending doctor and injured worker, must be provided with exam.

(3) A detailed physical examination concerning all systems affected by the industrial accident.

(4) A general physical examination sufficient to demonstrate any preexisting impairments of function or concurrent condition.

(5) A complete diagnosis of all pathological conditions including ICD-9-CM codes found to be listed:

(a) Due solely to injury.

(b) Preexisting condition aggravated by the injury and the extent of aggravation.

(c) Other medical conditions neither related to nor aggravated by the injury but which may retard recovery.

(d) Coexisting disease (arthritis, congenital deformities, heart disease, etc.).

(6) Conclusions must include:

(a) Type treatment recommended for each pathological condition and the probable duration of treatment.

(b) Expected degree of recovery from the industrial condition.

(c) Probability, if any, of permanent disability resulting from the industrial condition.

(d) Probability of returning to work.

(7) Reports of necessary, reasonable x-ray and laboratory studies to establish or confirm the diagnosis when indicated.

Bundled codes: When a bundled code is covered, payment for them is subsumed by the payment for the codes or services to which they are incident. (An example is a telephone call from a hospital nurse regarding care of a patient. This service is not separately payable because it is included in the payment for other services such as hospital visits.) Bundled codes and services are identified in the fee schedules.

Fee schedules or maximum fee schedule(s): The fee schedules consist of, but are not limited to the following:

(a) Health Care Financing Administration's Common Procedure Coding System Level I and II Codes, descriptions

and modifiers that describe medical and other services, supplies and materials.

(b) Codes, descriptions and modifiers developed by the department.

(c) Relative value units (RVUs), calculated or assigned dollar values, percent-of-allowed-charges (POAC), or diagnostic related groups (DRGs), that set the maximum allowable fee for services rendered.

(d) Billing instructions or policies relating to the submission of bills by providers and the payment of bills by the department or self-insurer.

Medical aid rules: The Washington Administrative Codes (WACs) that contain the administrative rules for medical and other services rendered to workers.

Modified work status: The worker is not able to return to their previous work, but is physically capable of carrying out work of a lighter nature. Workers should be urged to return to modified work as soon as reasonable as such work is frequently beneficial for body conditioning and regaining self confidence.

Under RCW 51.32.090, when the employer has modified work available for the worker, the employer must furnish the doctor and the worker with a statement describing the available work in terms that will enable the doctor to relate the physical activities of the job to the worker's physical limitations and capabilities. The doctor shall then determine whether the worker is physically able to perform the work described. The employer may not increase the physical requirements of the job without requesting the opinion of the doctor as to the worker's ability to perform such additional work. If after a trial period of reemployment the worker is unable to continue with such work, the worker's time loss compensation will be resumed upon certification by the attending doctor.

If the employer has no modified work available, the department should be notified immediately, so vocational assessment can be conducted to determine whether the worker will require assistance in returning to work.

Regular work status: The injured worker is physically capable of returning to his/her regular work. It is the duty of the attending doctor to notify the worker and the department or self-insurer, as the case may be, of the specific date of release to return to regular work. Compensation will be terminated on the release date. Further treatment can be allowed as requested by the attending doctor if the condition is not stationary and such treatment is needed and otherwise in order.

Total temporary disability: Full-time loss compensation will be paid when the worker is unable to return to any type of reasonably continuous gainful employment as a direct result of an accepted industrial injury or exposure.

Temporary partial disability: Partial time loss compensation may be paid when the worker can return to work on a limited basis or return to lesser paying job is necessitated by the accepted injury or condition. The worker must have a reduction in wages of more than five percent before consideration of partial time loss can be made. No partial time loss compensation can be paid after the worker's condition is stationary.

All time loss compensation must be certified by the attending doctor based on objective findings.

Permanent partial disability: Any anatomic or functional abnormality or loss after maximum rehabilitation has been achieved, which is determined to be stable or nonprogressive at the time the evaluation is made. When the attending doctor has reason to believe a permanent impairment exists, the department or self-insurer should be notified. Specified disabilities (amputation or loss of function of extremities, loss of hearing or vision) are to be rated utilizing a nationally recognized impairment rating guide. Unspecified disabilities (internal injuries, spinal injuries, mental health, etc.) are to be rated utilizing the category system detailed under WAC 296-20-200 et al. for injuries occurring on or after October 1, 1974. **Under Washington law disability awards are based solely on physical or mental impairment due to the accepted injury or conditions without consideration of economic factors.**

Total permanent disability: Loss of both legs or arms, or one leg and one arm, total loss of eyesight, paralysis or other condition permanently incapacitating the worker from performing any work at any gainful employment. When the attending doctor feels a worker may be totally and permanently disabled, the attending doctor should communicate this information immediately to the department or self-insurer. A vocational evaluation and an independent rating of disability may be arranged by the department prior to a determination as to total permanent disability. Coverage for treatment does not usually continue after the date an injured worker is placed on pension.

Fatal: When the attending doctor has reason to believe a worker has died as a result of an industrial injury or exposure, the doctor should notify the nearest department service location or the self-insurer immediately. Often an autopsy is required by the department or self-insurer. If so, it will be authorized by the service location manager or the self-insurer. Benefits payable include burial stipend and monthly payments to the surviving spouse and/or dependents.

Doctor: For these rules, means a person licensed to practice one or more of the following professions: Medicine and surgery; osteopathic medicine and surgery; chiropractic; naturopathic physician; podiatry; dentistry; optometry.

Only those persons so licensed may sign report of accident forms and time loss cards except as provided in chapter 296-20 WAC.

Health services provider or provider: For these rules means any person, firm, corporation, partnership, association, agency, institution, or other legal entity providing any kind of services related to the treatment of an industrially injured worker. It includes, but is not limited to, hospitals, medical doctors, dentists, chiropractors, vocational rehabilitation counselors, osteopathic physicians, pharmacists, podiatrists, physical therapists, occupational therapists, massage therapists, psychologists, naturopathic physicians, and durable medical equipment dealers.

Practitioner: For these rules, means any person defined as a "doctor" under these rules, or licensed to practice one or more of the following professions: Audiology; physical therapy; occupational therapy; pharmacy; prosthetics; orthotics; psychology; nursing; physician or osteopathic assistant; and massage therapy.

Physician: For these rules, means any person licensed to perform one or more of the following professions: Medicine and surgery; or osteopathic medicine and surgery.

Acceptance, accepted condition: Determination by a qualified representative of the department or self-insurer that reimbursement for the diagnosis and curative or rehabilitative treatment of a claimant's medical condition is the responsibility of the department or self-insurer. The condition being accepted must be specified by one or more diagnosis codes from the current edition of the International Classification of Diseases, Clinically Modified (ICD-CM).

Authorization: Notification by a qualified representative of the department or self-insurer that specific medically necessary treatment, services, or equipment provided for the diagnosis and curative or rehabilitative treatment of an accepted condition will be reimbursed by the department or self-insurer.

Medically necessary: Those health services are medically necessary which, in the opinion of the director or his or her designee, are:

(a) Proper and necessary for the diagnosis and curative or rehabilitative treatment of an accepted condition; and

(b) Reflective of accepted standards of good practice within the scope of the provider's license or certification; and

(c) Not delivered primarily for the convenience of the claimant, the claimant's attending doctor, or any other provider; and

(d) Provided at the least cost and in the least intensive setting of care consistent with the other provisions of this definition.

In no case shall services which are inappropriate to the accepted condition or which present hazards in excess of the expected medical benefits be considered medically necessary. Services which are controversial, obsolete, experimental, or investigational are presumed not to be medically necessary, and shall be authorized only as provided in WAC 296-20-03002(6).

Utilization review: The assessment of a claimant's medical care to assure that it is medically necessary and of good quality. This assessment typically considers the appropriateness of the place of care, level of care, and the duration, frequency or quantity of services provided in relation to the accepted condition being treated.

Emergent hospital admission: Placement of the worker in an acute care hospital for treatment of a work related medical condition of an unforeseen or rapidly progressing nature which if not treated in an inpatient setting, is likely to jeopardize the worker's health or treatment outcome.

Nonemergent (elective) hospital admission: Placement of the worker in an acute care hospital for medical treatment of an accepted condition which may be safely scheduled in advance without jeopardizing the worker's health or treatment outcome.

Attendant care: Those personal care services that assist a worker with dressing, feeding, and personal hygiene to facilitate self-care and are provided in order to maintain the worker in their place of temporary or permanent residence consistent with their needs, abilities, and safety. These services may be provided by but are not limited to, registered nurses, licensed practical nurses, registered nursing assistants, and other individuals such as family members.

Home nursing: Those nursing services that are medically necessary to maintain the worker in their place of temporary or permanent residence consistent with their needs, abilities, and safety. These services may be provided by but are not limited to, home health care, and hospice agencies on either an hourly or intermittent basis.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-01002, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-20-01002, filed 12/1/92, effective 1/1/93; 92-05-041, § 296-20-01002, filed 2/13/92, effective 3/15/92. Statutory Authority: RCW 51.04.020. 90-14-009, § 296-20-01002, filed 6/25/90, effective 8/1/90. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-01002, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-20-01002, filed 11/30/87, effective 1/1/88; 86-20-074 (Order 86-36), § 296-20-01002, filed 10/1/86, effective 11/1/86; 83-24-016 (Order 83-35), § 296-20-01002, filed 11/30/83, effective 1/1/84; 83-16-066 (Order 83-23), § 296-20-01002, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-01002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-01002, filed 12/23/80, effective 3/1/81.]

WAC 296-20-015 Who may treat. (1) In order to treat workers under the Industrial Insurance Act, a health care provider must qualify as an approved provider under the department's rules. The department must approve the health care provider through the issuance of a provider number before the health care provider is eligible for payment for services.

(2) Para-professionals, who are not independently licensed, must practice under the direct supervision of a licensed health care professional whose scope of practice and specialty training includes the service provided by the para-professional. The department may deny direct reimbursement to the para-professional for services rendered, and may instead directly reimburse the licensed and supervising health care professional for covered services. Payment rules for para-professionals may be determined by department policy.

(3) Procedures and evaluations requiring specialized skills and knowledge will be limited to board certified or board qualified physicians, or osteopathic physicians as specified by the American Medical Association or the American Osteopathic Association.

(4) The department as a trustee of the medical aid fund has a duty to supervise provision of proper and necessary medical care that is delivered promptly, efficiently, and economically. The department can deny, revoke, suspend, limit, or impose conditions on a health care provider's authorization to treat workers under the Industrial Insurance Act. Reasons for denying issuance of a provider number or imposing any of the above restrictions include, but are not limited to the following:

(a) Incompetence or negligence, which results in injury to a worker or which creates an unreasonable risk that a worker may be harmed.

(b) The possession, use, prescription for use, or distribution of controlled substances, legend drugs, or addictive, habituating, or dependency-inducing substances in any way other than for therapeutic purposes.

(c) Any temporary or permanent probation, suspension, revocation, or type of limitation of a practitioner's license to practice by any court, board, or administrative agency.

(d) The commission of any act involving moral turpitude, dishonesty, or corruption relating to the practice of the provider's profession. The act need not constitute a crime. If a conviction or finding of such an act is reached by a court or other tribunal pursuant to plea, hearing, or trial, a

certified copy of the conviction or finding is conclusive evidence of the violation.

(e) The failure to comply with the department's orders, rules, or policies.

(f) The failure, neglect, or refusal to:

(i) Provide records requested by the department pursuant to a health care services review or an audit.

(ii) Submit complete, adequate, and detailed reports or additional reports requested or required by the department regarding the treatment and condition of a worker.

(g) The submission or collusion in the submission of false or misleading reports or bills to any government agency.

(h) Billing a worker for:

(i) Treatment of an industrial condition for which the department has accepted responsibility; or

(ii) The difference between the amount paid by the department under the maximum allowable fee set forth in these rules and any other charge.

(i) Repeated failure to notify the department immediately and prior to burial in any death, where the cause of the death is not definitely known and possibly related to an industrial injury or occupational disease.

(j) Repeated failure to recognize emotional and social factors impeding recovery of a worker who is being treated under the Industrial Insurance Act.

(k) Repeated unreasonable refusal to comply with the recommendations of board certified or qualified specialists who have examined a worker.

(l) Repeated use of:

(i) Treatment of controversial or experimental nature;

(ii) Contraindicated or hazardous treatment; or

(iii) Treatment past stabilization of the industrial condition or after maximum curative improvement has been obtained.

(m) Declaration of mental incompetency by a court or other tribunal.

(n) Failure to comply with the applicable code of professional conduct or ethics.

(o) Failure to inform the department of any disciplinary action issued by order or formal letter taken against the provider's license to practice.

(p) The finding of any peer group review body of reason to take action against the provider's practice privileges.

(q) Misrepresentation or omission of any material information in the application for authorization to treat workers. (Chapter 51.04 RCW.)

(5) If the department finds reason to take corrective action, the department may also order one or more of the following:

(a) Recoupment of payments made to the provider, including interest; (Chapter 51.04 RCW.)

(b) Denial or reduction of payment;

(c) Assessment of penalties for each action that falls within the scope of subsection (4) (a) through (q) of this section; (Chapter 51.48 RCW.)

(d) Placement of the provider on a prepayment review status requiring the submission of supporting documents prior to payment;

(e) Requirement to satisfactorily complete remedial education courses and/or programs; and

(f) Imposition of other appropriate restrictions or conditions on the provider's privilege to be reimbursed for treating workers under the Industrial Insurance Act.

(6) The department shall forward a copy of any corrective action taken against a provider to the applicable disciplinary authority.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-015, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-015, filed 2/2/90, effective 3/5/90; 86-20-074 (Order 86-36), § 296-20-015, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-015, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-015, filed 11/24/76; effective 1/1/77; Order 74-4, § 296-20-015, filed 1/30/74; Order 71-6, § 296-20-015, filed 6/1/71; Order 70-12, § 296-20-015, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-015, filed 11/27/68, effective 1/1/69.]

WAC 296-20-01501 Physician's assistant rules. (1) Physicians' assistants may perform only those medical services in industrial injury cases, for which the physician's assistant is trained and licensed, under the control and supervision of a licensed physician. Such control and supervision shall not be construed to require the personal presence of the supervising physician.

(2) Physicians' assistants may perform those medical services which are within the scope of their physician's assistant license for industrial injury cases within the limitations of subsection (3) of this section.

(3) Advance approval must be obtained from the department to treat industrial injury cases. To be eligible to treat industrial injuries, the physician's assistant must:

(a) Provide the department with a copy of his/her license.

(b) Provide the name and address and specialty of the supervising physician.

(c) Provide the department with the evidence of a reliable and rapid system of communication with the supervising physician.

(4) Physicians' assistants may prepare report of accident, time loss cards, and progress reports for the supervising physician's signature. Physicians' assistants cannot submit such information under his/her signature.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-01501, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-01501, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-01501, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-01501, filed 11/30/79, effective 1/1/80.]

WAC 296-20-01505 Provider types and services not covered. The department will not pay for services performed by the following practitioners:

Acupuncturists
Herbalists
Christian Science practitioners or theological healers
Homeopathists
Noncertified physician assistants
Operating room technicians
Certified surgical technicians
Certified surgical assistants

Any other licensed or unlicensed practitioners not otherwise specifically provided for by the department.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-14-044, § 296-20-01505, filed 6/29/94, effective 7/30/94.]

WAC 296-20-020 Acceptance of rules and fees. The filing of an accident report or the rendering of treatment to a worker who comes under the department's or self-insurer's jurisdiction, as the case may be, constitutes acceptance of the department's medical aid rules and compliance with its rules and fees.

In accordance with RCW 51.28.020 of the industrial insurance law, when a doctor renders treatment to a worker entitled to benefits under the law, "it shall be the duty of the physician to inform the worker of his rights under this title and to lend all necessary assistance in making the application for compensation and such proof of other matters as required by the rules of the department without charge to the worker," a worker shall not be billed for treatment rendered for his accepted industrial injury or occupational disease.

The department or self-insurer must be notified immediately, when an unrelated condition is being treated concurrently with an industrial injury. See WAC 296-20-055 for specific information required.

When there is questionable eligibility, (i.e., service is not usually allowed for industrial injuries or investigation is pending, etc.) the provider may require the worker to pay for the treatment rendered.

In cases of questionable eligibility where the provider has billed the worker or other insurance, and the claim is subsequently allowed, the provider shall refund the worker or insurer in full and bill the department or self-insurer for services rendered using billing instructions, codes, and policies as listed in the medical aid rules and fee schedules.

Cases in which there is a question of medical ethics or quality of medical care, will be referred to the Washington state medical association's medical advisory and utilization review committee to the department of labor and industries for recommendations.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-020, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-020, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-020, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-020, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-020, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-020, filed 11/22/74, effective 1/1/75; Order 71-6, § 296-20-020, filed 6/1/71; Order 70-12, § 296-20-020, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-020, filed 11/27/68, effective 1/1/69.]

WAC 296-20-02001 Penalties. The department has the right to assess penalties against providers. See chapter 51.48 RCW.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-02001, filed 2/2/90, effective 3/5/90. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-02001, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-02001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-02005 Keeping of records. A health services provider who requests from the department payment for providing services shall maintain all records necessary for the director's authorized auditors to audit the provision of services. A provider shall keep all records necessary to disclose the extent of services the provider furnishes to industrially injured workers. At a minimum, these records must provide and include prompt and specific documentation of the level and type of service for which payment is sought. Records must be maintained for audit purposes for a minimum of five years.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-02005, filed 10/1/86, effective 11/1/86.]

WAC 296-20-02010 Review of health services providers. (1) The department may review providers' patient and billing related records to ensure workers are receiving proper and necessary medical care and to ensure providers' compliance with the department's medical aid rules, fee schedules, and policies. A records review may be the basis for corrective action against the provider.

(2) The department may review records before, during, or after delivery of health services. Records reviews may be for cause or at random and may include the utilization of statistical sampling methodologies and projections based upon sample findings. Records reviews may be conducted at or away from the provider's places of business, at the department's discretion.

(3) The department will give ten working days' written notification to any provider, except as authorized in WAC 296-18A-460, that the provider's patient and billing related records will be reviewed by an auditor at the provider's place(s) of business to determine compliance with medical aid rules and standards.

(4) The department may request legible copies of providers' records. Providers shall furnish copies of the requested records within thirty calendar days of receipt of the request.

(5) The department will not remove original records from provider's premises.

(6) For information regarding the formal appeals process refer to chapter 51.52 RCW.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-02010, filed 2/2/90, effective 3/5/90; 86-20-074 (Order 86-36), § 296-20-02010, filed 10/1/86, effective 11/1/86.]

WAC 296-20-02015 Interest on excess payments. (1) When a provider of health services receives a payment to which that provider is not entitled, the provider must repay the excess payment, plus accrued interest, without regard to whether the excess payment occurred due to provider or department error or oversight, except as provided in subsection (2) of this section.

(2) When a provider:

(a) Accepts in good faith a determination by the department that a worker is eligible for benefits under Title 51 RCW;

(b) Provides, bills, and receives payment for services to that worker and the department later determines that the worker was ineligible for services during that period no interest will begin to accrue until notification is received by the provider that the worker was ineligible.

(3) Interest accrues on excess payments at the rate of one percent per month or portion of a month beginning on the thirty-first day after payment was made. Where partial repayment of an excess payment is made, interest accrues on the remaining balance.

(4) The department reserves the option of either requesting the provider to remit the amount of the excess payment and accrued interest to the department or offsetting excess payments and accrued interest against future payments due to the provider.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-02015, filed 10/1/86, effective 11/1/86.]

WAC 296-20-022 Payment of out-of-state providers. (1) Beginning February 1, 1987, providers of health services in the bordering states of Oregon and Idaho shall bill and be paid according to the medical aid rules of the state of Washington.

(2) Providers of health services in other states and other countries shall be paid at rates which take into account:

(a) Payment levels allowed under the state of Washington medical aid rules;

(b) Payment levels allowed under workers compensation programs in the provider's place of business; and

(c) The usual, customary, and reasonable charges in the provider's state of business.

(3) In all cases these payment levels are the maximum allowed to providers of health services to workers. Should a health services provider's charge exceed the payment amount allowed under the state of Washington medical aid rules, the provider is prohibited from charging the injured worker for the difference between the provider's charge and the allowable rate. Providers violating this provision are ineligible to treat injured workers as provided by WAC 296-20-015 and are subject to other applicable penalties.

(4) Only those diagnostic and treatment services authorized under the state of Washington medical aid rules may be allowed by the department or self-insurer. As determined by the department of labor and industries, the scope of practice of providers in bordering states may be recognized for payment purposes, except that in all cases WAC 296-20-03002 (Treatment not authorized) shall apply. Specifically, services permitted under workers compensation programs in the provider's state or country of business, but which are not allowed under the medical aid rules of the state of Washington, may not be reimbursed. When in doubt, the provider should verify coverage of a service with the department or self-insurer.

(5) Out-of-state hospitals will be paid according to WAC 296-23A-165.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-022, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-20-022, filed 11/30/87, effective 1/1/88; 87-03-004 (Order 86-45), § 296-20-022, filed 1/8/87.]

WAC 296-20-023 Third party settlement—Excess recoveries. (1) In cases where a third party settlement has been made resulting in an excess recovery subject to offset from the worker's future benefits or compensation due, the department or self-insurer is not liable for payment for services rendered by providers.

(2) The worker should be treated and billed in accordance with the department's medical aid rules and maximum fee schedules. When bills are processed against the amount of the excess recovery, the department will notify the provider on the remittance advice.

(3) The department or self-insurer will resume financial responsibility to or on behalf of the worker when the amount of such excess has been reduced to zero.

[Statutory Authority: Chapters 51.04, 51.08, 51.12, 51.24 and 51.32 RCW and 117 Wn.2d 122 and 121 Wn.2d 304. 93-23-060, § 296-20-023, filed 11/15/93, effective 1/1/94. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-023, filed 2/28/86, effective 4/1/86.]

WAC 296-20-024 Utilization management. The department, as a trustee of the medical aid fund, has a duty to supervise the provision of proper and necessary medical care that is delivered promptly, efficiently, and economically. Toward this end, the department will institute programs of utilization management. These programs are designed to monitor and control the proper and necessary use and cost of, health care services. These programs include, but are not limited to, managed care contracting, prior authorization for services, and alternative reimbursement systems.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-024, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-20-024, filed 11/30/87, effective 1/1/88.]

WAC 296-20-025 Initial treatment and report of accident. It is the responsibility of the worker to notify the practitioner when the worker has reason to believe his injury or condition is industrial in nature. Conversely, if the attending doctor discovers a condition which he believes to be work related or has reason to believe an injury is work related, he must so notify the worker. Once such determination is made by either the claimant or the attending doctor, a report of accident must be filed.

Failure to comply with this responsibility can result in penalties as outlined in WAC 296-20-02001.

It is the practitioner's responsibility to ascertain whether he is the first attending practitioner. If so, he will take the following action:

(1) Give emergency treatment.

(2) Immediately complete and forward the report of accident, to the department and the employer or self-insurer. Instruct and give assistance to the injured worker in completing his portion of the report of accident. In filing a claim, the following information is necessary so there is no delay in adjudication of the claim or payment of compensation.

(a) Complete history of the industrial accident or exposure.

(b) Complete listing of positive physical findings.

(c) Specific diagnosis with ICD-9-CM code(s) and narrative definition relating to the injury.

(d) Type of treatment rendered.

(e) Known medical, emotional or social conditions which may influence recovery or cause complications.

(f) Estimate time loss due to the injury.

(3) If the patient remains under his care continue with necessary treatment in accordance with medical aid rules. If the practitioner is *not* the original attending doctor, he should question the injured worker to determine whether a report of accident has been filed for the injury or condition. If no report of accident has been filed, it should be completed immediately and forwarded to the department or self-insurer, as the case may be, with information as to the name and

address of original practitioner if known, so that he/she may be contacted for information if necessary.

If a report of accident has been filed, it is necessary to have the worker complete a request for transfer as outlined in WAC 296-20-065, if the worker and practitioner agree that a change in attending doctor is desirable.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-025, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-025, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-025, filed 6/1/71; Order 70-12, § 296-20-025, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-025, filed 11/27/68, effective 1/1/69.]

WAC 296-20-030 Treatment not requiring authorization for accepted conditions. (1) A maximum of twenty office calls for the treatment of the industrial condition, during the first sixty days, following injury. Subsequent office calls must be authorized. Reports of treatment rendered must be filed at sixty day intervals to include number of office visits to date. See chapter 296-20 WAC and department policies for report requirements and further information.

(2) Initial diagnostic x-rays necessary for evaluation and treatment of the industrial injury or condition. See WAC 296-20-121 for further information.

(3) The first twelve physical therapy treatments as provided by chapters 296-21, 296-23, and 296-23A WAC, upon consultation by the attending doctor or under his direct supervision. Additional physical therapy treatment must be authorized and the request substantiated by evidence of improvement. In no case will the department or self-insurer pay for inpatient hospitalization of a claimant to receive physical therapy treatment only. USE OF DIAPULSE, THERMATIC (standard model only), SPECTROWAVE AND SUPERPULSE MACHINES AND IONTOPHORESIS IS NOT AUTHORIZED FOR WORKERS ENTITLED TO BENEFITS UNDER THE INDUSTRIAL INSURANCE ACT.

(4) Routine laboratory studies reasonably necessary for diagnosis and/or treatment of the industrial condition. Other special laboratory studies require authorization.

(5) Routine standard treatment measures rendered on an emergency basis or in connection with minor injuries not otherwise requiring authorization.

(6) Consultation with specialist when indicated. See WAC 296-20-051 for consultation guidelines.

(7) Nonscheduled drugs and medications during the acute phase of treatment for the industrial injury or condition.

(8) Scheduled drugs and other medications known to be addictive, habit forming or dependency inducing may be prescribed in quantities sufficient for treatment for a maximum of twenty-one days. If drug therapy extends beyond thirty days, see WAC 296-20-03003 regarding management.

(9) Injectable scheduled and other drugs known to be addictive, habit forming, or dependency inducing may be provided only on an in-patient basis. Hospital admission for administration of drugs for relief of chronic pain only will not be allowed.

(10) Diagnostic or therapeutic nerve blocks. See WAC 296-20-03001 for restrictions.

(11) Intra-articular injections. See WAC 296-20-03001 for restrictions.

(12) Myelogram if prior to emergency surgery.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-030, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-030, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-030, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-030, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-030, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-030, filed 1/30/74; Order 71-6, § 296-20-030, filed 6/1/71; Order 70-12, § 296-20-030, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-030, filed 11/27/68, effective 1/1/69.]

WAC 296-20-03001 Treatment requiring authorization. Certain treatment procedures require authorization by the department or self-insurer. Requests for authorization must include a statement of: The condition(s) diagnosed; ICD-9-CM codes; their relationship, if any, to the industrial injury/exposure; an outline of the proposed treatment program, its length and components, procedure codes, and expected prognosis; and an estimate of when treatment would be concluded and condition stable.

(1) Office calls in excess of the first twenty visits or sixty days whichever occurs first.

(2) The department may designate those inpatient hospital admissions that require prior authorization.

(3) X-ray and radium therapy.

(4) Diagnostic studies other than routine x-ray and blood or urinalysis laboratory studies.

(5) Myelogram and discogram in nonemergent cases.

(6) Physical therapy treatment beyond initial twelve treatments as outlined in chapters 296-21, 296-23, and 296-23A WAC.

(7) Diagnostic or therapeutic injection. Epidural or caudal injection of substances other than anesthetic or contrast solution will be authorized under the following conditions only:

(a) When the worker has experienced acute low back pain or acute exacerbation of chronic low back pain of no more than six months duration.

(b) The worker will receive no more than three injections in an initial thirty-day treatment period, followed by a thirty-day evaluation period. If significant pain relief is demonstrated one additional series of three injections will be authorized. No more than six injections will be authorized per acute episode.

(8) Home nursing or convalescent center care must be authorized per provision outlined in WAC 296-20-091.

(9) Provision of prosthetics, orthotics, surgical appliances, special equipment for home or transportation vehicle; custom made shoes for ankle/foot injuries resulting in permanent deformity or malfunction of a foot; TNS units; masking devices; hearing aids; etc., must be authorized in advance as per WAC 296-20-1101 and 296-20-1102.

(10) Biofeedback program; pain clinic; weight loss program; psychotherapy; rehabilitation programs; and other programs designed to treat special problems must be authorized in advance. Refer to the department's medical aid rules and fee schedules for details.

(11) Prescription or injection of vitamins for specific therapeutic treatment of the industrial condition(s) when the attending doctor can demonstrate that published clinical studies indicate vitamin therapy is the treatment of choice for

the condition. Authorization for this treatment will require presentation of facts to and review by department medical consultant.

(12) Injections of anesthetic and/or anti-inflammatory agents into the vertebral facet joints will be authorized to qualified specialists in orthopedics, neurology, and anesthesia, or other physicians who can demonstrate expertise in the procedure, AND who can provide certification their hospital privileges include the procedure requested under the following conditions:

(a) Rationale for procedure, treatment plan, and request for authorization must be presented in writing to the department or self-insurer.

(b) Procedure must be performed in an accredited hospital under radiographic control.

(c) Not more than four facet injection procedures will be authorized in any one patient.

(13) The long term prescription of medication under the specific conditions and circumstances in (a) and (b) are considered corrective therapy rather than palliative treatment and approval in advance must be obtained.

(a) Nonsteroidal anti-inflammatory agents for the treatment of degenerative joint conditions aggravated by occupational injury.

(b) Anticonvulsive agents for the treatment of seizure disorders caused by trauma.

(14) Intra-muscular and trigger point injections of steroids and other nonscheduled medications are limited to three injections per patient. The attending doctor must submit justification for an additional three injections if indicated with a maximum of six injections to be authorized for any one patient.

(15) The department may designate those diagnostic and surgical procedures which can be performed in other than a hospital inpatient setting. Where a worker has a medical condition which necessitates a hospital admission, prior approval of the department or self-insurer must be obtained.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-03001, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-03001, filed 2/2/90, effective 3/5/90; 86-20-074 (Order 86-36), § 296-20-03001, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-03001, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-03001, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03001, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03001, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-03001, filed 11/30/79, effective 1/1/80; Order 76-34, § 296-20-03001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03002 Treatment not authorized. The department or self-insurer will not allow nor pay for following treatment:

(1) **Use of diapulse, thermatic (standard model only), spectrowave and superpulse machines on workers entitled to benefits under the Industrial Insurance Act.**

(2) Iontophoresis; prolotherapy; acupuncture; injections of colchicine; injections of fibrosing or sclerosing agents; and injections of substances other than anesthetic or contrast into the subarachnoid space (intra-thecal injections).

(3) Treatment to improve or maintain general health (i.e., prescriptions and/or injection of vitamins or referrals to special programs such as health spas, swim programs, exercise programs, athletic-fitness clubs, diet programs, social counseling).

(4) Continued treatment beyond stabilization of the industrial condition(s), i.e., maintenance care, except where necessary to monitor prescription of medication necessary to maintain stabilization i.e., anti-convulsive, anti-spasmodic, etc.

(5) After consultation and advice to the department or self-insurer, any treatment measure deemed to be dangerous or inappropriate for the injured worker in question.

(6) Treatment measures of an unusual, controversial, obsolete, or experimental nature (see WAC 296-20-045). Under certain conditions, treatment in this category may be approved by the department or self-insurer. Approval must be obtained prior to treatment. Requests must contain a description of the treatment, reason for the request with benefits and results expected.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-03002, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-03002, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03002, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-03002, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03003 Drugs and medication. (1) **General principles**. There has been a significant increase in the incidence of drug dependence in workers covered under the industrial insurance program of this state. The industrial insurance committee of the Washington state medical association has recommended that the medical aid rules should contain reasonable and appropriate guidelines for the prescription of controlled substances, psychotropics, and injectables with the intent to improve prescribing practices and the general level of medical care for claimants.

The physician's record should include the reason for the medication, the dosage and the amount prescribed. With repeated prescriptions, the record should make clear the plan and the need for continuing medication.

Because of the dangers inherent in prescriptions for large amounts of psychotropic drugs, the following rules will set forth guidelines for the prescription of psychotropic drugs and benzodiazepines.

(2) **Coverage**. Prescriptions are to be written only for injuries and diseases accepted under the claim.

(3) **Initial rx-all medication**. Initial prescription of medication shall be for quantities sufficient for twenty-one days or less. Refills shall be in accordance with the physician's treatment plan and the additional rules which follow.

(4) **OTC drugs over-the-counter**. Prescriptions for the over-the-counter items may be paid. Special compounding fees for over-the-counter items are not payable.

(5) **Pension cases**. The industrial insurance statute prohibits department or self-insurer payment for controlled substances for claimants on pension. Payment for other medications for pensioners is dependent upon a special order on the individual claim.

(6) **Controlled substances and other analgesics**. Prescriptions for controlled substances may not be for quantities for more than twenty-one days. Refills of prescriptions for controlled substances will be contingent upon the

attending physician's reevaluation of the claimant. Directions should be on time contingent rather than a PRN basis.

Schedule II substances and other analgesics (including but not limited to Stadol, Nubaine, etc.), may be used to relieve pain during hospitalization and the acute stage of an injury or illness. The prescription of the above beyond reasonable recovery periods, or for chronic pain, pain behavior or suffering is prohibited. Injectable narcotics or analgesics are not permitted or paid in the outpatient setting except an emergency basis.

(7) **Methadone for narcotic maintenance or withdrawal**. Prescriptions for Methadone or "pain cocktails" containing Methadone for narcotic addiction, maintenance or detoxification are prohibited by Federal Public Law 93-281. Methadone for withdrawal purposes may be dispensed only by agencies licensed by the drug enforcement administration. Those agencies in the state of Washington are:

Veteran's Administration Hospital (Seattle);
Evergreen Treatment Center (Seattle);
Center for Addiction Services (Seattle);
Therapeutic Health Services (Seattle);
Tacoma Pierce County Health Service (Tacoma);
Mid-Columbia Mental Health (Pasco);
Central Washington Mental Health (Yakima); and
Youth Help Association (Spokane).

The department is required to notify the drug enforcement administration when Methadone is prescribed for detoxification purposes by persons other than agencies licensed by the drug enforcement administration.

(8) **Nonsteroidal anti-inflammatory agents**. Prescriptions for anti-inflammatory agents are exempt from the rule prohibiting palliative treatment. Nonsteroidal anti-inflammatory agents may be prescribed if high dose enteric coated aspirin trial is unsuccessful.

Prescriptions for ulcer medications such as H_2 blockers (Tagamet and Zantac) and ulcer adherent complexes (Carafate) written on a prophylactic basis in connection with prescriptions for analgesic, anti-inflammatory, and steroidal agents may be allowed when:

(a) Peptic ulcer disease has been documented; or

(b) Intensive treatment with steroidal agents is being utilized; or

(c) The physician certifies that prescription with meals or with an alternative NSAID (nonsteroidal anti-inflammatory drug) has failed to control the abdominal distress.

(9) **Sedatives**. Sedatives including but not limited to short acting barbiturates such as Seconal or Nembutal, and nonbarbiturate sedatives such as Noctec and Dalmane are prohibited and will not be paid during the chronic stage of any occupational injury or illness. Doriden (Glutethimide) and Quaalude (Methaqualone) are prohibited and will not be paid at any time.

(10) **Anticonvulsants for chronic pain**. Anticonvulsants including but not limited to Dilantin and Tegretol, may be prescribed on a trial basis for chronic pain if all of the precautions regarding their use are observed. Long-term prescription of anticonvulsants may be allowed if concurring opinion is obtained from a physician with special training in the pain field.

(11) **Psychotropics**. Because of the dangers inherent, prescriptions for psychotropic drugs such as Phenothiazines, butyrophenones, tri-or-quadricyclic antidepressants must be in compliance with published indications, contraindications, precautions, and warnings. Prescriptions should not exceed a lethal dose (for example maximum of one hundred 50 mg. tablets of Amitriptyline (Elavil)).

(12) **Benzodiazepies**. Prescriptions for Benzodiazepies including but not limited to Valium, Tranxene, Serax, Librium, etc., are limited to the following types of patients: Hospitalized patients, claimants with accepted psychiatric disorders, and to outpatients for not more than twenty-one days.

(13) **Rx for nonrelated**. The department or self-insurer may consider temporary coverage of conditions not related to the industrial injury when such conditions are retarding recovery. However, prescriptions for treatment of such conditions must have prior authorization per WAC 296-20-055.

(14) **Injectables**. Prescriptions for injectable narcotics, sedatives, analgesics, antihistamines, tranquilizers, psychotropics, vitamins, minerals, food supplements, and hormones (except Insulin and Heparin) are not covered. Such drugs may be administered for inpatients or during emergency treatment of a life-threatening condition/injury or during outpatient treatment of burns or fractures when needed for dressing or cast changes. They may not be administered for chronic pain. Prescriptions for syringes and needles are prohibited and will not be paid except for Insulin and Heparin.

(15) **Generic drugs**. Prescriptions are to be written for generic drugs only unless the patient cannot tolerate substitution. Pharmacists are instructed to fill with generic drugs unless the attending physician specifically indicates substitution is not permitted.

(16) **Provider number**. Prescriptions for department claims must include the department assigned provider account number of the prescribing physician and legible physician signature.

(17) The department realizes that management of chronic pain cases is most difficult subjecting the physician to extreme pressures. With this in mind, the following guidelines are suggested with the intent that they will help the doctor cope with the pressures and assist in the management of these difficult cases:

(a) Keep a drug summary on all claimants.

(b) Determine if pain complaints are consistent with the amount of injury.

(c) Write specific instructions for the use of sedatives and analgesics.

(d) Treat the natural depression in injured workers properly, avoiding tranquilizers, and sedatives which increase depression.

(e) Evaluate recovery time frequently, and allow patient to regain self-esteem by returning to work.

(f) If a patient is requiring these drugs in amounts sufficient to cause concern about habituation or addiction or for longer than sixty days, the attending physician should:

(i) Revise the treatment plan and withdraw the drugs.

(ii) If unable to treat addiction or habituation himself, refer the patient to a physician or an institution experienced in drug withdrawal.

(iii) If (i) and (ii) are not acceptable or appropriate, obtain unbiased concurring opinion, and justify an alternate

course in writing to the department of labor and industries or self-insurer and the Federal Drug Enforcement Administration.

(18) The department or self-insurer will inform the attending physician when it is concerned about the amount of these drugs the patient is receiving and will provide information regarding physicians and institutions experienced in drug withdrawal.

(19) As per RCW 51.36.010, when a worker is placed on pension the department cannot pay for Schedule I, II, III or IV substances.

(20) Physician failure to reduce or terminate prescription of controlled substances, habit forming or addicting medications, or dependency inducing medications, after department or self-insurer request to do so for an injured worker may result in a transfer of the worker to another physician of the worker's choice. Refusal of the worker to select another doctor can result in department or self-insurer selection of new attending doctor. (See WAC 296-20-065 regarding transfer.)

(21) Should the attending doctor or the injured worker refuse to comply with the department or self-insurer request to discontinue certain medications, the department or self-insurer, after providing adequate prior notice to the worker, doctor, and pharmacy/s involved, may discontinue payment for the medication.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-03003, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-03003, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03003, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03003, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-20-03003, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-03003, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03004 Chemonucleolysis. Chymopapain injections may be authorized in the treatment of lumbar disc disease under the following limitations and criteria:

(1) Only physicians (a) who routinely care for patients with herniated lumbar intervertebral discs, (b) who are qualified by training and experience to diagnose lumbar disc disease and to perform laminectomy, discectomy or other spinal procedures, (c) who have received specialized training in chemonucleolysis, may administer the procedure for industrial injured workers covered under state industrial insurance fund or self-insurance.

(2) Preadministration work-up shall include but is not limited to (a) a concurring opinion from a physician familiar with the procedure and qualified by training and experience to diagnose and treat lumbar disc disease, (b) diagnostic studies indicative of level of disc herniation i.e., myelogram, a high resolution CT scan, discogram, etc., (c) other diagnostic studies including sedimentation rate (anaphylaxis has occurred primarily in females with sedimentation rates in excess of 20 mm per hour) as indicated for the individual patient.

(3) Procedure will be authorized (a) one time only in the treatment life of any given patient, (b) maximum of two levels per patient (Generally only one level will be authorized. Indications for a second level are infrequent. However, authorization may be granted if diagnostic studies and/or concurring opinion so indicates.), (c) only for patients who have had no previous lumbar surgery at that level.

(4) Procedure must be carried out in hospital setting under radiographic or fluoroscopic control, with a permanent x-ray record maintained.

(5) **Prior authorization from the department or the self-insurer must be obtained before procedure is scheduled.**

(6) These rules were formulated based upon the recommendations of the Federal Food and Drug Administration, the drug manufacturer, and the industrial insurance committee of the Washington state medical association.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-20-03004, filed 8/2/83.]

WAC 296-20-03005 Inoculation or immunological treatment for exposure to infectious occupational disease. Authorization for inoculation or other immunological treatment for occupational disease shall be given only in cases in which a work related activity has resulted in probable exposure of the worker to a potential infectious occupational disease. In no case shall such inoculation or immunological treatment be authorized until such time as a work related activity has resulted in such probable exposure. Inoculation or other treatment required as a condition for employment or otherwise obtained prior to the worker's performing a work related activity resulting in probable exposure to an occupational disease shall not be authorized. For purposes of this section, probable exposure is an incident which gives rise to a clear and immediate likelihood of contracting an occupational disease process.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.36.010. 86-18-025 (Order 86-34), § 296-20-03005, filed 8/27/86, effective 11/1/86.]

WAC 296-20-035 Treatment in cases that remain open beyond sixty days. Conditions requiring treatment beyond sixty days are indicative of a major industrial condition or complication by other conditions. Except in cases of severe and extensive injuries, i.e., quadriplegia, paraplegia, multiple fractures, etc., when the worker requires treatment beyond sixty days following injury, a complete examination is necessary to determine and/or establish need for continued treatment and/or payment of time loss compensation. This may be accomplished either by the attending doctor or a consultation exam. In either case, a detailed exam report must be provided to the department or self-insurer. Refer to chapter 296-20 WAC (including the definition section) and department policy for the type of information that must be included in these reports.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-035, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.040.030 [51.04.030]. 87-08-004 (Order 87-09), § 296-20-035, filed 3/20/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-035, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-035, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-035, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-035, filed 6/1/71; Order 70-12, § 296-20-035, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-035, filed 11/27/68, effective 1/1/69.]

WAC 296-20-045 Consultation requirements. In the event of complication, controversy, or dispute over the treatment aspects of any claim, the department or self-insurer will not authorize treatment until the attending doctor has arranged a consultation with a qualified doctor with experience and expertise on the subject, and the department or self-insurer has received notification of the findings and recommendations of the consultant.

This consultation must be arranged in accordance with WAC 296-20-051.

Consultations are also required in the following situations:

(1) All nonemergent major surgery on a patient with serious medical, emotional or social problems which are likely to complicate recovery.

(2) All procedures of a controversial nature or type not in common use for the specific condition.

(3) Surgical cases where there are complications or unfavorable circumstances such as age, preexisting conditions or interference with occupational requirements, etc.

(4) If the attending doctor, the department, self-insurer, or authorized department representative requests a consultation.

(5) Conservative care, (e.g., nonsurgical cases) extending past one hundred twenty days following initial visit. Such consultation may be with a chiropractic or a medical or osteopathic consultant.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-045, filed 2/2/90, effective 3/5/90. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-045, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-045, filed 11/30/79, effective 1/1/80; Order 71-6, § 296-20-045, filed 6/1/71; Order 70-12, § 296-20-045, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-045, filed 11/27/68, effective 1/1/69.]

WAC 296-20-051 Consultations. In cases presenting diagnostic or therapeutic problems to the attending doctor, consultation with a specialist will be allowed without prior authorization. The consultant must submit his findings and recommendations immediately to the attending doctor and the department or self-insurer. Refer to chapter 296-20 WAC and department policy for reporting requirements.

Whenever possible, the referring doctor should make his x-rays and records available to the consultant to avoid unnecessary duplication. The department's consultation referral form may be used to convey information to the consultant. Consultants may proceed with indicated and reasonable x-rays or laboratory work and reasonable diagnostic studies as permitted within their scope of practice.

Consultations will be held with a specialist within a reasonable geographic area. Whenever possible, consultation should be made with a doctor outside the referring doctor's office or partnership.

The attending doctor will not arrange a consultation if he has received notification that a special or commission examination is being arranged by the department or self-insurer. If he has had recent consultation and is notified that the department or self-insurer is arranging an examination, he must immediately advise the department or self-insurer of the consultation.

The consultation fee will be paid only if a consultation report is complete and contains all pathological findings as well as all pertinent negative or normal findings. The report must be received in the department within fifteen days from the date of the consultation. No fee is paid to the consultant if the worker fails the appointment.

The consultant may not order, prescribe, or provide treatment without the approval of the attending doctor and the injured worker. No transfer will be made to the consultant without the prior approval of the attending doctor and the injured worker.

Consultation services will not be reimbursed for workers who are currently, or have been under the physician's care within the last three years. Such services should be billed as follow up visits, as listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-051, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-051, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-051, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-051, filed 6/1/71; Order 70-12, § 296-20-051, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-070.]

WAC 296-20-055 Limitation of treatment and temporary treatment of unrelated conditions when retarding recovery. Conditions preexisting the injury or occupational disease are not the responsibility of the department. When an unrelated condition is being treated concurrently with the industrial condition, the attending doctor must notify the department or self-insurer immediately and submit the following:

(1) Diagnosis and/or nature of unrelated condition.

(2) Treatment being rendered.

(3) The effect, if any, on industrial condition.

Temporary treatment of an unrelated condition may be allowed, upon prior approval by the department or self-insurer, provided these conditions directly retard recovery of the accepted condition. The department or self-insurer will not approve or pay for treatment for a known preexisting unrelated condition for which the claimant was receiving treatment prior to his industrial injury or occupational disease, which is not retarding recovery of his industrial condition.

A thorough explanation of how the unrelated condition is affecting the industrial condition must be included with the request for authorization.

The department or self-insurer will not pay for treatment of an unrelated condition when it no longer exerts any influence upon the accepted industrial condition. When treatment of an unrelated condition is being rendered, reports must be submitted monthly outlining the effect of treatment on both the unrelated and the accepted industrial conditions.

The department or self-insurer will not pay for treatment for unrelated conditions unless specifically authorized. This includes prescription of drugs and medicines.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-055, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-055, filed 6/1/71; Order 70-12, § 296-20-055, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-055, filed 11/27/68, effective 1/1/69.]

WAC 296-20-06101 Reporting requirements. The department or self-insurer requires several kinds of reports at various stages of the claim in order to authorize treatment, time loss compensation, and treatment bills. For additional information refer to the medical aid rules and fee schedules.

Initial report of accident: The first report required is the report of accident. The report of accident qualifies as the office note or report of the initial visit for Level 1 or 2 office calls. In addition to the office call charge, the doctor may bill for the filing of the accident report. Reimbursement of these services will be paid if the claim is allowed by the department or self-insurer. If the initial visit is a transfer case, a report is required. Billing for a Level 3, 4, or 5 initial visit may require submission of additional reports as required by department policy.

Office notes: Legible copies of office or progress notes are required for all follow-up visits. Office notes are not acceptable in lieu of requested narrative reports.

Sixty-day narrative reports: When conservative treatment is to continue beyond sixty days, submission of a narrative report is required to substantiate the need for continued care. A narrative report must contain basic information contained in chapter 296-20 WAC, or as determined by department policy. For this narrative report, the department or self-insurer will pay at a rate determined by department policy for a routine report in addition to a routine office call if the call is needed to provide the information. If the doctor supplies additional comprehensive information in the report, payment of a charge submitted in excess of the allowed fee will be considered. In most cases, payment for a narrative report in addition to a Level 3, 4, or 5 office visit will not be considered as the fee for those services includes a comprehensive report. A narrative report should be described as a "sixty-day report."

Consultations reports: Following one hundred twenty days of conservative care (nonsurgical cases), a consultation with the doctor of the attending doctor's choice is required to substantiate further treatment authorization. No prior authorization is required for such consultations. The department or self-insurer should be notified via a consultation referral form (LI-210-299). The consultant is responsible for submitting a copy of the report as outlined in chapter 296-20 WAC, or as determined by department policy, along with the bill to the department or self-insurer.

Follow-up reports: Following the one-hundred twenty day consultation, narrative reports are required at sixty-day intervals as outlined in chapter 296-20 WAC. The department or self-insurer will request additional consultations and/or special exams as warranted by the individual case.

Hospital reports: When workers are hospitalized it is the responsibility of the doctor to submit the reports to the hospital for submission with the hospital billing. The doctor may bill for hospital visits without attaching copies of the reports. However, billing for operative procedures requires a copy of the operative report.

Reopening application: On claims closed over sixty days, the department or self-insurer will pay for completion of a reopening application, an office visit and diagnostic studies necessary to complete the application. (See chapter 296-20 WAC.) **No other benefits will be paid until the adjudication decision is rendered.**

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-06101, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-06101, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-06101, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-06101, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-20-06101, filed 11/22/74, effective 1/1/75.]

WAC 296-20-065 Transfer of doctors. All transfers from one doctor to another must be approved by the department or self-insurer. Normally transfers will be allowed only after the worker has been under the care of the attending doctor for sufficient time for the doctor to: Complete necessary diagnostic studies, establish an appropriate treatment regimen, and evaluate the efficacy of the therapeutic program.

Under RCW 51.36.010 the worker is entitled to free choice of treating doctor. Except as provided under subsections (1) through (7) of this section, no reasonable request for transfer will be denied. The worker must be advised when and why a transfer is denied.

When a transfer is approved, the new attending doctor must be provided with a copy of the worker's treatment record by the previous attending doctor. X-rays in the possession of the previous attending doctor must be immediately forwarded to the new attending doctor for his or her retention as long as the worker remains under his or her care. Copies of x-rays and other records may be provided in lieu of originals.

The department or self-insurer reserves the right to require a worker to select another doctor or specialist for treatment, under the following conditions:

(1) When more conveniently located doctors, qualified to provide the necessary treatment, are available.

(2) When the attending doctor fails to cooperate in observance and compliance with the department rules.

(3) In time loss cases where reasonable progress towards return to work is not shown.

(4) Cases requiring specialized treatment, which the attending doctor is not qualified to render, or is outside the scope of the attending doctor's license to practice.

(5) Where the department or self-insurer finds a transfer of doctor to be appropriate and has requested the worker to transfer in accordance with this rule, the department or self-insurer may select a new attending doctor if the worker unreasonably refuses or delays in selecting another attending doctor.

(6) In cases where the attending doctor is not qualified to treat each of several accepted conditions. This does not preclude concurrent care where indicated. See WAC 296-20-071.

(7) No transfer will be approved to a consultant or special examiner without the approval of the attending doctor and the worker.

Transfers will be authorized for the foregoing reasons or where the department or self-insurer in its discretion finds that a transfer is in the best interest of returning the worker to a productive role in society.

When a worker's care is transferred to another doctor each doctor must submit a separate bill to the department or self-insurer for their portion of the care. Payment will be made at rates determined by department policy.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-065, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-065, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-065, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-20-065, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-065, filed 12/1/77; Emergency Order 77-16, § 296-20-065, filed 9/6/77; Order 75-39, § 296-20-065, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-065, filed 1/30/74; Order 71-6, § 296-20-065, filed 6/1/71; Order 70-12, § 296-20-065, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-065, filed 11/27/68, effective 1/1/69.]

WAC 296-20-071 Concurrent treatment. In some cases, treatment by more than one practitioner may be allowed. The department or self-insurer will consider concurrent treatment when the accepted conditions resulting from the injury involve more than one system and/or require specialty or multidisciplinary care.

When requesting consideration for concurrent treatment, the attending doctor must provide the department or self-insurer with the following:

The name, address, discipline, and specialty of all other practitioners assisting in the treatment of the injured worker and an outline of their responsibility in the case and an estimate of the length of the period of concurrent care.

When concurrent treatment is allowed, the department or self-insurer will recognize one primary attending doctor, who will be responsible for prescribing all medications; directing the over-all treatment program; providing copies of all reports and other data received from the involved practitioners and, in time loss cases, providing adequate certification evidence of the worker's inability to work.

The department or self-insurer will approve concurrent care on a case-by-case basis. Consideration will be given to all factors in the case including availability of providers in the worker's geographic location.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-071, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-071, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-20-071, filed 11/28/75, effective 1/1/76; Order 70-12, § 296-20-071, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-060.]

WAC 296-20-075 Hospitalization. (1) Hospitalization will be paid for proper and necessary medical treatment of the accepted condition(s). The department may develop and implement utilization management criteria which will be used to review inpatient hospital admissions. Reimbursement for hospitalization is limited to proper and necessary care for an accepted condition. Failure to comply with these criteria may result in delayed or reduced reimbursement to the provider as allowed under chapter 51.48 RCW. Ward or semi-private accommodations will be paid, unless the worker's condition requires special care.

(2) Discharge from the hospital shall be at the earliest date possible consistent with proper health care. If transfer to a convalescent center or nursing home is indicated, prior arrangements should be made with the department or self-insurer. See WAC 296-20-091 for further information. The department may designate those diagnostic and surgical procedures which will be reimbursed only if performed in an outpatient setting. When procedures so designated must be performed in an inpatient setting for reasons of medical necessity, prior authorization must be obtained.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-20-075, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-20-075, filed 11/30/87, effective 1/1/88; 86-20-074 (Order 86-36), § 296-20-075, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-075, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-075, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-075, filed 6/1/71; Order 70-12, § 296-20-075, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-075, filed 11/27/68, effective 1/1/69.]

WAC 296-20-081 Unrelated concurrent nonemergent surgery. Elective surgery for an unrelated condition is not normally permitted during hospitalization for an industrial condition. Under some circumstances unrelated elective surgery may be permitted through prior agreement and approval by the department provided the unrelated surgery is not more extensive than the procedure for the industrial condition. The requesting doctor must submit a written request and identify which services are needed due to the industrial injury and which are needed due to unrelated conditions, along with an estimate of what effect, if any, the unrelated surgery will have on the accepted conditions and recovery time from surgery.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-081, filed 12/23/80, effective 3/1/81; Order 70-12, § 296-20-081, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-095.]

WAC 296-20-091 Home nursing or attendant care. A worker temporarily totally disabled or permanently totally disabled may either temporarily or permanently require home nursing or attendant care. A physician's request and prior department authorization are required for home nursing and attendant care.

Home health, hospice, and home care agency providers shall be licensed.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-05-041, § 296-20-091, filed 2/13/92, effective 3/15/92. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-091, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-091, filed 6/1/71; Order 70-12, § 296-20-091, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-080.]

WAC 296-20-097 Reopenings. When a claim has been closed by the department or self-insurer by written order and notice for sixty days, submission of a formal "application to reopen claim for aggravation of condition" form (LI 210-79) is necessary. The department or self-insurer is responsible for customary charges for examinations, diagnostic studies, and determining whether or not time-loss is payable regardless of the final action taken on the reopening application. Reopening applications should be submitted immediately. When reopening is granted, the department or self-insurer can pay time loss and treatment benefits only for a period not to exceed sixty days *prior* to date the application is received by the department or self-insurer. Necessary treatment should not be deferred pending a department or self-insurer adjudication decision. However, should reopening be denied treatment costs become the financial responsibility of the worker.

[Statutory Authority: RCW 51.32.190 and 51.32.210. 90-22-054, § 296-20-097, filed 11/5/90, effective 12/6/90. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-097, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-097, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-097, filed 6/1/71; Order 70-12, § 296-20-095 (codified as WAC 296-20-097), filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-090.]

WAC 296-20-09701 Request for reconsideration. On occasion, a claim may be closed prematurely or in error or other adjudication action may be taken, which may seem inappropriate to the doctor or injured worker. When this occurs the attending doctor should submit immediately in writing his request for reconsideration of the adjudication action, supported by an outline of:

(1) The claimant's current condition.

(2) The treatment program being received.

(3) The prognosis of when stabilization will occur.

All requests for reconsideration must be received by the department or self-insurer within sixty days from date of the order and notice of closure. Request for reconsideration of other department or self-insurer orders or actions must be made in writing by either the doctor or the injured worker within sixty days of the date of the action or order.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-09701, filed 12/23/80, effective 3/1/81.]

WAC 296-20-100 Eye glasses and refractions. The department or self-insurer will be responsible one time for replacement of glasses or contact lenses only to the extent of the cost of restoring damaged item to its condition at the time of the accident. This benefit applies only if the worker was wearing the glasses or contact lens when the industrial accident occurred.

If glasses are repairable and a worker determines that he/she prefers a replacement, the department or self-insurer is responsible only for the cost of the repairs and the worker is responsible for the difference between repair and replacement costs.

Refraction to replace a broken or lost lens is only payable when it is substantiated that the prescription was not available from the broken lens or any other source. If the prescription is available, and the patient needs a new refraction, he is responsible for the costs of such exam.

If a refractive error is the result of the industrial injury or occupational disease condition, refraction and glasses or contact lenses will be authorized and paid by the department or self-insurer.

When broken or lost glasses or contact lenses are the only injury or condition suffered, the doctor's portion of the report of accident can be completed by an optometrist or other vendor furnishing the replacement. A report of accident must be received by the department or self-insurer in order to adjudicate the claim.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-100, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-100, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-100, filed 6/1/71; Order 70-12, § 296-20-100, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-100, filed 11/27/68, effective 1/1/69.]

WAC 296-20-110 Dental. Only dentists, oral surgeons or dental specialists licensed in the state in which they practice are eligible to treat workers entitled to benefits under the industrial insurance law.

If only a dental injury is involved, the doctor's portion of the report of accident must be completed by the dentist to whom the worker first reports. See WAC 296-20-025 for further information.

If the accident report has been submitted by another doctor, the dentist's report should be made by letter. In addition to the information required under WAC 296-20-025, the dentist should outline the extent of the dental injury and the treatment program necessary to repair damage due to the injury. Dental x-rays should be retained by the attending dentist for a period of not less than ten years. The department or self-insurer does not require submission of the actual films except upon specific request.

The department or self-insurer is responsible only for repair or replacement of teeth injured or dentures broken as a result of an industrial accident. Any dental work needed due to underlying conditions unrelated to the industrial injury is the responsibility of the worker. It is the responsibility of the dentist to advise the worker accordingly.

In cases presenting complication, controversy, or diagnostic or therapeutic problems, consultation by another dentist may be requested to support authorization for restorative repairs.

Bills covering the cost of dentures should be submitted for the denture only and should not include the cost for subsequent relining. If relining becomes necessary, authorization for relining must be obtained in advance from the department or self-insurer.

Bills must be submitted to the department or self-insurer within one year from the date the service is rendered. Bills must itemize the service rendered, including the current HCPCS Level II codes, the materials used and the injured tooth number(s). See WAC 296-20-125 and department policy for further billing rules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-14-044, § 296-20-110, filed 6/29/94, effective 7/30/94; 93-16-072, § 296-20-110, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-110, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-110, filed 12/23/80, effective 3/1/81; Order 70-12, § 296-20-110, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-110, filed 11/27/68, effective 1/1/69.]

WAC 296-20-1101 Hearing aids and masking devices. The department or self-insurer is responsible for replacement or repair of hearing aids damaged or lost due to an industrial accident only to the extent of restoring the damaged item to its condition at time of the accident. If the hearing aid is repairable and the worker determines he prefers replacement, the department or self-insurer is responsible only to the extent of the cost to repair the original and the worker is responsible for the difference between repair and replacement costs.

When the department or self-insurer has accepted a hearing loss condition either as a result of industrial injury or occupational exposure, the department or self-insurer will furnish a hearing aid (hearing aids when bilateral loss is present) when prescribed or recommended by a physician.

The department or self-insurer will bear the cost of repairs or replacement due to normal wear and the cost of battery replacement for the life of the hearing aid.

In cases of accepted tinnitus, the department or self-insurer may provide masking devices under the same provisions as outlined for hearing aids due to hearing loss.

Provision of masking devices and hearing aids require prior authorization.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-1101, filed 12/23/80, effective 3/1/81.]

WAC 296-20-1102 Special equipment rental and purchase prosthetic and orthotics equipment. The department or self-insurer will authorize and pay rental fee for equipment or devices if the need for the equipment will be for a short period of treatment during the acute phase of condition. Rental extending beyond sixty days requires prior authorization. If the equipment will be needed on long term basis, the department or self-insurer will consider purchase of the equipment or device. The department's or self-insurer's decision to rent or purchase an item of medical equipment will be based on a comparison of the projected rental costs of the item with its purchase price. An authorized representative of the department or self-insurer will decide whether to rent or purchase certain items, provided they are appropriate and medically necessary for treatment of the worker's accepted industrial condition. Decisions to rent or purchase items will be based on the following information:

(1) Purchase price of the item.

(2) Monthly rental fee.

(3) The prescribing doctor's estimate of how long the item will be needed.

The prescribing doctor must obtain prior authorization from the department or self-insurer, for rental or purchase of special equipment or devices. Also, all equipment (rentals and purchases), prosthetics, and orthotics must be billed using the appropriate codes, and billing forms, as determined by the medical aid rules and fee schedules.

The department or self-insurer will authorize and pay for prosthetics and orthotics as needed by the worker and substantiated by attending doctor. If such items are furnished by the attending doctor, the department or self-insurer will reimburse the doctor his cost for the item. See chapter 296-20 WAC (including WAC 296-20-124) and the fee schedules for information regarding replacement of such items on closed claims.

The department or self-insurer will repair or replace originally provided damaged, broken, or worn-out prosthetics, orthotics, or special equipment devices upon documentation and substantiation from the attending doctor.

Provision of such equipment requires prior authorization.

THE GRAVITY GUIDING SYSTEM, GRAVITY LUMBAR REDUCTION DEVICE, BACKSWING AND OTHER INVERSION TRACTION EQUIPMENT MAY ONLY BE USED IN A SUPERVISED SETTING. RENTAL OR PURCHASE FOR HOME USE WILL NOT BE ALLOWED NOR PAID BY THE DEPARTMENT OR SELF-INSURER.

EQUIPMENT NOT REQUIRING PRIOR AUTHORIZATION INCLUDES CRUTCHES, CERVICAL COLLARS, LUMBAR AND RIB BELTS, AND OTHER COMMONLY USED ORTHOTICS OF MINIMAL COST.

PERSONAL APPLIANCES SUCH AS VIBRATORS, HEATING PADS, HOME FURNISHINGS, HOT TUBS, WATERBEDS, EXERCISE BIKES, EXERCISE EQUIPMENT, JACUZZIES, PILLOWS, CASSETTE TAPES, EDUCATIONAL MATERIALS OR BOOKS, AND OTHER SIMILAR ITEMS WILL NOT BE AUTHORIZED OR PAID.

In no case will the department or self-insurer pay for rental fees once the purchase price of the rented item has been reached.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-1102, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-22-052 (Order 87-22), § 296-20-1102, filed 11/2/87; 86-06-032 (Order 86-19), § 296-20-1102, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-1102, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-1102, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-1102, filed 12/23/80, effective 3/1/81.]

WAC 296-20-1103 Travel expense. The department or self-insurer will reimburse travel expense incurred by workers for the following reasons: (1) Examinations at department's or self-insurer's request; (2) vocational services at department's or self-insurer's request; (3) treatment at department rehabilitation center; (4) fitting of prosthetic device; and (5) upon *prior authorization* for treatment when worker must travel more than ten miles one-way from the worker's home to the nearest point of adequate treatment. Travel expense *is not* payable when adequate treatment is available within ten miles of injured worker's home, yet the injured worker prefers to report to an attending doctor outside the worker's home area.

Travel expenses will be reimbursed at the current department rate.

Receipts are required for all expenses except parking expenses under ten dollars.

Claims for reimbursement of travel expenses must be received by the department or self-insurer within one year after the date expenses are incurred. Refer to WAC 296-20-125 and to department policy for additional rules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-1103, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020. 91-12-010, § 296-20-1103, filed 5/30/91, effective 7/1/91. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-20-1103, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-1103, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-1103, filed 12/23/80, effective 3/1/81.]

WAC 296-20-120 Procedures not listed in this schedule. Procedures not specifically listed will be given values comparable to those of the listed procedures of closest similarity. Refer to chapter 296-20 WAC (including the definition section) and the fee schedules for required billing documentation.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-120, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-120, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-120, filed 6/1/71; Order 70-12, § 296-20-120, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-120, filed 11/27/68, effective 1/1/69.]

WAC 296-20-12050 Special programs. (1) The department or self-insurer may from time to time enter into

special agreements for services provided by, or under the direction of, licensed providers authorized to bill the department. Special agreements are for services other than routine services covered under the fee schedule, and may include multi-disciplinary or inter-disciplinary programs such as pain management, work hardening, and physical conditioning.

(2) The department shall establish payment rates for special agreements, and may establish outcome criteria, measures of effectiveness, minimum staffing levels, certification requirements, special reporting requirements and such other criteria as will ensure injured workers receive good quality and effective services at a prudent cost.

(3) Special agreements shall be purchased at the discretion of the department or self-insurer. The department may terminate special programs from the industrial insurance program upon thirty days notice to the provider.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-24-050 (Order 87-23), § 296-20-12050, filed 11/30/87, effective 1/1/88.]

WAC 296-20-121 X-rays. Recognizing the greatest need for access to x-rays lies with the attending doctor, the department or self-insurer requires only submission of x-ray findings and does not require submission of the actual films except upon specific request when needed for purposes of permanent disability rating, other administrative or legal decisions, or in litigation cases. The department or self-insurer requires the attending doctor retain x-rays for a period of not less than ten years. In transfer cases, the x-rays in the possession of the current attending doctor must be made available to the new attending doctor.

When requesting consultation, the attending doctor should make any x-rays in his possession available to the consultant.

When a special exam has been arranged for the worker by the department or self-insurer, the worker's existing x-rays should be provided to the special examiner. The worker may carry such x-rays to the exam.

When the doctor's office is closed because of death, retirement or leaving the state, arrangements must be made with the department or self-insurer regarding custody of x-rays to insure availability on request. When submitting billing for x-ray service, a copy of the x-ray findings is required. No payment will be made for excessive or unnecessary x-rays. No payment will be made on closed or rejected claims, except under conditions outlined in WAC 296-20-124.

Prior authorization is required for x-rays subsequent to the initial study. Repeat or serial radiology examinations may be performed only upon adequate clinical justification to confirm changes in the condition(s) accepted. The subjective complaints and the objective findings substantiating the repeat study must be submitted by the practitioner in the request for authorization to the department or self-insurer.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-121, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-121, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-121, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-20-121, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-121, filed 12/1/77; Emergency Order 77-16, § 296-20-121, filed 9/6/77; Order 74-39, § 296-20-121, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-20-121, filed 1/30/74.]

WAC 296-20-124 Rejected and closed claims. (1) No payment will be made for treatment or medication on rejected claims or for services rendered after the date of claim closure.

(2) When the department or self-insurer has denied responsibility for an alleged injury or industrial condition the only services which will be paid are those which were carried out at the specific request of the department or the self-insurer and/or those examination or diagnostic services which served as a basis for the adjudication decision. Following the date of the order and notice of claim closure, the department or self-insurer will be responsible only for those services specifically requested or those examinations, and diagnostic services necessary to complete and file a reopening application.

(3) Periodic medical surveillance examinations will be covered by the department or self-insurer for workers with closed claims for asbestos-related disease, to include chest x-ray abnormalities, without the necessity of filing a reopening application when such examinations are recommended by accepted medical protocol.

(4) Replacement of prosthetics, orthotics, and special equipment can be provided on closed claims after prior authorization. See WAC 296-20-1102 for further information.

[Statutory Authority: Chapters 34.04 [34.05], 51.04, 51.32 and 51.36 RCW. 90-04-007, § 296-20-124, filed 1/26/90, effective 2/26/90. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-124, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-124, filed 11/24/76, effective 1/1/77.]

WAC 296-20-125 Billing procedures. All services rendered must be in accordance with the medical aid rules, fee schedules, and department policy. The department or self-insurer may reject bills for services rendered in violation of these rules. Workers may not be billed for services rendered in violation of these rules.

(1) Bills must be itemized on department or self-insurer forms or other forms which have been approved by the department or self-insurer. Bills may also be transmitted electronically using department file format specifications. Providers using any of the electronic transfer options must follow department instructions for electronic billing. Physicians, osteopaths, advanced registered nurse practitioners, chiropractors, naturopaths, podiatrists, psychologists, and registered physical therapists use the national standard HCFA 1500 health insurance claim form with the bar code placed 2/10 of an inch from the top and 1 1/2 inches from the left side of the form. Hospitals use the UB-92 billing form for institution services and the national standard HCFA 1500 health insurance claim form with the bar code placed 2/10 of an inch from the top and 1 1/2 inches from the left side of the form for professional services. Hospitals should refer to chapter 296-23A WAC for billing rules pertaining to institution, or facilities, charges. Pharmacies use the department's statement for pharmacy services. Dentists, equipment suppliers, transportation services, vocational services, and massage therapists use the department's statement for miscellaneous services. When billing the department for home health services, providers should use the "statement for home nursing services." Providers may

obtain billing forms from the department's local service locations.

(2) Bills must specify the date and type of service, the appropriate procedure code, the condition treated, and the charges for each service.

(3) Bills submitted to the department must be completed to include the following:

(a) Worker's name and address;

(b) Worker's claim number;

(c) Date of injury;

(d) Referring doctor's name and L & I provider account number;

(e) Area of body treated, including ICD-9-CM code(s), identification of right or left, as appropriate;

(f) Dates of service;

(g) Place of service;

(h) Type of service;

(i) Appropriate procedure code, hospital revenue code, or national drug code;

(j) Description of service;

(k) Charge;

(l) Units of service;

(m) Tooth number(s);

(n) Total bill charge;

(o) The name and address of the practitioner rendering the services and the provider account number assigned by the department;

(p) Date of billing;

(q) Submission of supporting documentation required under subsection (6) of this section.

(4) Responsibility for the completeness and accuracy of the description of services and charges billed rests with the practitioner rendering the service, regardless of who actually completes the bill form;

(5) Vendors are urged to bill on a monthly basis. Bills must be received within one year of the date of service to be considered for payment.

(6) The following supporting documentation is required when billing for services:

(a) Laboratory and pathology reports;

(b) X-ray findings;

(c) Operative reports;

(d) Office notes;

(e) Consultation reports;

(f) Special diagnostic study reports;

(g) For BR procedures - see chapter 296-20 WAC for requirements; and

(h) Special or closing exam reports.

(7) The claim number must be placed on each bill and on each page of reports and other correspondence in the upper right-hand corner.

(8) The following considerations apply to rebills.

(a) If you do not receive payment or notification from the department within one hundred twenty days, services may be rebilled.

(b) Rebills must be submitted for services denied if a claim is closed or rejected and subsequently reopened or allowed. In these instances, the rebills must be received within one year of the date the final order is issued which subsequently reopens or allows the claim.

(c) Rebills should be identical to the original bill: Same charges, codes, and billing date.

(d) In cases where vendors rebill, please indicate "REBILL" on the bill.

(9) The department or self-insurer will adjust payment of charges when appropriate. The department or self-insurer must provide the health care provider or supplier with a written explanation as to why a billing or line item of a bill was adjusted at the time the adjustment is made. A written explanation is not required if the adjustment was made solely to conform with the maximum allowable fees as set by the department. Any inquiries regarding adjustment of charges must be received in the required format within ninety days from the date of payment to be considered. Refer to the medical aid rules for additional information.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-125, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-20-125, filed 7/23/87; 86-20-074 (Order 86-36), § 296-20-125, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-125, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-20-125, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-125, filed 12/1/77; Emergency Order 77-16, § 296-20-125, filed 9/6/77; Order 75-39, § 296-20-125, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-125, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-20-125, filed 1/30/74; Order 71-6, § 296-20-125, filed 6/1/71; Order 70-12, § 296-20-125, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-125, filed 11/27/68, effective 1/1/69.]

WAC 296-20-12501 Physician assistant billing procedure. Billing for physician assistant services can be made only by the supervising physician at ninety percent of the value listed in the fee schedules. Payment will be made directly to the supervising physician. All physician assistant services must be identified by using physician assistant modifiers, as listed in chapter 296-21 WAC and the fee schedules.

(1) Bills must be itemized on department or self-insurer forms, as the case may be, specifying: The date, type of service and the charges for each service.

(2) The bill form must be completed in detail to include the claim number. While the name of the physician's assistant rendering service must be included on the bill, all bills must be submitted under the supervising physician account number. Bills will be accepted when signed by other than the practitioner rendering services. When bills are prepared by someone else, the responsibility for the completeness and accuracy of the description of services and charges rests with the supervising physician.

(3) For a bill to be considered for payment, it must be received in the department or by the self-insurer within one year from the date each specific treatment and/or service was rendered or performed. Whenever possible, bills should be submitted monthly.

(4) Bills cannot be paid for services rendered while a claim is closed.

(5) The department or self-insurer may deny payment of bills for services rendered in violation of the medical aid rules or department policy. Workers may not be billed for services rendered in violation of these rules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-12501, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-12501, filed 11/30/79, effective 1/1/80.]

WAC 296-20-132 Determination of conversion factor adjustments. Adjustments to the conversion factors for providers and services covered by the fee schedules and by department policy may occur annually following prior public hearings.

Such adjustments will be based on the estimated increase/decrease in the state's average wage for the current year and on other factors as determined by department policy. The following calendar year's estimate, of the average state wage will be adjusted to reflect the actual increase/decrease in the state's average wage for the preceding year.

The total percentage change for any one calendar year for the conversion factors may not exceed the total of the estimated increase/decrease in the current year, plus or minus the actual adjustment for the preceding calendar year.

Starting with services rendered on or after September 1, 1993, the department will adopt a new Washington State Resource Based Relative Value Scale. Due to the changes in reimbursement that will occur through implementation of this scale and supporting reimbursement policies, the department will transition its reimbursement levels over a few years. As a result, during this transition period, the fee schedules may list dollar values, instead of relative value units.

Payment for anesthesia services will continue to use base and time units. The fee schedules will not list dollar values for these services.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-132, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 88-24-011 (Order 88-28), § 296-20-132, filed 12/1/88, effective 1/1/89; 82-24-050 (Order 82-39), § 296-20-132, filed 11/29/82, effective 1/1/84.]

WAC 296-20-135 Conversion factors. (1) The following conversion factors are the base fees for determining the maximum amount paid by the department for procedures with specified unit values. Except for anesthesia services, during the transition period for services rendered on or after September 1, 1993, reimbursement levels cannot be determined by multiplying the conversion factor and a relative value unit. However, the conversion factors upon which the transition fees for nonanesthesia services are based are listed below (for informational purposes only). Refer to WAC 296-20-132 for additional information.

(2) The conversion factor or base fee for medicine, surgery, radiology, pathology, laboratory, chiropractic, physical therapy, occupational therapy, naturopathic physician, nurse practitioners procedure codes, and other providers, as determined by department policy is:

$34.51 for services rendered from September 1, 1993, to February 28, 1994.

$36.58 for services rendered after March 1, 1994.

(3) The conversion factor or base fee for anesthesia is $20.74.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-02-045 and 94-03-008, § 296-20-135, filed 12/30/93 and 1/6/94, effective 3/1/94; 93-16-072, § 296-20-135, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-02-063, § 296-20-135, filed 12/28/90, effective 1/28/91; 88-24-011 (Order 88-28), § 296-20-135, filed 12/1/88, effective 1/1/89; 87-03-004 (Order 86-45), § 296-20-135, filed 1/8/87; 83-24-016 (Order 83-35), § 296-20-135, filed 11/30/83, effective 1/1/84; 82-24-050 (Order 82-39), § 296-20-135, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-135, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-135, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-135, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-135, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-135, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-135, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-135, filed 1/30/74; Order 71-6, § 296-20-135, filed 6/1/71; Order 68-7, § 296-20-135, filed 11/27/68, effective 1/1/69.]

WAC 296-20-170 Pharmacy—Acceptance of rules and fees. Acceptance and filling of a prescription for a worker entitled to benefits under the industrial insurance law, constitutes acceptance of the department's rules and fees. When there is questionable eligibility, (i.e., no claim number, prescription is for medication other than usually prescribed for industrial injury; or pharmacist has reason to believe claim is closed or rejected), the pharmacist may require the worker to pay for the prescription. In these cases, the pharmacist must furnish the worker with a signed receipt and a nonnegotiable copy of the prescription including national drug code and quantity or a completed department pharmacy bill form signed in the appropriate areas verifying worker has paid for the prescribed item(s) in order for the worker to bill the department or self-insurer for reimbursement. The worker may not be charged more than the amount allowable by the department or self-insurer. The worker must submit such reimbursement request within one year of the date of service.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-170, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-170, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-170, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-170, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17001 Allowance and payment for medication. The department or self-insurer will pay for medications or supplies dispensed for the treatment of conditions resulting from an industrial injury and/or conditions which are retarding the recovery from the industrial injury, for which the department or self-insurer has accepted temporary responsibility.

Approved generics are to be substituted for brand name pharmaceuticals in all cases unless the worker's condition will not tolerate a generic preparation and the prescribing physician indicates no substitution is permitted. A list of approved generics and their base cost will be published periodically by the department.

Items not normally paid include: Syringes, injectables, heating pads, vibrators, personal appliances, oral nutritional supplements, anorexiants, and medications normally prescribed for systemic conditions. These items may be authorized to certain individuals in unusual circumstances; prior approval from the department or self-insurer is mandatory.

Rental or purchase of medical equipment must be prior authorized by the department or self-insurer.

No bills will be paid for medication dispensed after the date of order and notice of claim closure, on an accepted claim; nor, on rejected claims; nor for conditions unrelated to the industrial condition.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-17001, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-20-17001, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17001, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-17001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17002 Billing. In addition to the billing procedures described in WAC 296-20-125 and in department policy the current national drug code number for each prescribed drug, followed by the average wholesale price to the pharmacy must be entered on each prescription. The department's statement for pharmacy services must be used when billing the department for NDC medications and supplies. The department's statement for miscellaneous services must be used when billing the department for non-NDC medications and supplies. In addition, the claimant's name, claim number, date of injury, prescribing doctor's name and department of labor and industries provider number; and the assigned department provider number for the pharmacy must be on the bill. Bills for medication not containing this information will be returned to the pharmacy. Billing must be made within one year of the date of service. It is requested bills be presented on a monthly basis.

When billing the department for compound prescriptions, providers must use the "Statement for Compound Prescriptions."

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-20-17002, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-17002, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-20-17002, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17002, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-17002, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17003 Fees. Payment for drugs and medications including all oral nonlegend drugs will be made at the average wholesale price plus an additional fee, on the following basis:

Wholesale cost		Additional fee
up to $3.00	+	$5.00
$3.01 to $8.00	+	$6.00
$8.01 to $15.00	+	$7.50
$15.01 & over	+	$8.00 + 10% average wholesale price

Orders may be written for over-the-counter nonoral drugs or nondrug items on department prescription forms. These items are to be priced on a forty percent margin (the average wholesale price ÷ .6).

Compounded prescriptions will be paid at the cost of the ingredients plus the applicable professional component based on that cost as indicated above.

Per RCW 82.08.0281 prescription drugs and oral or topical over-the-counter medications are nontaxable.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-17003, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17003, filed 12/1/80, effective 1/1/81; Order 77-27, § 296-20-17003, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-17003, filed 11/24/76, effective 1/1/77.]

WAC 296-20-200 General information. (1) The department of labor and industries has promulgated the following rules and categories to provide a comprehensive system of classifying unspecified permanent partial disabilities in the proportion they reasonably bear to total bodily impairment. The department's objectives are to reduce litigation and establish more certainty and uniformity in the rating of unspecified permanent partial disabilities pursuant to RCW 51.32.080(2).

(2) The following system of rules and categories directs the examining physician's attention to the actual conditions found and establishes a uniform system for conducting rating examinations and reporting findings and conclusions in accord with broadly accepted medical principles.

The evaluation of bodily impairment must be made by medical experts. This system recognizes and provides for this. After conducting the examination, the examining physician will choose the appropriate category for each bodily area or system involved in the particular claim and include this information in the report. The physician will, therefore, in addition to describing the worker's condition in the report, submit the conclusions as to the relative severity of the impairment by giving it in terms of a defined condition rather than a personal opinion as to a percentage figure. In the final section of this system of categories and rules are some rules for determining disabilities and the classification of disabilities in bodily impairment is listed for each category. These last provisions are for the department's administrative use in acting upon the medical opinions which have been submitted to it.

(3) In preparing this system, the department has complied with its duty to enact rules classifying unspecified disabilities in light of statutory references to nationally recognized standards or guides for determining various bodily impairments. Accordingly, the department has obtained and acted upon sound established medical opinion in thus classifying unspecified disabilities in the reasonable proportion they bear to total bodily impairment. In framing descriptive language of the categories and in assigning a percentage of disability, careful consideration has been given to nationally recognized medical standards and guides. Both are matters calling for the use of expert medical knowledge. For this reason, the meaning given the words used in this set of categories and accompanying rules, unless the text or context clearly indicates the contrary, is the meaning attached to the words in normal medical usage.

(4) The categories describe levels of physical and mental impairment. Impairment is anatomic or functional abnormality or loss of function after maximum medical rehabilitation has been achieved. This is the meaning of "impairment" as the word is used in the guides mentioned above. This standard applies to all persons equally, regardless of factors other than loss of physical or mental function. Impairment is evaluated without reference to the nature of injury or the treatment therefore, but is based on the functional loss due to the injury or occupational disease. The categories have been framed to include conditions in other bodily areas which derive from the primary impairment. The categories also include the presence of pain, tenderness and other complaints. Workers with comparable loss of function thus receive comparable awards.

(5) These rules and categories (WAC 296-20-200 through 296-20-690) shall only be applicable to compensable injuries occurring on or after the effective date of these rules and categories.

(6) These rules and categories (WAC 296-20-200 through 296-20-690) shall be applicable only to cases of permanent partial disability. They have no applicability to determinations of permanent total disability.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-20-200, filed 3/8/91, effective 5/1/91; Order 74-32, § 296-20-200, filed 6/21/74, effective 10/1/74.]

WAC 296-20-210 General rules. These general rules establish a uniform standard for conducting examinations and submitting reports of examinations. These general rules must be followed by physicians who make examinations or evaluations of permanent bodily impairment.

(1) Examinations for the medical determination of the extent of permanent bodily impairment shall be made only by physicians currently licensed to practice medicine and surgery.

(2) Whenever an examination is made, the physician shall record, among other pertinent information, the complete history as obtained from the person examined; the complete history of past injuries and diseases; the complaints; the age, sex, height and weight; x-ray findings and diagnostic tests made or reviewed in connection with the examination; the diagnosis; and all findings, including negative findings, in all bodily areas and systems where a detailed review of systems reveals past or present complaints. The physician shall record his conclusions as to: Whether the residuals of the injury are fixed; whether treatment is required for the injury and, if so, any treatment shall be described. If the examining physician finds residuals of the injury are fixed, he shall record the appropriate category or categories of permanent impairment for diagnoses attributable to the industrial injury or occupational disease. Conditions or impairments not attributable to the industrial injury or occupational disease shall be described and diagnosed in the report, with a description of how they affect the person examined and the appropriate category of permanent impairment where possible.

(3) The examining physician shall not assign a percentage figure for permanent bodily impairment described in the categories established herein.

(4) Reports shall specify diagnoses and medical terms as listed in current procedural terminology (CPT), current medical information and terminology (CMIT), international classification of diseases adopted (ICDA), or standard nomenclature of disease, except when otherwise specified in these rules.

(5) Workers who are scheduled for disability examinations are allowed to bring with them an accompanying person to be present during the physical examination. The accompanying person cannot be compensated in any manner, except that language interpreters may be necessary for the communication process and may be reimbursed for interpretative services.

The department may designate those conditions under which the accompanying person is allowed to be present during the disability examination process.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 88-14-012 (Order 88-09), § 296-20-210, filed 6/24/88; Order 74-32, § 296-20-210, filed 6/21/74, effective 10/1/74.]

WAC 296-20-220 Special rules for evaluation of permanent bodily impairment. (1) Evaluations of permanent bodily impairment using categories require uniformity in procedure and terminology. The following rules have been enacted to produce this uniformity and shall apply to all evaluations of permanent impairment of an unspecified nature.

(a) Gradations of relative severity shall be expressed by the words "minimal," "mild," "moderate" and "marked" in an ascending scale. "Minimal" shall describe deviations from normal responses which are not medically significant. "Mild," "moderate" and "marked" shall describe ranges of medically significant deviations from normal responses. "Mild" shall describe the least severe third. "Moderate" shall describe the middle third. "Marked" shall describe the most severe third.

(b) "Permanent" describes those conditions which are fixed, lasting and stable, and from which within the limits of medical probability, further recovery is not expected.

(c) "Impairment" means a loss of physical or mental function.

(d) "Total bodily impairment," as used in these rules, is the loss of physical or mental function which is essentially complete short of death.

(e) The examining physician shall not assign a percentage figure for permanent bodily impairment described in the categories established herein.

(f) The method of evaluating impairment levels is by selection of the appropriate level of impairment. These descriptive levels are called "categories." Assessments of the level of impairment are to be made by comparing the condition of the injured workman with the conditions described in the categories and selecting the most appropriate category.

These rules and categories for various bodily areas and systems provide a comprehensive system for the measurement of disabling conditions which are not already provided for in the list of specified permanent partial disabilities in RCW 51.32.080(1). Disabilities resulting from loss of central visual acuity, loss of an eye by enucleation, loss of hearing, amputation or loss of function of the extremities will continue to be evaluated as elsewhere provided in RCW 51.32.080.

The categories have been classified in percentages in reasonable proportion to total bodily impairment for the purpose of determining the proper award. Provision has been made for correctly weighing the overall impairment due to particular injuries or occupational disease in cases in which there are preexisting impairments.

(g) The categories of the various bodily areas and systems are listed in the order of increasing impairment except as otherwise specified. Where several categories are given for the evaluation of the extent of permanent bodily impairment, the impairments in the higher numbered categories, unless otherwise specified, include the impairments in the lesser numbered categories. No category for a condition due to an injury shall be selected unless that condition is permanent as defined by these rules.

The examining physician shall select the one category which most accurately indicates the overall degree of permanent impairment unless otherwise instructed. Where there is language in more than one category which may

appear applicable, the category which most accurately reflects the overall impairment shall be selected.

The categories include appropriate subjective complaints in an ascending scale in keeping with the severity of objective findings, thus a higher or lower category is not to be selected purely on the basis of unusually great or minor complaints.

(h) When the examination discloses a preexisting permanent bodily impairment in the area of the injury, the examining physician shall report the findings and any category of impairment appropriate to the workman's condition prior to his industrial injury in addition to the findings and the categories appropriate to the workman's condition after the injury.

(i) Objective physical or clinical findings are those findings on examination which are independent of voluntary action and can be seen, felt, or consistently measured by examining physicians.

(j) Subjective complaints or symptoms are those perceived only by the senses and feelings of the person being examined which cannot be independently proved or established.

(k) Muscle spasm as used in these rules is an involuntary contraction of a muscle or group of muscles of a more than momentary nature.

(l) An involuntary action is one performed independently of the will.

(m) These special rules for evaluation of permanent bodily impairment shall apply to all examinations for the evaluation of impairment, in accordance with RCW 51.32.080, for the body areas or systems covered by or enumerated in WAC 296-20-230 through 296-20-660.

(n) The rules for evaluation of each body area or system are an integral part of the categories for that body area or system.

(o) In cases of injury or occupational disease of bodily areas and/or systems which are not included in these categories or rules and which do not involve loss of hearing, loss of central visual acuity, loss of an eye by enucleation or loss of the extremities or use thereof, examining physicians shall determine the impairment of such bodily areas and/or systems in terms of percentage of total bodily impairment.

(p) The words used in the categories of impairments, in the rules for evaluation of specific impairments, the general rules, and the special rules shall be deemed, unless the context indicates the contrary, to have their general and accepted medical meanings.

(q) The rating of impairment due to total joint replacement shall be in accordance with the limitation of motion guidelines as set forth in the "Guides to the Evaluation of Permanent Impairment" of American Medical Association, with department of labor and industries acknowledgement of responsibility for failure of prostheses beyond the seven year limitation.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-220, filed 11/30/79, effective 1/1/80; Order 74-32, § 296-20-220, filed 6/21/74, effective 10/1/74.]

WAC 296-20-230 Cervical and cervico-dorsal impairments. (1) Rules for evaluation of cervical and cervico-dorsal impairments are as follows:

(a) Muscle spasm or involuntary guarding, bony or fibrous fusion, any arthritic condition, internal fixation devices or other physical finding shall be considered, in selecting the appropriate category, only insofar as productive of cervical or cervico-dorsal impairment.

(b) Gradations of clinical findings of cervico-dorsal impairments in terms of "mild," "moderate" or "marked" shall be based on objective medical tests.

(c) Categories 2, 3, 4 and 5 include the presence of complaints of whatever degree in the neck or extremities.

(d) Bladder and/or bowel sphincter impairments deriving from cervical and cervico-dorsal impairment shall be evaluated separately.

(e) Neck as used in these rules and categories shall include the cervical and adjacent areas.

[Order 74-32, § 296-20-230, filed 6/21/74, effective 10/1/74.]

WAC 296-20-240 Categories of permanent cervical and cervico-dorsal impairments. (1) No objective clinical findings are present. Subjective complaints may be present or absent.

(2) Mild cervico-dorsal impairment, with objective clinical findings of such impairment with neck rigidity substantiated by x-ray findings of loss of anterior curve, without significant objective neurological findings.

This and subsequent categories include the presence or absence of pain locally and/or radiating into an extremity or extremities. This and subsequent categories also include the presence or absence of reflex and/or sensory losses. This and subsequent categories also include objectively demonstrable herniation of a cervical intervertebral disc with or without discectomy and/or fusion, if present.

(3) Mild cervico-dorsal impairment, with objective clinical findings of such impairment, with neck rigidity substantiated by x-ray findings of loss of anterior curve, narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with significant objective findings of mild nerve root involvement.

This and subsequent categories include the presence or absence of any other neurological deficits not otherwise specified in these categories with the exception of bladder and/or bowel sphincter impairments.

(4) Moderate cervico-dorsal impairment, with objective clinical findings of such impairment, with neck rigidity substantiated by x-ray findings of loss of anterior curve, narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with objective findings of moderate nerve root involvement with weakness and numbness in one or both upper extremities.

(5) Marked cervico-dorsal impairment, with marked objective clinical findings of such impairment, with neck rigidity substantiated by x-ray findings of loss of anterior curve, narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with objective findings of marked nerve root involvement with weakness and numbness in one or both upper extremities.

[Order 74-32, § 296-20-240, filed 6/21/74, effective 10/1/74.]

WAC 296-20-250 Impairments of the dorsal area. (1) Rules for evaluation of permanent dorsal area impairments are as follows:

(a) Muscle spasm or involuntary guarding, bony or fibrous fusion, any arthritic condition, internal fixation devices or other physical finding shall be considered, in selection of the appropriate category, only insofar as productive of dorsal area impairment.

(b) Gradations of clinical findings of dorsal impairments in terms of "mild," "moderate" or "marked" shall be based on objective medical tests.

(c) Categories 2 and 3 include the presence of complaints of whatever degree.

(d) Bladder and/or bowel sphincter impairments deriving from impairments of the dorsal area shall be evaluated separately.

(e) Impairments which also involve the cervical or lumbar areas shall be evaluated only under the cervical and cervico-dorsal or dorsolumbar and lumbosacral categories.

[Order 74-32, § 296-20-250, filed 6/21/74, effective 10/1/74.]

WAC 296-20-260 Categories of permanent dorsal area impairments. (1) No objective clinical findings are present. Subjective complaints may be present or absent.

(2) Mild or moderate dorsal impairment, with objective clinical findings of such impairment, without significant objective neurological findings, with or without x-ray changes of narrowed intervertebral disc spaces and/or osteoarthritic lipping of intervertebral margins. Includes the presence or absence of reflex and/or sensory losses.

This and the subsequent category include the presence or absence of pain, locally or radiating from the dorsal area.

(3) Marked dorsal impairment, with marked objective clinical findings, with marked x-ray findings of narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with significant objective neurological deficits, complaints and/or findings, deriving from dorsal impairment.

[Order 74-32, § 296-20-260, filed 6/21/74, effective 10/1/74.]

WAC 296-20-270 Dorso-lumbar and lumbosacral impairments. (1) Rules for evaluation of permanent dorso-lumbar and lumbosacral impairments are as follows:

(a) Muscle spasm or involuntary guarding, bony or fibrous fusion, any arthritic condition, internal fixation devices or other physical finding shall be considered, in selecting the appropriate category, only insofar as productive of low back impairment.

(b) Gradations of clinical findings of low back impairments in terms of "mild," "moderate" or "marked" shall be based on objective medical tests.

(c) All of the low back categories include the presence of complaints of whatever degree.

(d) Any and all neurological deficits, complaints, and/or findings in other bodily areas or systems which are the result of dorso-lumbar and lumbosacral impairments, except for objectively demonstrated bladder and/or bowel sphincter impairments, shall be evaluated by the descriptions contained in the categories of dorso-lumbar and lumbosacral impairments.

(e) Bladder and/or bowel sphincter impairments deriving from dorso-lumbar and lumbosacral impairments shall be evaluated separately.

(f) Low back as used in these rules and categories includes the lumbar and adjacent areas.

[Order 74-32, § 296-20-270, filed 6/21/74, effective 10/1/74.]

WAC 296-20-280 Categories of permanent dorso-lumbar and lumbosacral impairments. (1) No objective clinical findings. Subjective complaints and/or sensory losses may be present or absent.

(2) Mild low back impairment, with mild intermittent objective clinical findings of such impairment but no significant x-ray findings and no significant objective motor loss. Subjective complaints and/or sensory losses may be present.

(3) Mild low back impairment, with mild continuous or moderate intermittent objective clinical findings of such impairment but without significant x-ray findings or significant objective motor loss.

This and subsequent categories include: The presence or absence of reflex and/or sensory losses; the presence or absence of pain locally and/or radiating into an extremity or extremities; the presence or absence of a laminectomy or discectomy with normally expected residuals.

(4) Mild low back impairment, with mild continuous or moderate intermittent objective clinical findings of such impairment, with mild but significant x-ray findings and with mild but significant motor loss objectively demonstrated by atrophy and weakness of a specific muscle or muscle group.

This and subsequent categories include the presence or absence of a surgical fusion with normally expected residuals.

(5) Moderate low back impairment, with moderate continuous or marked intermittent objective clinical findings of such impairment, with moderate x-ray findings and with mild but significant motor loss objectively demonstrated by atrophy and weakness of a specific muscle or muscle group.

(6) Marked low back impairment, with marked intermittent objective clinical findings of such impairment, with moderate or marked x-ray findings and with moderate motor loss objectively demonstrated by atrophy and weakness of a specific muscle or muscle group.

(7) Marked low back impairment, with marked continuous objective clinical findings of such impairment, with marked x-ray findings and with marked motor loss objectively demonstrated by marked atrophy and weakness of a specific muscle or muscle group.

(8) Essentially total loss of low back functions, with marked x-ray findings and with marked motor loss objectively demonstrated by marked atrophy and weakness of a muscle group or groups.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-20-280, filed 8/2/83; Order 74-32, § 296-20-280, filed 6/21/74, effective 10/1/74.]

WAC 296-20-290 Impairments of the pelvis. (1) Rules for impairment of the pelvis:

(a) All of these categories include the presence of complaints of whatever degree.

(b) Categories 2, 5, 6 and 7 describe separate entities and more than one may be selected when appropriate. Category 9 includes the findings described in Category 3, and Category 8 includes the findings described in Category 4.

[Order 74-32, § 296-20-290, filed 6/21/74, effective 10/1/74.]

WAC 296-20-300 Categories of permanent impairments of the pelvis. (1) Healed pelvic fractures without displacement, without residuals; healed fractures with displacement without residuals, of: Single ramus, bilateral rami, ilium, innominate or coccyx; or healed fracture of single rami with displacement with deformity and residuals.

(2) Healed fractures with displacement with deformity and residuals of ilium.

(3) Healed fractures of symphysis pubis, without separation with displacement without residuals.

(4) Healed fractures of sacrum with displacement without residuals.

(5) Healed fracture of bilateral rami with displacement with deformity and residuals.

(6) Excision or nonunion of fractures of coccyx.

(7) Healed fractures of innominate, displaced one inch or more, with deformity and residuals.

(8) Healed fractures of sacrum extending into sacroiliac joint with deformity and residuals.

(9) Healed fractures of symphysis, displaced or separated, with deformity and residuals.

[Order 74-32, § 296-20-300, filed 6/21/74, effective 10/1/74.]

WAC 296-20-310 Convulsive neurological impairments. (1) Rules for evaluation of convulsive neurological impairments:

(a) The description of Categories 2, 3 and 4 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-310, filed 6/21/74, effective 10/1/74.]

WAC 296-20-320 Categories of permanent convulsive neurological impairments. (1) No electroencephalogram findings of convulsive neurological disorder. Subjective complaints may be present or absent.

(2) Electroencephalogram findings of convulsive neurological disorder, but on appropriate medication there are no seizures.

(3) Electroencephalogram findings of convulsive neurological disorder, and on appropriate medication there are each year either one through four major seizures or one through twelve minor seizures.

(4) Electroencephalogram findings of convulsive neurological disorder, and on appropriate medication there are each year either more than four major seizures or more than twelve minor seizures.

[Order 74-32, § 296-20-320, filed 6/21/74, effective 10/1/74.]

WAC 296-20-330 Impairments of mental health. (1) Rules for evaluation of permanent impairment of mental health:

(a) Mental illness means malfunction of the psychic apparatus that significantly interferes with ordinary living.

(b) Each person has a pattern of adjustment to life. The pattern of adjustment before the industrial injury or occupational disease serves as a base line for all assessments of whether there has been a permanent impairment due to the industrial injury or occupational disease.

(c) To determine the preinjury pattern of adjustment, all evaluations of mental health shall contain a complete preinjury history including, but not necessarily limited to: Family background and the relationships with parents or other nurturing figures; extent of education and reaction to it; military experience, if any; problems with civil authorities; any history of prolonged illness, and difficulty with recovery; any history of drug abuse or alcoholism; employment history, the extent of and reaction to responsibility, and relationships with others at work; capacity to make and retain friends; relationships with spouses and children; nature of daily activities, including recreation and hobbies; and lastly, some summary statement about the sources of the patient's self-esteem and sense of identity. Both strengths and vulnerabilities of the person shall be included.

(d) Differences in adjustment patterns before and after the industrial injury or occupational disease shall be described, and the report shall contain the examining physician's opinion as to whether any differences: (1) Are the result of the industrial injury or occupational disease and its sequelae, in the sense they would not have occurred had there not been the industrial injury or occupational disease; (2) are permanent or temporary; (3) are more than the normal, self-correcting and expectable response to the stress of the industrial injury or occupational disease; (4) constitute an impairment psychosocially or physiologically; and (5) are susceptible to treatment, and, if so, what kind. The presence of any unrelated or coincidental mental impairment shall always be mentioned.

(e) All reports of mental health evaluations shall use the diagnostic terminology listed in the *Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association.*

(f) No classification of impairment shall be made for complaints where the quality of daily life does not differ substantially from the preinjury pattern. A patient not currently employed may not engage in the same activities as when working, but the level and variety of his activities and zest for them shall distinguish the purely situational difference from cases of regression and withdrawal. In cases where some loss of use of body member is claimed, no category or impairment shall be assigned unless there are objective findings of physiologic regression or consistent evidence of altered adaptability.

(g) The physician shall identify the schizoid, antisocial, inadequate, sociopathic, passive, hysterical, paranoid, or dependent personality types. Patients with these longstanding character disorders may show problem behavior that seems more related to current stress than it is, sometimes unconsciously insinuating themselves into difficult situations of which they then complain. Emotional reactions to an injury and subsequent events must be carefully evaluated in these patients. It must be medically probable that such reactions are permanent before a category of impairment can be attributed to the injury; temporary reactions or preexisting psychopathology must be differentiated.

[Order 74-32, § 296-20-330, filed 6/21/74, effective 10/1/74.]

WAC 296-20-340 Categories for evaluation of permanent impairments of mental health. (1) Nervousness, irritability, worry or lack of motivation following an

injury and commensurate with it and/or other situational responses to injury that do not alter significantly the life adjustment of the patient may be present.

(2) Any and all permanent worsenings of preexisting personality traits or character disorders where aggravation of preexisting personality trait or character disorder is the major diagnosis; mild loss of insight, mildly deficient judgment, or rare difficulty in controlling behavior, anxiety with feelings of tension that occasionally limit activity; lack of energy or mild apathy with malaise; brief phobic reactions under usually avoidable conditions; mildly unusual and overly rigid responses that cause mild disturbance in personal or social adjustment; rare and usually self-limiting psycho-physiological reactions; episodic hysterical or conversion reactions with occasional self-limiting losses of physical functions; a history of misinterpreted conversations or events, which is not a preoccupation; is aware of being absentminded, forgetful, thinking slowly occasionally or recognizes some unusual thoughts; mild behavior deviations not particularly disturbing to others; shows mild over-activity or depression; personal appearance is mildly unkempt. Despite such features, productive activity is possible most of the time. If organicity is present, some difficulty may exist with orientation; language skills, comprehension, memory; judgment; capacity to make decisions; insight; or unusual social behavior; but the patient is able to carry out usual work day activities unassisted.

(3) Episodic loss of self-control with risk of causing damage to the community or self; moments of morbid apprehension; periodic depression that disturbs sleep and eating habits or causes loss of interest in usual daily activities but self-care is not a problem; fear-motivated behavior causing mild interference with daily life, frequent emotogenic organ dysfunctions requiring treatment; obsessive-compulsive reactions which limit usual activity; periodic losses of physical function from hysterical or conversion reactions; disturbed perception in that patient does not always distinguish daydreams from reality; recognizes his fantasies about power and money are unusual and tends to keep them secret; thought disturbances cause patient to fear the presence of serious mental trouble; deviant social behavior can be controlled on request; exhibits periodic lack of appropriate emotional control; mild disturbance from organic brain disease such that a few work day activities require supervision.

(4) Very poor judgment, marked apprehension with startle reactions, foreboding leading to indecision, fear of being alone and/or insomnia; some psychomotor retardation or suicidal preoccupation; fear-motivated behavior causing moderate interference with daily life; frequently recurrent and disruptive organ dysfunction with pathology of organ or tissues; obsessive-compulsive reactions causing inability to work with others or adapt; episodic losses of physical function from hysterical or conversion reactions lasting longer than several weeks; misperceptions including sense of persecution or grandiosity which may cause domineering, irritable or suspicious behavior; thought disturbance causing memory loss that interferes with work or recreation; periods of confusion or vivid daydreams that cause withdrawal or reverie; deviations in social behavior which cause concern to others; lack of emotional control that is a nuisance to family and associates; moderate disturbance from organic brain disease such as to require a moderate amount of supervision and direction of work day activities.

(5) Marked apprehension so as to interfere with memory and concentration and/or to disturb markedly personal relationships; depression causing marked loss of interest in daily activities, loss of weight, unkempt appearance, marked psycho-motor retardation, suicidal preoccupation or attempts, or marked agitation as well as depression; marked phobic reactions with bizarre and disruptive behavior; psychophysiological reactions resulting in lasting organ or tissue damage; obsessive-compulsive reactions that preclude patient's usual activity; frequent or persistent loss of function from conversion or hysterical reactions with regressive tissue or organ change; defects in perception including frank illusions or hallucinations occupying much of the patient's time; behavior deviations so marked as to interfere seriously with the physical or mental well-being or activities of others; lack of emotional control including marked irritability or overactivity.

[Order 74-32, § 296-20-340, filed 6/21/74, effective 10/1/74.]

WAC 296-20-350 Cardiac impairments. (1) Rule for evaluation of permanent cardiac impairments:

(a) Classification of impairment using the following categories shall be based upon a carefully obtained history, thorough physical examination and the use of appropriate laboratory aids.

[Order 74-32, § 296-20-350, filed 6/21/74, effective 10/1/74.]

WAC 296-20-360 Categories of permanent cardiac impairments. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) Objective findings of mild organic heart disease but no signs of congestive heart failure. No medically appropriate symptoms produced by prolonged exertion or intensive effort or marked emotional stress.

(3) Objective findings of mild organic heart disease but no signs of congestive heart failure. Medically appropriate symptoms produced by prolonged exertion or intensive effort, or marked emotional stress but not by usual daily activities.

(4) Objective findings of moderate organic heart disease but no signs of congestive heart failure. Medically appropriate symptoms produced by prolonged exertion or intensive effort or marked emotional stress but not by usual daily activities.

(5) Objective findings of marked organic heart disease with minimal signs of congestive heart failure with therapy. Medically appropriate symptoms produced by usual daily activities.

(6) Objective findings of marked organic heart disease with mild to moderate signs of congestive heart failure despite therapy. Medically appropriate symptoms produced by usual daily activities.

[Order 74-32, § 296-20-360, filed 6/21/74, effective 10/1/74.]

WAC 296-20-370 Respiratory impairments. (1) Rules for evaluation of permanent respiratory impairments:

(a) Definitions.

(i) "FEV1" means the forced expiratory volume in 1 second as measured by a spirometric test performed as described in the most current *American Thoracic Society Statement on Standardization of Spirometry*, and using equipment, methods of calibration, and techniques that meet American Thoracic Society (ATS) criteria including reproducibility. The measurement used must be taken from a spirogram which is technically acceptable and represents the patient's best effort. The measurement is to be expressed as both an absolute value and as a percentage of the predicted value. The predicted values are those listed in the most current edition of the *American Medical Association (AMA) Guidelines* for rating permanent respiratory impairment.

(ii) "FVC" means the forced vital capacity as measured by a spirometric test in accordance with criteria described in (a)(i) of this subsection.

(iii) "FEV1/FVC" is a ratio calculated based on the ATS Guides criteria as described in the most current *American Thoracic Society Statement on Standardization of Spirometry.*

(iv) "Significant improvement" means a fifteen percent or greater improvement in FEV1 (volume) after a post-bronchodilator pulmonary function test.

(v) "DLCO" means the diffusion capacity of carbon monoxide as measured by a test based on predicted values demonstrated to be appropriate to the techniques and equipment of the laboratory performing the test according to current ATS standards. DLCO may be considered for impairment rating only if accompanied by evidence of impaired gas exchange based on exercise testing.

(vi) "VO2 Max" means the directly measured oxygen consumption at maximum exercise capacity of an individual as measured by exercise testing and oxygen consumption expressed in ml/kilo/min corrected for lean bodyweight. Estimated values from treadmill or other exercise tests without direct measurement are not acceptable. The factor limiting the exercise must be identified.

(vii) "Preexisting impairment" shall be reported as described in WAC 296-20-220 (1)(h).

(viii) "Coexisting" is a disease or injury not due to or causally related to the work-related condition that impacts the overall respiratory disability.

(ix) "Apportionment" is an estimate of the degree of impairment due to the occupational injury/exposure when preexisting or coexisting conditions are present.

(x) "Dyspnea" is the subjective complaint of shortness of breath. Dyspnea alone must not be used to determine the level of respiratory impairment. Dyspnea unexplained by objective signs of impairment or spirometry requires more extensive testing (i.e., VO2 Max).

(xi) Copies of the *American Thoracic Society Statement on Standardization of Spirometry* and ATS standards for measuring D_{LCO} can be obtained by ordering *Pulmonary Function Testing* from The American Thoracic Society, 1740 Broadway, New York, NY 10019-4374, Attn: ATS Statements. Copies of this document are available for review in the section of the office of the medical director, department of labor and industries, Tumwater building.

These standards are also available through the following references: "American Thoracic Society Committee on Proficiency Standards for Pulmonary Function Laboratories: Standardization of spirometry-1987 update." *Am Rev Respir Dis* 1987; 136:1285-1298. "American Thoracic Society D_{LCO} Standardization Conference: Single breath carbon monoxide diffusing capacity (transfer factor): Recommendations for a standard technique." *Am Rev Respir Dis* 1987; 136:1299-1307.

(b) Evaluation procedures. Each report of examination must include the following, at a minimum:

(i) Identification data: Worker's name, claim number, gender, age, and race.

(ii) Detailed occupational history: Job titles of all jobs held since employment began. A detailed description of typical job duties, protective equipment worn, engineering controls present (e.g., ventilation) as well as the specific exposures and intensity (frequency and duration) of exposures. More detail is required for jobs involving potential exposure to known respiratory hazards.

(iii) History of the present illness: Chief complaint and description of all respiratory symptoms present (e.g., wheezing, cough, phlegm, chest pain, paroxysmal nocturnal dyspnea, dyspnea at rest and on exertion) as well as the approximate date of onset, and duration of each symptom, and aggravating and relieving factors.

(iv) Past medical history: Past history of childhood or adult respiratory illness, hay fever, asthma, bronchitis, chest injury, chest surgery, respiratory infections, cardiac problems, hospitalizations for chest or breathing problems and current medications.

(v) Lifestyle and environmental exposures: Descriptive history of exposures clinically related to respiratory disease including, but not limited to, tobacco use with type and years smoked. Use of wood as a primary heat source at home or hobbies that involve potential exposure to known respiratory tract hazards, and other environmental exposures.

(vi) Family history: Family history of respiratory or cardiac disease.

(vii) Physical examination findings: Vital signs including a measured height without shoes, weight, and blood pressure. Chest exam shall include a description of the shape, breathing, breath sounds, cardiac exam, and condition of extremities (e.g., cyanosis, clubbing, or edema).

(viii) Diagnostic tests: A chest x-ray shall be obtained in all cases. When available, the x-ray should be obtained using International Labor Organization (ILO) standard techniques and interpreted using the ILO classification system. The presence or absence of pleural thickening or interstitial abnormalities shall be noted. Pulmonary function reports including a description of equipment used, method of calibration, and the predicted values used. A hard copy of all pulmonary function tracings must be available for review. The report must contain at a minimum FEV1 and FVC and a narrative summary of an interpretation of the test results and their validity.

(ix) The rating of respiratory impairment. The rating of respiratory impairment shall be based on the pulmonary function test most appropriate to the respiratory condition. A prebronchodilator and postbronchodilator test must be performed on and results reported for all patients with demonstrated airway obstruction. The largest FEV1 or FVC, on either the prebronchodilator or postbronchodilator trial must be used for rating the impairment. If the FEV1 and FEV1/FVC result in different categories of impairment, the

value resulting in a higher category of impairment will be used.

(x) The rating of persisting variable respiratory impairment with abnormal baseline function. If resting FEV1 is "abnormal" (below eighty percent predicted) and shows significant bronchodilator improvement (a greater than or equal to fifteen percent improvement in FEV1) one category of impairment must be added to the given category rating, but only when the work-related disease being rated is obstructive in nature. If there is substantial variability from test to test (and good effort), the severity of impairment may be rated, using the best fit into the category system, as described in WAC 296-20-380.

(xi) The rating of persisting variable respiratory impairment with normal baseline spirometry. Variable respiratory impairment due to allergic or irritative disorder of the respiratory tract, such as bronchial asthma or reactive airway disease, caused or permanently aggravated by factors in the work place, shall be evaluated by detailed narrative report, including the casual relationship to work factors, a discussion of the relative importance of nonwork related cofactors, such as preexisting asthma, tobacco usage, or other personal habits, the need for regular medication to substantially improve or control the respiratory condition, and the prognosis. When tests of ventilatory function, done when the patient is in clinical steady state, are normal (one second forced expiratory volume eighty percent or greater of predicted), an appropriate provocative bronchial challenge test (i.e., methacholine or histamine) shall be done to demonstrate the presence of unusual respiratory sensitivity.

(xii) At the time of the rating, the patient shall be off theophylline for at least twenty-four hours, beta agonists for at least twelve hours, and oral and/or inhaled steroids or cromolyn for at least two weeks, in order to determine severity of air-flow obstruction, unattenuated by therapy. If withdrawal of medication would produce a hazardous or life threatening condition, then the impairment cannot be rated at this time, and the physician must provide a statement describing the patient's condition and the effect of medication withdrawal.

(xiii) The method for standardizing provocative bronchial challenge testing, using either histamine or methacholine, shall be used. The test drug may be given either by continuous tidal volume inhalation of known concentrations, using an updraft nebulizer, for two minutes, or by the technique of intermittent deep breaths of increasing test drug strengths either via a Rosenthal dosimeter or updraft nebulizer, and the results shall be expressed either as the mg/ml concentration of test drug, or the cumulative breath units (1 breath of a 1 mg/ml solution equals one breath unit) which result in a prompt and sustained (at least three minute) fall in the FEV1, greater than twenty percent below baseline FEV1. Medications that can blunt the effect of bronchoprovocation testing shall be withheld prior to testing. Once testing is complete, the results shall be expressed in terms of normal, mild, moderate, or marked bronchial reactivity, as described in WAC 296-20-385.

If multiple bronchoprovocative inhalation challenge tests have been done, the examining physician shall select the one category (normal, mild, moderate, or marked) which most accurately indicates the overall degree of permanent impairment at the time of rating.

If the results of serial pulmonary function testing are extremely variable and the clinical course and use of medication also indicate major impairment, then the physician must make a statement in the formulation and medical evaluation containing, at a minimum: Diagnosis and whether work related or nonwork related; nature and frequency of treatment; stability of condition and work limitations; impairment.

(xiv) Further treatment needs. In all cases, the examining physician shall indicate whether further treatment is indicated and the nature, type, frequency, and duration of treatment recommended.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.32.080(2). 94-03-073, § 296-20-370, filed 1/17/94, effective 3/1/94. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-20-370, filed 11/29/82, effective 1/1/83; Order 74-32, § 296-20-370, filed 6/21/74, effective 10/1/74.]

WAC 296-20-380 Categories of permanent respiratory impairments. (1) The FVC and FEV1 are greater than or equal to eighty percent of predicted normal for the person's age, gender, and height. The FEV1/FVC ratio is greater than or equal to .70. Subjective complaints may be present or absent. If exercise testing is done, the maximum oxygen consumption is greater than 25cc/kilo/min.

(2) The FVC or FEV1 is from seventy to seventy-nine percent of predicted, and if obstruction is present, the FEV1/FVC ratio is .60 - .69. If exercise testing is done, the maximum oxygen consumption is 22.5-25cc/kilo/min.

(3) The FVC or FEV1 is from sixty to sixty-nine percent of predicted, and if obstruction is present, the FEV1/FVC ratio is .60 - .69. If exercise testing is done, the maximum oxygen consumption is 20-22.4cc/kilo/min.

(4) The FVC or FEV1 is from fifty-one to fifty-nine percent of predicted. The FEV1/FVC ratio is .51 - .59. If exercise testing is done, the maximum oxygen consumption is 17.5-19.9cc/kilo/min.

(5) FVC from fifty-one to fifty-nine percent of predicted, or the FEV1 from forty-one to fifty percent of predicted, and if obstruction is present, the FEV1/FVC ratio is .41 - .50. If exercise testing is done, the maximum oxygen consumption is 15-17.4cc/kilo/min.

(6) The FVC is equal to or less than fifty percent of predicted or the FEV1 is equal to or less than forty percent of predicted. The FEV1/FVC ratio is equal to or less than .40. If exercise testing is done, the maximum oxygen consumption is less than 15cc/kilo/min.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.32.080(2). 94-03-073, § 296-20-380, filed 1/17/94, effective 3/1/94. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-20-380, filed 11/29/82, effective 1/1/83; Order 74-32, § 296-20-380, filed 6/21/74, effective 10/1/74.]

WAC 296-20-385 Categories of persisting variable respiratory impairment with normal baseline spirometry. (1) "Normal" bronchial reactivity is demonstrated by an insignificant (less than twenty percent) fall from baseline FEV1 at test doses of histamine or methacholine, up to 16 mg/ml (continuous inhalation method) or up to 160 breath units (cumulative, repeated deep breath technique).

(2) "Mild" bronchial hyperactivity (BHR) is a significant (equal to or greater than twenty percent) fall in the FEV1 at test doses of 2.1-16 mg/ml, or 21-160 breath units.

(3) "Moderate" BHR is a significant (equal to or greater than twenty percent) fall in the FEV1 at test doses of 0.26-2 mg/ml, or 2.6-20 breath units.

(4) "Marked" BHR is a significant (equal to or greater than twenty percent) fall in the FEV1 at test doses equal to or less than .25 mg/ml, or 2.5 breath units.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.32.080(2). 94-03-073, § 296-20-385, filed 1/17/94, effective 3/1/94.]

WAC 296-20-390 Air passage impairments. (1) Rule for evaluation of permanent air passage impairments:

(a) Categories 2, 3, 4 and 5 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-390, filed 6/21/74, effective 10/1/74.]

WAC 296-20-400 Categories of permanent air passage impairments. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, complete obstruction of nasopharynx or of nasal passages bilaterally. No dyspnea caused by the air passage defect even on activity requiring prolonged exertion or intensive effort.

(3) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, complete obstruction of nasopharynx or of nasal passages bilaterally, dyspnea caused by the air passage defect produced only by prolonged exertion or intensive effort.

(4) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, complete obstruction of nasopharynx or of nasal passages bilaterally, with permanent tracheostomy or stoma, dyspnea caused by the air passage defect produced only by prolonged exertion or intensive effort.

(5) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, with or without permanent tracheostomy or stoma if dyspnea is produced by moderate exertion.

(6) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, with or without permanent tracheostomy or stoma if dyspnea is produced by mild exertion.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-20-400, filed 8/2/83; Order 74-32, § 296-20-400, filed 6/21/74, effective 10/1/74.]

WAC 296-20-410 Nasal septum impairments. (1) Rules for evaluation of permanent air passage impairments due to nasal septum perforation.

(a) These categories, if appropriate, are to be used in addition to the categories of permanent air passage impairment.

(b) Categories 1 and 2 include complaints of whatever degree.

[Order 74-32, § 296-20-410, filed 6/21/74, effective 10/1/74.]

WAC 296-20-420 Categories of permanent air passage impairment due to nasal septum perforations. (1) Perforation or perforations posterior to the cartilaginous septum.

(2) Perforation or perforations through or anterior to the cartilaginous septum.

[Order 74-32, § 296-20-420, filed 6/21/74, effective 10/1/74.]

WAC 296-20-430 Loss of taste and smell. (1) Rule for evaluation of permanent loss of taste and smell.

(a) If the person being examined can detect any odor or taste, even though it cannot be named, no category shall be assigned.

[Order 74-32, § 296-20-430, filed 6/21/74, effective 10/1/74.]

WAC 296-20-440 Categories of permanent loss of taste and smell. (1) Loss of sense of taste.

(2) Loss of sense of smell.

[Order 74-32, § 296-20-440, filed 6/21/74, effective 10/1/74.]

WAC 296-20-450 Speech impairments. (1) Rules for evaluation of permanent speech impairments.

(a) The physician making an examination for evaluation of permanent speech impairment should have normal hearing and the examination should be conducted in a reasonably quiet office which approximates the noise level conditions of everyday living.

(b) Selection of the appropriate category of permanent speech impairment shall be based on direct observation of the speech of the person being examined, including, but not limited to: Response to interview, oral reading, and counting aloud. The observation shall be made with the physician about eight feet from the person being examined both when he faces the physician and with his back to the physician.

[Order 74-32, § 296-20-450, filed 6/21/74, effective 10/1/74.]

WAC 296-20-460 Categories of permanent speech impairments. (1) No objective findings of significant speech impairment are present. Subjective complaints may be present or absent.

(2) Can produce speech of sufficient audibility, intelligibility and functional efficiency for most everyday needs, although this may require effort and occasionally exceed capacity; listeners may occasionally ask for repetition and it may be difficult to produce some elements of speech, and there may be slow speaking and hesitation.

(3) Can produce speech of sufficient audibility, intelligibility and functional efficiency for many everyday needs, is usually heard under average conditions but may have difficulty in automobiles, busses, trains, or enclosed areas; can give name, address, and be understood by a stranger, but may have numerous inaccuracies and have difficulty articulating; speech may be interrupted, hesitant or slow.

(4) Can produce speech of sufficient audibility, intelligibility and functional efficiency for some everyday needs

such as close conversation, conversation with family and friends, but has considerable difficulty in noisy places; voice tires rapidly and tends to become inaudible in a few seconds, strangers may find patient difficult to understand; patient may be asked to repeat often, and often can only sustain consecutive speech for brief periods.

(5) Can produce speech of sufficient audibility, intelligibility and functional efficiency for few everyday needs; can barely be heard by a close listener or over the telephone; may be able to whisper audibly but has no voice; can produce some speech elements; may have approximation of a few words such as names of family members which are, however, unintelligible out of context; cannot maintain uninterrupted speech flow, speech is labored, and its rate is impractically slow.

(6) Is unable to produce speech of sufficient audibility, intelligibility and functional efficiency for any everyday needs.

[Order 74-32, § 296-20-460, filed 6/21/74, effective 10/1/74.]

WAC 296-20-470 Skin impairments. (1) Rules for evaluation of permanent skin impairments.

(a) Evaluation of permanent impairment of the skin shall be based upon actual loss of function and cosmetic factors shall not be considered.

(b) Categories 2, 3, 4, 5 and 6 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-470, filed 6/21/74, effective 10/1/74.]

WAC 296-20-480 Categories of permanent skin impairments. (1) Objective findings of skin disorder may be present or absent but there is no or minimal limitation in daily activities. Subjective complaints may be present or absent.

(2) Objective findings of skin disorder are present and there is discomfort and minimal limitation in the performance of daily activities.

(3) Objective findings of skin disorder are present and there is limitation in some daily activities, including avoidance of and protective measures against certain chemical or physical agents. Intermittent symptomatic treatment is required.

(4) Objective findings of skin disorder are present and there is limitation in many daily activities, including avoidance of and protective measures against certain chemical or physical agents. Continuous symptomatic treatment is required.

(5) Objective findings of skin disorder are present and there is limitation in most daily activities, including avoidance of and protective measures against certain chemical or physical agents. Continuous symptomatic treatment is required.

(6) Objective findings of skin disorder are present and there is limitation in all daily activities, including avoidance of and protective measures against certain chemical or physical agents. Continuous symptomatic treatment is required.

[Order 74-32, § 296-20-480, filed 6/21/74, effective 10/1/74.]

WAC 296-20-490 Impairment of the upper digestive tract, stomach, esophagus or pancreas. (1) Rule for evaluation of permanent impairments of the upper digestive tract, stomach, esophagus or pancreas.

(a) Categories 2, 3, 4 and 5 include complaints of whatever degree.

[Order 74-32, § 296-20-490, filed 6/21/74, effective 10/1/74.]

WAC 296-20-500 Categories of permanent impairments of the upper digestive tract, stomach, esophagus or pancreas. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) There are objective findings of digestive tract impairment but no anatomic loss or alteration, continuous treatment is not required and weight can be maintained at the medically appropriate level.

(3) There are objective findings of digestive tract impairment, or there is anatomic loss or alteration. Dietary restrictions and drugs control symptoms, signs and/or nutritional state, and weight can be maintained at at least 90 percent of medically appropriate level.

(4) There are objective findings of digestive tract impairment, or there is anatomic loss or alteration. Dietary restrictions and drugs do not completely control symptoms, signs and/or nutritional state. Weight can be maintained at 80-90 percent of medically appropriate level.

(5) There are objective findings of digestive tract impairment, or there is anatomic loss or alteration. Dietary restrictions and drugs do not control symptoms, signs and/or nutritional state. Weight cannot be maintained as high as 80 percent of medically appropriate level.

[Order 74-32, § 296-20-500, filed 6/21/74, effective 10/1/74.]

WAC 296-20-510 Lower digestive tract impairments. (1) Rule for evaluation of permanent lower digestive tract impairments.

(a) Categories 2, 3 and 4 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-510, filed 6/21/74, effective 10/1/74.]

WAC 296-20-520 Categories of permanent lower digestive tract impairments. (1) No objective findings of impairment of lower digestive tract. Subjective complaints may be present or absent.

(2) The objective findings of lower digestive tract impairment are infrequent and of brief duration, and there is limitation of activities, but special diet or medication is not required, and there are neither systemic manifestations nor impairment of nutrition.

(3) There are objective findings of lower digestive tract impairment or anatomic loss or alteration and mild gastrointestinal symptoms with occasional disturbance of bowel function, accompanied by moderate pain and minimal restriction of diet; mild symptomatic therapy may be necessary; no impairment of nutrition.

(4) There are moderate to marked intermittent bowel disturbances with continual or periodic pain; there is restriction of activities and diet during exacerbations, there are constitutional manifestations such as fever, anemia or weight

loss. Includes but is not limited to any permanent ileostomy or colostomy.

[Order 74-32, § 296-20-520, filed 6/21/74, effective 10/1/74.]

WAC 296-20-530 Impairment of anal function. (1) Rule for evaluation of permanent impairment of anal function.

(a) Categories 2, 3 and 4 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-530, filed 6/21/74, effective 10/1/74.]

WAC 296-20-540 Categories of permanent impairments of anal function. (1) No objective findings of impairment of anal function. Subjective complaints may be present or absent.

(2) There are objective findings of mild organic disease, anatomic loss or alteration with loss of anal function and mild incontinence involving gas and/or liquid stool.

(3) There are objective findings of moderate anal disease, anatomic loss or alteration with loss of anal function and moderate incontinence requiring continual care.

(4) There are objective findings of marked anal disease, anatomic loss, alteration and/or complete fecal incontinence.

[Order 74-32, § 296-20-540, filed 6/21/74, effective 10/1/74.]

WAC 296-20-550 Liver and biliary tract impairments. (1) Rule for evaluation of permanent liver and biliary tract impairments.

(a) Categories 2, 3, 4 and 5 include complaints of whatever degree.

[Order 74-32, § 296-20-550, filed 6/21/74, effective 10/1/74.]

WAC 296-20-560 Categories of permanent liver and biliary tract impairments. (1) There are no objective findings of impairment of the liver or biliary tract. Subjective complaints may be present or absent.

(2) There are objective findings on biochemical studies of minimal impairment of liver function with or without symptoms, or there are occasional episodes of loss of function of the biliary tract, but nutrition and strength are good.

(3) There are objective findings on biochemical studies of mild impairment of liver function without symptoms, or there is recurrent biliary tract impairment, but no ascites, jaundice or bleeding esophageal varices and nutrition and strength are good.

(4) There are objective findings on biochemical studies of moderate impairment of liver function with jaundice, ascites, bleeding esophageal varices or gastric varices and nutrition and strength may be affected; or there is irreparable obstruction of the common bile duct with recurrent cholangitis.

(5) There are objective findings on biochemical studies of marked impairment of liver function and nutritional state is poor; or persistent jaundice, bleeding esophageal varices or gastric varices.

[Order 74-32, § 296-20-560, filed 6/21/74, effective 10/1/74.]

WAC 296-20-570 Impairments of the spleen, loss of one kidney, and surgical removal of the bladder with urinary diversion. (1) Rule for evaluation of permanent impairments of the spleen, loss of one kidney, and surgical removal of bladder with urinary diversion.

(a) Categories 1, 2 and 3 include complaints of whatever degree.

[Order 74-32, § 296-20-570, filed 6/21/74, effective 10/1/74.]

WAC 296-20-580 Categories of permanent impairment of the spleen, loss of one kidney, and surgical removal of bladder with urinary diversion. (1) Loss of spleen by splenectomy after age eight.

(2) Loss of one kidney by surgery or complete loss of function of one kidney.

(3) Surgical removal of bladder with urinary diversion.

[Order 74-32, § 296-20-580, filed 6/21/74, effective 10/1/74.]

WAC 296-20-590 Impairment of upper urinary tract. (1) Rule for evaluation of permanent impairment of upper urinary tract.

(a) Categories 2, 3, 4 and 5 include the presence of complaints of whatever nature.

[Order 74-32, § 296-20-590, filed 6/21/74, effective 10/1/74.]

WAC 296-20-600 Categories of permanent impairments of upper urinary tract. (1) No objective findings of impairment of upper urinary tract. Subjective complaints may be present or absent.

(2) Loss of upper urinary function as evidenced by creatinine clearance of 75 to 90 liters/24 hr. (52 to 62.5 ml/min) and PSP excretion of 15 percent to 20 percent in 15 minutes; or if there are intermittent objective findings of upper urinary tract disease or dysfunction not requiring continuous treatment or surveillance.

(3) Loss of upper urinary tract function as evidenced by creatinine clearance of 60 to 75 liters/24 hr. (42 to 52 ml/min) and PSP excretion of 10 percent to 15 percent in 15 minutes; or although function is greater than these levels, there are objective findings of upper urinary tract disease or dysfunction requiring continuous surveillance and frequent symptomatic treatment.

(4) Loss of upper urinary tract function as evidenced by creatinine clearance of 40 to 60 liters/24 hr. (28 to 42 ml/min) and PSP excretion of 5 percent to 10 percent in 15 minutes; or although function is greater than these levels, there are objective findings of mild or moderate upper urinary tract disease or dysfunction which can be only partially controlled.

(5) Loss of upper urinary tract function as evidenced by creatinine clearance below 40 liters/24 hr. (28 ml/min) and PSP excretion below 5 percent in 15 minutes; or although function is greater than these levels there are objective findings of severe upper urinary tract disease or dysfunction which persists despite continuous treatment.

[Order 74-32, § 296-20-600, filed 6/21/74, effective 10/1/74.]

WAC 296-20-610 Additional permanent impairments of upper urinary tract due to surgical diversion.

(1) Rule for evaluation of additional permanent impairments of upper urinary tract due to surgical diversion.

(a) These categories include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-610, filed 6/21/74, effective 10/1/74.]

WAC 296-20-620 Categories of additional permanent impairments of upper urinary tract due to surgical diversion. (1) Uretero-intestinal diversion or cutaneous ureterostomy without intubation.

(2) Nephrostomy or intubated ureterostomy.

[Order 74-32, § 296-20-620, filed 6/21/74, effective 10/1/74.]

WAC 296-20-630 Impairment of bladder function. (1) Rules for evaluation of permanent impairment of bladder function.

(a) In making examinations for evaluation of impairments of bladder function, physicians shall use objective techniques including, but not limited to, cystoscopy, cystography, voiding cystourethrography, cystometry, uroflometry, urinalysis and urine culture.

(b) Categories 2, 3, 4 and 5 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-630, filed 6/21/74, effective 10/1/74.]

WAC 296-20-640 Categories of permanent impairments of bladder function. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) Objective findings of bladder dysfunction, intermittent treatment required, but there is no dysfunction between such intermittent attacks.

(3) Objective findings of bladder dysfunction, continuous treatment required or there is good bladder reflex activity but no voluntary control.

(4) Objective findings of bladder dysfunction, there is poor reflex activity with intermittent dribbling and no voluntary control.

(5) Objective findings of bladder dysfunction, there is no reflex or voluntary control and there is continuous dribbling.

[Order 74-32, § 296-20-640, filed 6/21/74, effective 10/1/74.]

WAC 296-20-650 Anatomical or functional loss of testes. (1) Rule for evaluation of permanent anatomical or functional loss of testes.

(a) Categories 2, 3, 4 and 5 include the presence of whatever complaints.

[Order 74-32, § 296-20-650, filed 6/21/74, effective 10/1/74.]

WAC 296-20-660 Categories of permanent anatomical or functional loss of testes. (1) No objective findings. Subjective complaints may be present or absent.

(2) Anatomical or functional loss of one testicle.

(3) Anatomical or functional loss of both testes after the age of 65.

(4) Anatomical or functional loss of both testes between the ages of 40 and 65.

(5) Anatomical or functional loss of both testes before the age of 40.

[Order 74-32, § 296-20-660, filed 6/21/74, effective 10/1/74.]

WAC 296-20-670 Disability. (1) The rules for determining disability are as follows:

(a) The determination of the percentage of disability in terms of total bodily impairment for any category is solely an administrative function and shall be done only in accordance with the tables of disability listed in WAC 296-20-680 and 296-20-690, or as otherwise provided in this chapter.

(b) When the industrial injury or occupational disease has caused further impairment to a bodily area where permanent bodily impairment existed prior to the industrial injury or occupational disease, the department shall award the percentage difference between the disability for the category of impairment which preexisted the industrial injury or occupational disease and the disability for the category of permanent impairment existing after the industrial injury or occupational disease.

(c) Neither the combined values chart provided in the guides to the evaluation of permanent impairment nor any other formula for the combination of the disabilities to different body areas or organ systems used in any other nationally recognized guide for determining bodily impairments shall be applied in computing the amount of disabilities to be awarded under these rules.

(d) Except as otherwise specifically provided, a percentage of total bodily impairment in one body area or system shall not be added to or combined with a percentage of total bodily impairment from another body area or system; the percentages for each body area or system shall be stated separately.

[Order 74-32, § 296-20-670, filed 6/21/74, effective 10/1/74.]

WAC 296-20-680 Classification of disabilities in proportion to total bodily impairment.

(1) Permanent Cervical and Cervico-Dorsal Impairments

Category	1	0%
	2	10%
	3	20%
	4	25%
	5	35%

(2) Permanent Dorsal Region Impairments

Category	1	0%
	2	10%
	3	20%

(3) Permanent Dorso-Lumbar and Lumbosacral Impairments

Category	1	0%
	2	5%
	3	10%
	4	15%
	5	25%
	6	40%
	7	60%
	8	75%

(4) Permanent Impairments of the Pelvis

Category	1	0%
	2	2%
	3	5%
	4	5%
	5	5%
	6	5%
	7	10%
	8	10%
	9	15%

(5) Permanent Convulsive Neurologic Impairments

Category	1	0%
	2	10%
	3	35%
	4	60%

(6) Permanent Mental Health Impairments

Category	1	0%
	2	10%
	3	25%
	4	45%
	5	70%

(7) Permanent Cardiac Impairments

Category	1	0%
	2	10%
	3	20%
	4	35%
	5	50%
	6	65%

(8) Permanent Respiratory Impairments

Category	1	0%
	2	15%
	3	25%
	4	40%
	5	65%
	6	75%

(9) Permanent Variable Respiratory Impairment with Normal Baseline Spirometry

Category	1	0%
	2	5%
	3	10%
	4	15%

(10) Permanent Air Passage Impairments

Category	1	0%
	2	5%
	3	15%
	4	25%
	5	35%
	6	60%

(11) Permanent Air Passage Impairments Due to Nasal Septum Perforations

Category	1	0%
	2	2%

(12) Permanent Loss of Taste and Smell

Category	1	3%
	2	3%

(13) Permanent Speech Impairments

Category	1	0%
	2	5%
	3	10%
	4	20%
	5	30%
	6	35%

(14) Permanent Skin Impairments

Category	1	0%
	2	5%
	3	10%
	4	25%
	5	40%
	6	60%

(15) Permanent Impairments of Upper Digestive Tract, Stomach, Esophagus or Pancreas

Category	1	0%
	2	5%
	3	10%
	4	35%
	5	60%

(16) Permanent Impairments of Lower Digestive Tract

Category	1	0%
	2	5%
	3	15%
	4	30%

(17) Permanent Impairments of Anal Function

Category	1	0%
	2	5%
	3	15%
	4	25%

(18) Permanent Impairments of Liver and Biliary Tract

Category	1	0%
	2	5%
	3	20%
	4	40%
	5	60%

(19) Permanent Impairments of the Spleen, Loss of One Kidney, and Surgical Removal of Bladder with Urinary Diversion

Category	1	15%
	2	10%
	3	20%

(20) Permanent Impairments of Upper Urinary Tract

Category	1	0%
	2	10%
	3	25%
	4	45%
	5	65%

(21) Additional Permanent Impairments of Upper Urinary Tract Due to Surgical Diversion

Category	1	10%
	2	15%

(22) Permanent Impairments of Bladder Function

Category	1	0%
	2	10%
	3	20%
	4	30%
	5	50%

(23) Permanent Anatomical or Functional Loss of Testes

Category	1	0%
	2	5%
	3	10%
	4	25%
	5	35%

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.32.080(2). 94-03-073, § 296-20-680, filed 1/17/94, effective 3/1/94. Statutory Authority: Chapters 34.04 [34.05], 51.04, 51.32 and 51.36 RCW. 90-04-007, § 296-20-680, filed 1/26/90, effective 2/26/90. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-680, filed 12/23/80, effective 3/1/81; Order 74-32, § 296-20-680, filed 6/21/74, effective 10/1/74.]

WAC 296-20-690 Permanent impairments of the cervico-dorsal (WAC 296-20-240) and lumbosacral regions (WAC 296-20-280) jointly.

(1) Permanent Cervical and Cervicodorsal Impairment Category 1 Plus Permanent Dorsolumbar and Lumbosacral Impairment

Category	1	0%
	2	5%
	3	10%
	4	15%
	5	25%
	6	40%
	7	60%
	8	75%

(2) Cervical-Cervicodorsal Category 2 Plus Dorsolumbar-Lumbosacral

Category	1	10%
	2	15%
	3	20%
	4	25%
	5	35%
	6	50%
	7	70%
	8	75%

(3) Cervical-Cervicodorsal Category 3 Plus Dorsolumbar-Lumbosacral

Category	1	20%
	2	25%
	3	30%
	4	35%
	5	45%
	6	55%
	7	70%
	8	75%

(4) Cervical-Cervicodorsal Category 4 Plus Dorsolumbar-Lumbosacral

Category	1	25%
	2	30%
	3	35%
	4	40%
	5	45%
	6	55%
	7	70%
	8	80%

(5) Cervical-Cervicodorsal Category 5 Plus Dorsolumbar-Lumbosacral

Category	1	35%
	2	40%
	3	45%
	4	50%
	5	55%
	6	65%
	7	70%
	8	80%

[Order 74-32, § 296-20-690, filed 6/21/74, effective 10/1/74.]

Chapter 296-21 WAC

GENERAL REIMBURSEMENT POLICIES, BUNDLED CODES AND SERVICES, GLOBAL SURGERY POLICY, PSYCHIATRIC, BIOFEEDBACK, PHYSICAL MEDICINE, HCPCS CODES AND MODIFIERS, DEPARTMENT UNIQUE CODES, NONCOVERED PROVIDER TYPES, AND INDEPENDENT MEDICAL EXAMINATIONS

WAC

SPECIFIC THERAPEUTIC PROCEDURES

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-21-010 General information and instructions. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-010, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), §296-21-010, filed 12/23/80, effective 3/1/81; Order 74-7, §296-21-010, filed 1/30/74; Order 70-12, §296-21-010, filed 12/1/70, effective 1/1/71; Order 68-7, §296-21-010, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-011 Footnotes. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-21-011, filed 8/16/91, effective 9/30/91; 87-03-005 (Order 86-47), § 296-21-011, filed 1/8/87; 86-06-032 (Order 86-19), § 296-21-011, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-011, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-011, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-011, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-011, filed 1/30/74.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-013 Special services and billing procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-013, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-21-013, filed 8/10/89, effective 9/10/89; 87-24-050 (Order 87-23), § 296-21-013, filed 11/30/87, effective 1/1/88; 87-16-004 (Order 87-18), § 296-21-013, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-013, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-013, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-013, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-013, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-21-013, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-21-013, filed 1/30/74.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-014 Unlisted service or procedure. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-014, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-014, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-014, filed 11/24/76, effective 1/1/77.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-01401 Special report. [Order 76-34, § 296-21-01401, filed 11/24/76, effective 1/1/77.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-015 Office visits. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-015, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-21-015, filed 7/23/87. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-015, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-015, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-015, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-015, filed 1/30/74; Order 71-6, § 296-21-015, filed 6/1/71; Order 68-7, § 296-21-015, filed 11/27/68, effective 1/1/69.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-020 Home or nursing (convalescent) home visits. [Order 68-7, § 296-21-020, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-025 Hospital visits. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-21-025, filed 7/23/87. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-025, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-025, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-025, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-025, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-025, filed 1/30/74; Order 70-12, § 296-21-025, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-025, filed 11/27/68, effective 1/1/69.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-026 Extended care facility, convalescent hospital, and nursing home. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-21-026, filed 7/23/87; Order 76-34, § 296-21-026, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-026, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-026, filed 1/30/74.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-027 Emergency room service. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-027, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-21-027, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-027, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-027, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-027, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-027, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-027, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-027, filed 1/30/74.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-030 Consultations. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-030, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-21-030, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-030, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-030, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-030, filed 1/30/74; Order 70-12, § 296-21-030, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-030, filed 11/27/68, effective 1/1/69.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-035 Independent medical examinations. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-001 (Order 89-01), § 296-21-035, filed 3/23/89, effective 9/1/89; 88-14-012 (Order 88-09), § 296-21-035, filed 6/24/88; 87-16-004 (Order 87-18), § 296-21-035, filed 7/23/87; Order 74-7, § 296-21-035, filed 1/30/74; Order 68-7, § 296-21-035, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed

12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-037 Examination reports. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-001 (Order 89-01), § 296-21-037, filed 3/23/89, effective 9/1/89.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-040 Independent medical examinations examiner. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-21-040, filed 8/16/91, effective 9/30/91; 89-08-001 (Order 89-01), § 296-21-040, filed 3/23/89, effective 9/1/89; 87-16-004 (Order 87-18), § 296-21-040, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-040, filed 2/28/86, effective 4/1/86; Order 75-39, § 296-21-040, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-21-040, filed 1/30/74; Order 68-7, § 296-21-040, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-045 Independent medical examinations—Two or more examiners. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-001 (Order 89-01), § 296-21-045, filed 3/23/89, effective 9/1/89; 87-16-004 (Order 87-18), § 296-21-045, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-045, filed 2/28/86, effective 4/1/86; Order 76-34, § 296-21-045, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-21-045, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-21-045, filed 1/30/74; Order 71-6, § 296-21-045, filed 6/1/71; Order 68-7, § 296-21-045, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-046 Immunization injections. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-046, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-21-046, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-046, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-046, filed 8/2/83.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-047 Therapeutic injections. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-047, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-21-047, filed 8/10/89, effective 9/10/89; 83-16-066 (Order 83-23), § 296-21-047, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-047, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-047, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-047, filed 1/30/74.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-050 Psychiatric services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-050, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-21-050, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-050, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-050, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-050, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-050, filed 1/30/74; Order 68-7, § 296-21-050, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-0501 Biofeedback rules. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-0501, filed 3/8/91, effective 5/1/91; 86-20-074 (Order 86-36), § 296-21-0501, filed 10/1/86, effective 11/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-0501, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-0501, filed 12/23/80, effective 3/1/81.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-0502 Biofeedback. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-21-0502, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-21-0502, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-0502, filed 12/23/80, effective 3/1/81.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-055 Other services. [Order 70-12, § 296-21-055, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-055, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-057 Monitoring services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-057, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-21-057, filed 7/23/87; 83-16-066 (Order 83-23), § 296-21-057, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-057, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-057, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-057, filed 1/30/74.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-060 Specific diagnostic services. [Order 68-7, § 296-21-060, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-062 Eye. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-062, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-062, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-062, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-062, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-062, filed 1/30/74. Formerly WAC 296-22-400 (part).] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-064 Ear. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-064, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-064, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-064, filed 1/30/74.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-065 Nonsurgical operating room services. [Order 68-7, § 296-21-065, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-066 Cardiovascular. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-066, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-21-066, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-21-066, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-066, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-066, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-066, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-066, filed 1/30/74. Formerly WAC 296-21-060 (part).] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-070 Pulmonary. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-070, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-070, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-070, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-070, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-070, filed 1/30/74; Order 68-7, § 296-21-070, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-075 Allergy and clinical immunology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-075, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-

09), § 296-21-075, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-21-075, filed 7/23/87; 86-06-032 (Order 86-19), § 296-21-075, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-075, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-075, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-075, filed 1/30/74; Order 68-7, § 296-21-075, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-080 Neurology and neuromuscular. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-080, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-080, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-080, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-080, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-080, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-080, filed 1/30/74; Order 68-7, § 296-21-080, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-085 Specific therapeutic procedures—Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-085, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-085, filed 2/28/86, effective 4/1/86; Order 75-39, § 296-21-085, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-21-085, filed 1/30/74; Order 68-7, § 296-21-085, filed 11/27/68, effective 1/1/69.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-086 Chemotherapy injections. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-21-086, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-21-086, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-086, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-086, filed 8/2/83.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-090 Special dermatological procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-21-090, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-21-090, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-090, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-090, filed 1/30/74; Order 68-7, § 296-21-090, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-095 Physical medicine. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-21-095, filed 8/16/91, effective 9/30/91; 86-06-032 (Order 86-19), § 296-21-095, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-095, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-095, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-095, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-095, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-095, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-21-095, filed 1/30/74; Order 70-12, § 296-21-095, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-095, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-125 Anesthesia. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-125, filed 11/30/81, effective 1/1/82; Order 74-7, § 296-21-125, filed 1/30/74; Order 68-7, § 296-21-125, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-128 Special services and billing procedures—Anesthesia. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 88-04-052 (Order 87-29), § 296-21-128, filed 1/29/88; 86-06-032 (Order 86-19), § 296-21-128, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-128, filed 11/30/81, effective 1/1/82; Order 74-7, § 296-21-128, filed 1/30/74.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-130 Calculation of total anesthesia values. [Order 74-7, § 296-21-130, filed 1/30/74; Order 70-12, § 296-21-130, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-130, filed 11/27/68, effective 1/1/69.] Repealed by 92-24-066, filed 12/1/92, effective 1/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-21-140 Guidelines. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-140, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-150 Office or other outpatient services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-150, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-160 Hospital inpatient services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-160, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-170 Consultations. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-170, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-180 Emergency department services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-180, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-190 Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-190, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-200 Critical care services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-200, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-210 Nursing facility services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-210, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-230 Case management services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-21-230, filed 12/1/92, effective 1/1/93.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-240 General instructions. [Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-21-240, filed 8/1/93, effective 9/1/93.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-21-250 Bundled services and supplies. [Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-21-250, filed 8/1/93, effective 9/1/93.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

SPECIFIC THERAPEUTIC PROCEDURES

WAC 296-21-270 Psychiatric services. The following rules supplements information contained in the fee schedules regarding coverage and reimbursement for psychiatric services.

Treatment of mental conditions to workers is to be goal directed, time limited, intensive, and limited to conditions caused or aggravated by the industrial condition. Psychiatric services to workers are limited to those provided by psychiatrists and licensed psychologists, and according to department policy. For purposes of this rule, the term "psychiatric" refers to treatment by psychologists as well as psychiatrists.

Initial evaluation, and subsequent treatment must be authorized by department staff, as outlined by department policy. The report of initial evaluation, including test results, and treatment plan are to be sent to the worker's attending provider, as well as the department. A copy of sixty-day narrative reports to the department is also to be sent to the attending provider.

All providers are bound by the medical aid rules in chapter 296-20 WAC. Reporting requirements are defined in chapter 296-20 WAC. In addition, the following are required: Testing results with scores, scales, and profiles; report of raw data sufficient to allow reassessment by a panel or independent medical examiner. Use of the current Diagnostic and Statistical Manual of the American Psychiatric Association axis format in the initial evaluation and sixty-day narrative reports, and explanation of the numerical scales are required.

A report to the department will contain, at least, the following elements:

Subjective complaints;

Objective observations;

Assessment of the worker's condition and goals accomplished; and

Plan of care.

The codes, reimbursement levels, and other policies for psychiatric services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-21-270, filed 8/1/93, effective 9/1/93.]

WAC 296-21-280 Biofeedback rules. Procedures listed in the fee schedules are for use by medical doctors, osteopathic physicians, licensed psychologists and other qualified providers as determined by department policy. All providers of biofeedback are bound by the medical aid rules and fee schedule for biofeedback services.

Administration of biofeedback treatment is limited to those practitioners who are certified by the Biofeedback Certification Institute of America or who meet the minimum education, experience, and training qualifications to be so certified. Those practitioners wishing to administer biofeedback treatment to workers, must submit a copy of their biofeedback certification or supply evidence of their qualifications to the department or self-insurer.

(1) The department will authorize biofeedback treatment for the following conditions when accepted under the industrial insurance claim:

(a) Idiopathic Raynaud's disease;

(b) Temporomandibular joint dysfunction;

(c) Myofascial pain dysfunction syndrome (MPD);

(d) Tension headaches;

(e) Migraine headaches;

(f) Tinnitus;

(g) Torticollis;

(h) Neuromuscular reeducation as result of neurological damage in CVA or spinal cord injury;

(i) Inflammatory and/or musculoskeletal disorders causally related to the accepted condition.

(2) Twelve biofeedback treatments in a ninety-day period will be authorized for the above conditions when the following is presented:

(a) An evaluation report documenting:

(i) The basis for the claimant's condition;

(ii) The condition's relationship to the industrial injury;

(iii) An evaluation of the claimant's current functional measurable modalities (i.e., range of motion, up time, walking tolerance, medication intake, etc.);

(iv) An outline of the proposed treatment program;

(v) An outline of the expected restoration goals.

(b) No further biofeedback treatments will be authorized or paid for without substantiation of evidence of improvement in measurable, functional modalities (i.e., range of motion, up time, walking tolerance, medication intake, etc.). Only one additional treatment block of twelve treatments per ninety days will be authorized. Requests for biofeedback treatment beyond twenty-four treatments or one hundred eighty days will be granted only after file review by and on the advice of the department's medical consultant.

(c) In addition to treatment, pretreatment and periodic evaluation will be authorized. Follow-up evaluation can be authorized at one, three, six, and twelve months posttreatment.

(d) At the department's option, a concurring opinion may be required regarding relationship of the condition to the industrial injury and/or need for biofeedback treatment.

The codes, reimbursement levels, and other policies for biofeedback services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-21-280, filed 8/1/93, effective 9/1/93.]

WAC 296-21-290 Physical medicine. The department or self-insurer will authorize and pay for physical medicine services only when the services are under the direct, continuous supervision of a physician who is "board qualified" in the field of physical medicine and rehabilitation, (except for subsections (1) and (2) of this section). The services must be carried out by the physician or registered physical therapist or a physical therapist assistant serving under the direction of a registered physical therapist, by whom he is employed.

The department or self-insurer will allow other licensed physicians to provide physical medicine modalities in the following situations:

(1) The primary attending physician may administer physical therapist modalities as listed under 97010 - 97039 and/or procedures as listed under 97110 - 97145 in the office. No more than six such visits will be authorized and paid to the attending physician. If the worker requires treatment beyond six visits, he/she must be referred to a registered physical therapist or a physiatrist for such treatment. The attending physician can bill an office visit in addition to the physical therapy visit for the same day if indicated. Refer to the department billing instructions regarding how to bill the physical therapy portion of the visit.

(2) In remote areas, where no registered physical therapist or physical therapist assistant is available, treatment by the attending physician with modalities listed under 97110 - 97145 may be billed under 1044M.

The codes, reimbursement levels, and other policies for physical medicine services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-21-290, filed 8/1/93, effective 9/1/93.]

Chapter 296-23 WAC
RADIOLOGY, RADIATION THERAPY, NUCLEAR MEDICINE, PATHOLOGY, HOSPITAL, CHIROPRACTIC, PHYSICAL THERAPY, DRUGLESS THERAPEUTICS AND NURSING—DRUGLESS THERAPEUTICS, ETC.

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-23-010 General information—Radiology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-010, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-010, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-010, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-010, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-010, filed 1/30/74; Order 71-6, § 296-23-010, filed 6/1/71; Order 70-12, § 296-23-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-010, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01001 Injection procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-01001, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-01001, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-01001, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01002 Custody of x-rays. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-01002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-01002, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-01002, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-01002, filed 12/1/77; Emergency Order 77-16, § 296-23-01002, filed 9/6/77; Order 76-34, § 296-23-01002, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01003 Identification of x-rays. [Order 76-34, § 296-23-01003, filed 11/24/76, effective 1/1/77.] Repealed by Order 77-27, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, filed 12/1/77; Emergency Order 77-16, filed 9/6/77.

296-23-01004 Billing procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-01004, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-01004,

filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-01004, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-01004, filed 12/1/77; Emergency Order 77-16, § 296-23-01004, filed 9/6/77; Order 76-34, § 296-23-01004, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01005 Duplication of x-rays and extra views. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-01005, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-01005, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01006 Radiology, radiation therapy, nuclear medicine and modifiers. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-23-01006, filed 8/16/91, effective 9/30/91; 89-17-039 (Order 89-09), § 296-23-01006, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23-01006, filed 1/8/87; 86-06-032 (Order 86-19), § 296-23-01006, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-01006, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-01006, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-01006, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-01006, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01007 Unlisted service or procedure. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-01007, filed 8/10/89, effective 9/10/89; 83-16-066 (Order 83-23), § 296-23-01007, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-01007, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-01007, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-01008 Special report. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-01008, filed 12/1/92, effective 1/1/93; Order 76-34, § 296-23-01008, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-013 Footnotes. [Order 74-7, § 296-23-013, filed 1/30/74.] Repealed by 81-24-041 (Order 81-28), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-015 Head and neck. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-015, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-015, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-015, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-015, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-015, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-015, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-015, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-015, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-061 (codified as WAC 296-23-015), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-015, filed 1/30/74; Order 68-7, § 296-23-015, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-020 Chest. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-020, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-020, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-020, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-020, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-020, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-020, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-020, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-020, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-020, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-064 (codified as WAC 296-23-020), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-020, filed 1/30/74; Order 68-7, § 296-23-020, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-025 Spine and pelvis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-025, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-025, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-025, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-025, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-025, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-025, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-025, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-025, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-025, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-067 (codified as WAC 296-23-025), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-025, filed 1/30/74; Order 68-7, § 296-23-025, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-030 Upper extremities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-030, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-030, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-030, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-030, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-030, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-030, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-030, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-071 (codified as WAC 296-23-030), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-030, filed 1/30/74; Order 68-7, § 296-23-030, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-035 Lower extremities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-035, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-035, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-035, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-035, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-035, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-035, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-035, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-035, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-035, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-074 (codified as WAC 296-23-035), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-035, filed 1/30/74; Order 68-7, § 296-23-035, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-040 Abdomen. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-040, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-040, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-040, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-040, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-040, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-040, filed 8/2/83. Statutory

Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-040, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-040, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-040, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-077 (codified as WAC 296-23-040), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-040, filed 1/30/74; Order 68-7, § 296-23-040, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-045 Gastrointestinal tract. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-045, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-045, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-045, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-045, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-045, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-045, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-045, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-045, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-045, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-045, filed 1/30/74; Order 68-7, § 296-23-045, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-050 Urinary tract. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-050, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-050, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-050, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-050, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-050, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-050, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-050, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-050, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-050, filed 1/30/74; Order 68-7, § 296-23-050, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-055 Female genital tract. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-055, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-055, filed 3/8/91, effective 5/1/91; 87-16-004 (Order 87-18), § 296-23-055, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-055, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-055, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-055, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-055, filed 1/30/74; Order 68-7, § 296-23-055, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-060, 296-23-070, 296-23-075, 296-23-085, 296-23-090, 296-23-095, 296-23-100, 296-23-205, 296-23-210, 296-23-215, 296-23-220, 296-23-225, 296-23-230, 296-23-235, 296-23-240 and 296-23-245. [Order 68-7, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-23-065 Vascular system. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-065, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-065, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-065, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-065, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-065, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-065, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-065, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-065, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-065, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-065, filed 1/30/74; Order 68-7, § 296-23-065, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-079 Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-079, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-079, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-079, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-079, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-079, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-079, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-079, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-079, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-079, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-079, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07901 Diagnostic ultrasound. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07901, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07901, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07902 Head and neck. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-07902, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-07902, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-07902, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-07902, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-07902, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-07902, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07902, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07902, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07903 Heart and chest. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-07903, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-07903, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-07903, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-07903, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-07903, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-07903, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07903, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07903, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07904 Thorax. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-23-07904, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-07904, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07904, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07904, filed 11/28/75, effective 1/1/76.] Repealed by 89-17-039 (Order 89-09), filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-07905 Abdomen and retroperitoneum. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-07905, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-07905, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-07905, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-07905, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-07905, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), §

296-23-07905, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07905, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07906 Pelvis, genitalia, and extremities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-07906, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-07906, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-07906, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-07906, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-07906, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-07906, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-07906, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-07906, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07906, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07907 Vascular studies. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-07907, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-07907, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-07907, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-07907, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-07907, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-07907, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07907, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07907, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-07908 Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-07908, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-07908, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-07908, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-07908, filed 7/23/87. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07908, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07908, filed 11/28/75, effective 1/1/76.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-080 Therapeutic radiology—General information and instructions. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-080, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-080, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-080, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-080, filed 7/23/87; 83-16-066 (Order 83-23), § 296-23-080, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-080, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-080, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-080, filed 1/30/74; Order 68-7, § 296-23-080, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-105 Teletherapy. [Order 74-7, § 296-23-105, filed 1/30/74. Formerly WAC 296-23-085.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-110 Brachytherapy. [Order 74-7, § 296-23-110, filed 1/30/74. Formerly WAC 296-23-090.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-115 Special adjunctive services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-115, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-115, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-115, filed 1/30/74.] Repealed by 87-16-004 (Order 87-18), filed 7/23/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-120 Nuclear medicine—General information and instructions. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-120, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-120, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-125 Diagnostic. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-125, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-125, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-125, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-125, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-125, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-125, filed 1/30/74. Formerly WAC 296-23-100.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-130 Therapeutic. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-130, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-130, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-130, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-130, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-130, filed 1/30/74. Formerly WAC 296-23-095.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-150 Low osmolar contrast media. [Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-150, filed 8/1/93, effective 9/1/93.] Repealed by 94-14-044, filed 6/29/94, effective 7/30/94. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-200 Pathology general information and instruction. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-200, filed 8/10/89, effective 9/10/89. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-200, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-200, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-200, filed 1/30/74; Order 70-12, § 296-23-200, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-200, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-201 Unlisted service or procedure. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-201, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-201, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-201, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-20101 Special report. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-20101, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-20101, filed 11/24/76, effective 1/1/77.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-20102 Pathology modifier. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-23-20102, filed 8/16/91, effective 9/30/91; 89-17-039 (Order 89-09), § 296-23-20102, filed 8/10/89, effective 9/10/89; 87-03-

005 (Order 86-47), § 296-23-20102, filed 1/8/87; 83-16-066 (Order 83-23), § 296-23-20102, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-20102, filed 12/23/80, effective 3/1/81.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-204 Panel or profile tests. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-204, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-204, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-204, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-204, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-204, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-204, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-204, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-204, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-23-204, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-204, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-208 Urinalysis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-208, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-208, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-208, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-208, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-208, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-208, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-208, filed 1/30/74. Formerly WAC 296-23-245.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-212 Chemistry and toxicology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-212, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-212, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-212, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-212, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23-212, filed 1/8/87; 86-06-032 (Order 86-19), § 296-23-212, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-212, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-212, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-212, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-212, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-216 Hematology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-216, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-216, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-216, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-216, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-216, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-216, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-216, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-216, filed 1/30/74. Formerly WAC 296-23-210.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-221 Immunology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-221, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-221, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-221, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-221, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-221, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-221, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-221, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-221, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-221, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-224 Microbiology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-224, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-224, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-224, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-224, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-224, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-224, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-224, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-224, filed 1/30/74. Formerly WAC 296-23-205.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-228 Anatomic pathology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-228, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-228, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-228, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-228, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-228, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-228, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-228, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-228, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-228, filed 1/30/74. Formerly WAC 296-23-240.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-231 Anatomic pathology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-231, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-231, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-231, filed 8/10/89, effective 9/10/89.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-232 Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23-232, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23-232, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23-232, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23-232, filed 7/23/87; 86-06-032 (Order 86-19), § 296-23-232, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-232, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-232, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-300 General statement. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-300, filed 10/1/86, effective 11/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-300, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-300, filed 11/28/75, effective 1/1/76; Order 68-7, § 296-23-300, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-301 Rates for daily and ancillary services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-301, filed 10/1/86, effective 11/1/86; 86-04-035 (Order 86-15), § 296-23-301, filed 1/30/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-301,

filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-301, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-301, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-301, filed 11/28/75, effective 1/1/76.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-305 Questionable beneficiary. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-305, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-305, filed 11/24/76, effective 1/1/77; Order 70-12, § 296-23-305, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-305, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-310 Refund of incorrect payments. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-310, filed 12/23/80, effective 3/1/81; Order 68-7, § 296-23-310, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-315 Treatment of unrelated conditions. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-315, filed 8/2/83; Order 70-12, § 296-23-315, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-315, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-320 Private room—Critical cases. [Order 74-7, § 296-23-320, filed 1/30/74; Order 68-7, § 296-23-320, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-39, filed 11/22/74 and Order 75-39, filed 11/28/75.

296-23-325 Isolation of infected cases. [Order 70-12, § 296-23-325, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-325, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-39, filed 11/22/74 and Order 75-39, filed 11/28/75.

296-23-330 Closed claims. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-330, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-330, filed 1/30/74; Order 70-12, § 296-23-330, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-330, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-335 RX's take home. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-335, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-335, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-335, filed 11/28/75, effective 1/1/76; Order 68-7, § 296-23-335, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-340 Routine laboratory procedures on admission. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-340, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-340, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-340, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-340, filed 11/22/74, effective 1/1/75; Order 68-7, § 296-23-340, filed 11/27/68, effective 1/1/69.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-345 Per diem rate. [Order 68-7, § 296-23-345, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-350 Bed accommodations. [Order 74-39, § 296-23-350, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-350, filed 1/30/74; Order 68-7, § 296-23-350, filed 11/27/68, effective 1/1/69.] Repealed by Order 75-39, filed 11/28/75, effective 1/1/76.

296-23-355 Rate affidavit. [Order 75-39, § 296-23-355, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-23-355, filed 1/30/74; Order 70-12, § 296-23-355, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-355, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-356 Billing procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-356, filed 10/1/86, effective 11/1/86; 83-16-066 (Order 83-23), § 296-23-356, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-356, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-356, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-356, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-356, filed 12/1/77; Emergency Order 77-16, § 296-23-356, filed 9/6/77; Order 76-34, § 296-23-356, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-356, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-356, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-356, filed 1/30/74; Order 71-6, § 296-23-356, filed 6/1/71; Order 70-12, § 296-23-356, filed 12/1/70, effective 1/1/71. Formerly WAC 296-23-355 (part).] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-357 X-rays. [Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-357, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-357, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-357, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-357, filed 12/1/77; Emergency Order 77-16, § 296-23-357, filed 9/6/77; Order 76-34, § 296-23-357, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-357, filed 1/30/74.] Repealed by 87-03-005 (Order 86-47), filed 1/8/87. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-360 Hospital daily service charge. [Order 74-7, § 296-23-360, filed 1/30/74; Order 68-7, § 296-23-360, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-365 Drugs. [Order 74-7, § 296-23-365, filed 1/30/74; Order 68-7, § 296-23-365, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-370 Dressing room and emergency room. [Order 74-39, § 296-23-370, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-370, filed 1/30/74; Order 68-7, § 296-23-370, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-375 Anesthetic material. [Order 74-7, § 296-23-375, filed 1/30/74; Order 68-7, § 296-23-375, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-380 Anesthetic administration—General. [Order 74-39, § 296-23-380, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-380, filed 1/30/74; Order 68-7, § 296-23-380, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-385 Anesthetic administration—Other. [Order 74-7, § 296-23-385, filed 1/30/74; Order 68-7, § 296-23-385, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-390 Surgery. [Order 74-39, § 296-23-390, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-390, filed 1/30/74; Order 68-7, § 296-23-390, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-395 Recovery room—Use of. [Order 74-7, § 296-23-395, filed 1/30/74; Order 68-7, § 296-23-395, filed 11/27/68, effective 1/1/69.] Repealed by 81-24-041 (Order 81-28), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-400 Oxygen. [Order 74-7, § 296-23-400, filed 1/30/74; Order 68-7, § 296-23-400, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-405 Parenteral fluid therapy. [Order 74-7, § 296-23-405, filed 1/30/74; Order 68-7, § 296-23-405, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-410 Use of cast room for application of casts. [Order 74-7, § 296-23-410, filed 1/30/74; Order 68-7, § 296-23-410, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-412 General information and instructions. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-412, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-415 Cast—Materials only. [Order 74-7, § 296-23-415, filed 1/30/74; Order 68-7, § 296-23-415, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-420 Fracture appliances. [Order 74-7, § 296-23-420, filed 1/30/74; Order 68-7, § 296-23-420, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-421 Diagnostic services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-421, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-421, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-421, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-425 Laboratory. [Order 74-7, § 296-23-425, filed 1/30/74; Order 68-7, § 296-23-425, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-430 Preventive services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-430, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-430, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-430, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-440 Restorative services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-440, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-440, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-440, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-450 Endodontics. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-450, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-450, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-450, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-460 Periodontics. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-460, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-460, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-460, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-470 Prosthodontics, removable—Including routine postdelivery care. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-470, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-470, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-470, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-480 Prosthodontics, fixed. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-480, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-480, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-480, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-485 Orthodontics. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-485, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-485, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-490 Oral surgery. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-490, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-490, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-490, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-495 Adjunctive general services, anesthesia and professional consultation. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23-495, filed 8/10/89, effective 9/10/89; 86-06-032 (Order 86-19), § 296-23-495, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-495, filed 8/2/83.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-500 Miscellaneous services and appliances. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-22-052 (Order 87-22), § 296-23-500, filed 11/2/87; 83-24-016 (Order 83-35), § 296-23-500, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50001 Nursing services and attendant care. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-05-041, § 296-23-50001, filed 2/13/92, effective 3/15/92; 86-06-032 (Order 86-19), § 296-23-50001, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50001, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50002 Transportation services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-07-008, § 296-23-50002, filed 3/8/91, effective 5/1/91; 86-06-032 (Order 86-19), § 296-23-50002, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50002, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50003 Hearing aids and masking devices. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50003, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50003, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50004 Eyeglasses and contact lenses. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50004, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50004, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50005 Orthotics and prosthetics. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50005, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50005, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50006 Medical supplies. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50006, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50006, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50007 Pulmonary and respiratory services and supplies. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50007, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93,

effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50008 Hospital beds and accessories. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50008, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50008, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50009 Traction equipment. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50009, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50009, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50010 Canes. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50010, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50011 Crutches. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50011, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50012 Walkers. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50012, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50012, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50013 Wheelchairs. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50013, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50013, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50014 Stimulators. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-22-052 (Order 87-22), § 296-23-50014, filed 11/2/87; 86-06-032 (Order 86-19), § 296-23-50014, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50014, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50015 Vehicle and home modification. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50015, filed 11/30/83, effective 1/1/84.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-50016 Drug and alcohol rehabilitation services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50016, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-510 Osteopathic office visits. [Order 68-7, § 296-23-510, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-23-515 Osteopathic hospital visits. [Order 68-7, § 296-23-515, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-23-610 General instructions. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-610, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-610, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-610, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-610, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-610, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-610, filed 1/30/74; Order 71-6, § 296-23-610, filed 6/1/71; Order 70-12, § 296-23-610, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-610, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-61001 Who may treat. [Order 76-34, § 296-23-61001, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61002 Acceptance of rules and fees. [Order 76-34, § 296-23-61002, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61003 Penalties. [Order 76-34, § 296-23-61003, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61004 Initial treatment and report of accident. [Order 76-34, § 296-23-61004, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61005 Treatment following initial treatment. [Order 77-27, § 296-23-61005, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-61005, filed 12/1/77; Emergency Order 77-16, § 296-23-61005, filed 9/6/77; Order 76-34, § 296-23-61005, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61006 Rejected and closed claims. [Order 76-34, § 296-23-61006, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61007 Treatment beyond 60 days. [Order 76-34, § 296-23-61007, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61008 Doctor's supplemental report. [Order 76-34, § 296-23-61008, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61009 Transfer of practitioners. [Order 77-27, § 296-23-61009, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-61009, filed 12/1/77; Emergency Order 77-16, § 296-23-61009, filed 9/6/77; Order 76-34, § 296-23-61009, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61010 Concurrent treatment. [Order 76-34, § 296-23-61010, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61011 Billing procedures. [Order 77-27, § 296-23-61011, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-61011, filed 12/1/77; Emergency Order 77-16, § 296-23-61011, filed 9/6/77; Order 76-34, § 296-23-61011, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-615 Office visits and special services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-23-615, filed 7/23/87; 83-16-066 (Order 83-23), § 296-23-615, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-615, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-615, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-615, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-

615, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-615, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-615, filed 1/30/74; Order 68-7, § 296-23-615, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-620 Chiropractic consultations. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-620, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-620, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-620, filed 1/30/74; Order 68-7, § 296-23-620, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-710 Physical therapy rules. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-002 (Order 89-01), § 296-23-710, filed 3/23/89, effective 5/1/89; 86-06-032 (Order 86-19), § 296-23-710, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-710, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-710, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-710, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-710, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-710, filed 1/30/74; Order 71-6, § 296-23-710, filed 6/1/71; Order 70-12, § 296-23-710, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-710, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-715 Modalities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-23-715, filed 7/23/87; 83-16-066 (Order 83-23), § 296-23-715, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-715, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-715, filed 1/30/74; Order 68-7, § 296-23-715, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-720 Procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-720, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-720, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-720, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-720, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-720, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-725 Tests and measurements. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-23-725, filed 8/16/91, effective 9/30/91; 87-08-004 (Order 87-09), § 296-23-725, filed 3/20/87; 86-06-032 (Order 86-19), § 296-23-725, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-725, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-725, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-725, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-730 Work hardening. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-002 (Order 89-01), § 296-23-730, filed 3/23/89, effective 5/1/89.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-810 General instructions. [Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-810, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-810, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-810, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-810, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-810, filed 1/30/74; Order 71-6, § 296-23-810, filed 6/1/71; Order 70-12, § 296-23-810, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-810, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-81001 Who may treat. [Order 76-34, § 296-23-81001, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81002 Acceptance of rules and fees. [Order 76-34, § 296-23-81002, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81003 Penalties. [Order 76-34, § 296-23-81003, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81004 Initial treatment and report of accident. [Order 76-34, § 296-23-81004, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81005 Treatment following initial treatment. [Order 77-27, § 296-23-81005, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-81005, filed 12/1/77; Emergency Order 77-16, § 296-23-81005, filed 9/6/77; Order 76-34, § 296-23-81005, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81006 Rejected and closed claims. [Order 76-34, § 296-23-81006, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81007 Treatment beyond 60 days. [Order 76-34, § 296-23-81007, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81008 Doctor's supplemental report. [Order 76-34, § 296-23-81008, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81009 Transfer of practitioners. [Order 77-27, § 296-23-81009, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-81009, filed 12/1/77; Emergency Order 77-16, § 296-23-81009, filed 9/6/77; Order 76-34, § 296-23-81009, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81010 Concurrent treatment. [Order 76-34, § 296-23-81010, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81011 Billing procedures. [Order 77-27, § 296-23-81011, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-81011, filed 12/1/77; Emergency Order 77-16, § 296-23-81011, filed 9/6/77; Order 76-34, § 296-23-81011, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-811 Office visits and special services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-23-811, filed 7/23/87. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-811, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-811, filed

12/23/80, effective 3/1/81; Order 76-34, § 296-23-811, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-811, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-815, (codified as WAC 296-23-811), filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-811, filed 1/30/74; Order 68-7, § 296-23-811, filed 11/27/68, effective 1/1/69.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-900 Licensed nursing rules. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-18-028, § 296-23-900, filed 8/27/90, effective 9/27/90; 89-17-039 (Order 89-09), § 296-23-900, filed 8/10/89, effective 9/10/89; 86-20-074 (Order 86-36), § 296-23-900, filed 10/1/86, effective 11/1/86; 83-16-066 (Order 83-23), § 296-23-900, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-900, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-23-900, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-900, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-910 Licensed nursing billing instructions. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-18-028, § 296-23-910, filed 8/27/90, effective 9/27/90; 86-20-074 (Order 86-36), § 296-23-910, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-23-910, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-910, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-910, filed 1/30/74.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-940 Vocational service providers. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-940, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9401 Reasons for holding provider ineligible for referral. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9401, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9402 Time lines. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9402, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9403 Services requiring authorization. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9403, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9408 Vocational fee schedule. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-9408, filed 8/2/83. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9408, filed 11/29/82, effective 1/1/83.] Repealed by 83-24-016 (Order 83-35), filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9409 Vocational services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-9409, filed 11/30/83, effective 1/1/84.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9410 Retraining service. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-9410, filed 11/30/83, effective 1/1/84.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-950 Massage therapy rules. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-950, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-960 Massage—Modalities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-960, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-23-960, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-970 Occupational therapy rules. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-002 (Order 89-01), § 296-23-970, filed 3/23/89, effective 5/1/89; 86-06-032 (Order 86-19), § 296-23-970, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-980 Occupational therapy services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-23-980, filed 8/16/91, effective 9/30/91; 87-08-004 (Order 87-09), § 296-23-980, filed 3/20/87; 86-20-074 (Order 86-36), § 296-23-980, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-23-980, filed 2/28/86, effective 4/1/86.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23-990 Work hardening. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-002 (Order 89-01), § 296-23-990, filed 3/23/89, effective 5/1/89.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

RADIOLOGY

WAC 296-23-135 General information—Radiology. (1) Rules and billing procedures pertaining to all practitioners rendering services to workers are presented in the general instruction section beginning with WAC 296-20-010.

(2) Billing codes, reimbursement levels, and supporting policies are listed in the fee schedules.

(3) Refer to WAC 296-20-132 and 296-20-135 for information regarding use of the conversion factors.

(4) Refer to the fee schedules for information on use of coding modifiers.

(5) The values listed in the fee schedules only apply when these services are performed by or under the responsible supervision of a doctor.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-14-044, § 296-23-135, filed 6/29/94, effective 7/30/94; 93-16-072, § 296-23-135, filed 8/1/93, effective 9/1/93.]

WAC 296-23-140 Custody of x-rays. (1) Radiographs should not be sent to the department or self-insurer unless they are requested for comparison and interpretation in determining a permanent disability, administrative or legal decisions, and for cases in litigation. X-rays must be retained for a period of ten years by the radiologist or the attending doctor.

(2) X-rays must be made available upon request to consultants, to medical examiners, to the department, to self-insurers, and/or the board of industrial insurance appeals.

(3) In cases where the worker transfers from one doctor to another, the former attending doctor will immediately forward all films in his possession to the new attending doctor.

(4) When a doctor's office is closed because of death, retirement, or upon leaving the state, department approved custodial arrangements must be made to insure availability on request. If a radiological office is closed for any of the previously listed reasons or because the partnership or corporation is being dissolved, disposition of x-rays for industrial injuries will be handled in the same manner. In the event custodial arrangements are to be made, the department must approve the arrangements prior to transfer of x-rays to the custodian so as to assure their availability to the department or self-insurer upon request.

(5) Refer to chapter 296-20 WAC (including WAC 296-20-125) and to chapter 296-21 WAC for additional information.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-140, filed 8/1/93, effective 9/1/93.]

WAC 296-23-145 Duplication of x-rays and extra views. Every attempt should be made to minimize the number of x-rays taken for workers. The attending doctor or any other person or institution having possession of x-rays which pertain to the injury and are deemed to be needed for diagnostic or treatment purposes should make these x-rays available upon request.

The department or self-insurer will not authorize or pay for additional x-rays when recent x-rays are available except when presented with adequate information regarding the need to re-x-ray.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-145, filed 8/1/93, effective 9/1/93.]

PATHOLOGY

WAC 296-23-155 Pathology general information and instructions. (1) Rules and billing procedures pertaining to all practitioners rendering service to workers are presented in general information section beginning with WAC 296-20-010.

(2) Refer to WAC 296-20-132 and 296-20-135 for information regarding use of the conversion factors.

(3) Refer to the fee schedules for information on use of coding modifiers.

(4) Billing codes, reimbursement levels, and supporting policies are listed in the fee schedules.

(5) The reimbursement levels listed in the fee schedules apply only when the services are performed by or under the responsible supervision of a physician. Unless otherwise specified, the listed values include the collection and handling of the specimens by the laboratory performing the procedure. SERVICES IN PATHOLOGY AND LABORATORY are provided by the pathologist or by technologists under responsible supervision of a physician.

(6) Laboratory procedures performed by other than the billing physician shall be billed at the value charged that physician by the reference (outside) laboratory under the individual procedure number or the panel procedure number listed under "PANEL OR PROFILE TESTS" (see modifier -90).

(7) The department or self-insurer may deny payment for lab procedures which are determined to be excessive or unnecessary for management of the injury or conditions.

(8) Separate or multiple procedures: It is appropriate to designate multiple procedures that are rendered on the same date by separate entries.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-14-044, § 296-23-155, filed 6/29/94, effective 7/30/94; 93-16-072, § 296-23-155, filed 8/1/93, effective 9/1/93.]

DENTAL

WAC 296-23-160 General information and instructions. (1) The department or self-insurer is responsible only for repair or replacement of teeth injured or prosthodontics broken as a result of an industrial injury.

(2) Information pertaining to industrial claims is explained in WAC 296-20-010.

(3) Information pertaining to reports of accident is outlined in WAC 296-20-025.

(4) Information pertaining to the care of workers is explained in WAC 296-20-110.

(5) An estimate of cost is not needed prior to authorization of dental work unless indicated due to the extensive nature of the dental work. The department or self-insurer reserves the right to review all charges billed.

(6) Billing instructions are listed in WAC 296-20-125. Bills for services must be itemized, specifying tooth numbers and materials used. No services will be paid on rejected or closed claims except those rendered in conjunction with a reopening application.

(7) Billing codes, billing modifiers, reimbursement levels, and supporting policies are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-160, filed 8/1/93, effective 9/1/93.]

MISCELLANEOUS SERVICES AND APPLIANCES

WAC 296-23-165 Miscellaneous services and appliances. (1) The department or self-insurer will reimburse for certain medically necessary miscellaneous services and items needed as a result of an industrial accident. Nursing care, attendant care, transportation, hearing aids, eyeglasses, orthotics and prosthetics, braces, medical supplies, oxygen systems, walking aids, and durable medical equipment are included in this classification.

(a) When a fee maximum has been established, the rate of reimbursement for miscellaneous services and items will be the supplier's usual and customary charge or the department's current fee maximum, whichever is less. In no case may a supplier or provider charge a worker the difference between the fee maximum and their usual and customary charge.

(b) When the department or self-insurer has established a purchasing contract with a qualified supplier through an open competitive request for proposal process, the department or self-insurer will require that workers obtain specific groups of items from the contractor. When items are obtained from a contractor, the contractor will be paid at the rates established in the contract. When a purchasing contract for a selected group of items exists, suppliers who are not named in the contract will be denied reimbursement if they provide a contracted item to a worker. The noncontracting supplier, not the worker, will be financially responsible for

providing an item to a worker when it should have been supplied by a contractor. This rule may be waived by an authorized representative of the department or self-insurer in special cases where a worker's attending doctor recommends that an item be obtained from another source for medical reasons or reasons of availability. In such cases, the department may authorize reimbursement to a supplier who is not named in a contract. Items or services may be provided on an emergency basis without prior authorization, but will be reviewed for appropriateness to the accepted industrial condition and medical necessity on a retrospective basis.

(2) The department or self-insurer will inform providers and suppliers of the selected groups of items for which purchasing contracts have been established, including the beginning and ending dates of the contracts.

(3) Prior authorization by an authorized representative of the department or self-insurer will be required for reimbursement of selected items and services which are provided to workers. Payment will be denied for selected items or services supplied without prior authorization. The supplier, not the worker, will be financially responsible for providing selected items or services to workers without prior authorization. In cases where a worker's doctor recommends rental or purchase of a contracted item from a supplier who lacks a contract agreement, prior authorization will be required.

The decision to grant or deny prior authorization for reimbursement of selected services or items will be based on the following criteria:

(a) The worker is eligible for coverage.

(b) The service or item prescribed is appropriate and medically necessary for treatment of the worker's accepted industrial condition.

(4) The decision to rent or purchase an item will be made based on a comparison of the projected rental costs of the item with its purchase price. An authorized representative of the department or self-insurer will decide whether to rent or purchase certain items provided they are appropriate and medically necessary for treatment of the worker's accepted condition. Decisions to rent or purchase items will be based on the following information:

(a) Purchase price of the item.

(b) Monthly rental fee.

(c) The prescribing doctor's estimate of how long the item will be needed.

(5) The department will review the medical necessity, appropriateness, and quality of items and services provided to workers.

(6) The department's STATEMENT FOR MISCELLANEOUS SERVICES form or electronic transfer format specifications must be used for billing the department for miscellaneous services, equipment, supplies, appliances, and transportation. Bills must be itemized according to instructions in WAC 296-20-125 and the department or self-insurer's billing instructions. Bills for medical appliances and equipment must include the type of item, manufacturer name, model name and number, and serial number.

(7) All miscellaneous materials, supplies and services must be billed using the appropriate HCPCS Level II codes and billing modifiers. HCPCS codes are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-165, filed 8/1/93, effective 9/1/93.]

WAC 296-23-170 Nursing services and attendant care. Refer to WAC 296-20-132 and 296-20-135 for information regarding use of the conversion factors.

See WAC 296-20-091 for qualifications.

The codes and fees for home nursing services and attendant care are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-170, filed 8/1/93, effective 9/1/93.]

WAC 296-23-175 Stimulators. For qualifications regarding prior authorization and billing of stimulators refer to chapter 296-23 WAC (Miscellaneous services and appliances), WAC 296-20-1102, and 296-20-125.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-175, filed 8/1/93, effective 9/1/93.]

WAC 296-23-180 Vehicle and home modification. Requires prior approval from the assistant director for industrial insurance.

8914H Home modification
8915H Vehicle modification

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-180, filed 8/1/93, effective 9/1/93.]

WAC 296-23-185 Drug and alcohol rehabilitation services. Authorization requirements for these services may be found in WAC 296-20-03001 and 296-20-055.

0141M Intake evaluation
0142M Physical examination
0143M Individual therapy, routine visit
0144M Individual therapy, brief visit
0145M Group therapy
0146M Chemotherapy
0147M Medication adjustment
0149M Detoxification facility (room & board)

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-185, filed 8/1/93, effective 9/1/93.]

CHIROPRACTIC

WAC 296-23-190 General instructions—Chiropractic. (1) Refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to treatment of workers.

(2) Refer to WAC 296-20-132 and 296-20-135 for information regarding use of the conversion factors.

Use the radiology codes and conversion factors to bill radiology procedures.

(3) In addition to the rules found in WAC 296-20-010 through 296-20-125, the following rules apply when chiropractic treatment is being rendered:

(a) No more than one chiropractic adjustment per day will be authorized or paid, except on the initial and next two subsequent visits. The attending doctor must submit a detailed report regarding the need for the additional treatment.

(b) Treatment beyond the first twenty treatments or sixty days, whichever comes first, will not be authorized without submission of a consultation report or a comprehensive comparative exam report regarding need for further care. (See WAC 296-20-051 re: Consultation.)

(c) If needed, x-rays immediately prior to and immediately following the initial chiropractic treatment may be allowed without prior authorization.

(d) X-rays before and after subsequent chiropractic treatment will not be paid unless previously authorized. Prior authorization must be obtained for x-rays subsequent to the initial treatment.

(e) No payment will be made for excessive or unnecessary x-rays taken on initial or subsequent visits.

(f) No services or x-rays will be paid on rejected or closed claims except those rendered in conjunction with a reopening application.

(g) See chapter 296-23 WAC for custody requirements for x-rays.

(h) Treatment as a maintenance or supportive measure will not be authorized nor paid.

(4) Billing procedures itemized in WAC 296-20-125 must be followed.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-190, filed 8/1/93, effective 9/1/93.]

WAC 296-23-195 Chiropractic consultations. See WAC 296-20-035, 296-20-045, and 296-20-051 for rules pertaining to consultation.

Chiropractic consultation requires prior notification to the department or self-insurer. Consultants must be from an approved list of chiropractic consultants.

The codes and reimbursement levels for chiropractic consultations services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-195, filed 8/1/93, effective 9/1/93.]

NATUROPATHIC PHYSICIANS

WAC 296-23-205 General instructions—Naturopathic physicians. (1) Refer to WAC 296-20-010 through 296-20-125 regarding general rules and billing procedures.

(2) Refer to WAC 296-20-132 and 296-20-135 regarding the use of conversion factors.

(3) In addition to general rules found in WAC 296-20-010 through 296-20-125, the following rules apply to naturopathic physicians:

(a) If the naturopathic physician is dual licensed, all treatment rendered by the practitioner must be billed as "treatment of the day." Further, the practitioner must elect and notify the department or self-insurer, which type of treatment he is providing for the injured worker, and abide by rules pertaining to area of elected treatment.

(b) Naturopathic physicians utilizing hydro-; mechano-; and/or electro- therapy modalities cannot bill for those services in addition to office visit services. Office visit includes treatment of the day.

(c) No more than one office visit will be allowed per day, except on the initial and next two subsequent visits. The attending doctor must submit a detailed report regarding the need for the additional treatment.

(d) If necessary, x-rays may be taken immediately prior to and following the initial naturopathic physician treatment without prior authorization.

(e) X-rays immediately prior to and following each subsequent naturopathic physician treatment will be disallowed, unless previously authorized.

(f) Prior authorization must be obtained for x-rays subsequent to initial treatment.

(g) Payment will not be made for excessive or unnecessary x-rays. No payment will be made for x-rays taken on rejected or closed claims, except those taken in conjunction with a reopening application.

(h) See chapter 296-23 WAC for custody requirements for x-rays.

(4) Drugless therapy as a maintenance or supportive measure will not be authorized or paid.

(5) Treatment beyond the first twenty treatments or sixty days, whichever occurs first, will not be authorized without submission of a consultation report or a comprehensive comparative exam report regarding need for further care.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-205, filed 8/1/93, effective 9/1/93.]

WAC 296-23-210 Chiropractic office visits and special services.

DEFINITIONS:

Routine office visit: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and exam, i.e.:

(1) Palpation, exam, and adjustment of one or more areas.

(2) Brief exam and no adjustment.

Extended office visit: A level of service pertaining to an evaluation of patient with a new or existing problem requiring a detailed history, review of records, exam, and a formal conference with patient or family to evaluate and/or adjust therapeutic treatment management and progress.

Comprehensive office visit: A level of service pertaining to an indepth evaluation of a patient with a new or existing problem, requiring development or complete reevaluation of treatment data; includes recording of chief complaints and present illness, family history, past treatment history, personal history, system review; and a complete exam to evaluate and determine appropriate therapeutic treatment management and progress.

REPORTING:

Reporting requirements are outlined in WAC 296-20-06101. The department or self-insurer will accept a brief narrative report of treatment received and the patient's progress as supporting documentation for billings in lieu of routine follow-up office notes.

CHIROPRACTIC MODIFIERS:

-22 UNUSUAL SERVICES: When treatment services provided are greater than that usually required for listed procedures. Use of this modifier must be based on the injured worker's need for extended or unusual care. A report is required; the modifier -22 should be added to the procedure number.

-52 REDUCED SERVICES: Under certain circumstances no treatment may be given, in these cases the procedure should be reduced and modifier -52 should be added to the procedure number.

MATERIAL SUPPLIED BY DOCTOR:

Department or self-insurer will reimburse the doctor for materials supplied, i.e., cervical collars, heel lifts, etc., at cost only. See RCW 19.68.010, professional license statutes.

Materials and supplies must be billed using the appropriate HCPCS Level II codes. Refer to chapter 296-21 WAC for additional information.

SPECIAL SERVICES:

The following services are generally part of the basic services listed in the maximum fee schedule but do involve additional expenses to the chiropractor for materials, for his time or that of his employees. These services are generally provided as an adjunct to common chiropractic services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

The codes and reimbursement levels for chiropractic services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-210, filed 8/1/93, effective 9/1/93.]

WAC 296-23-215 Office visits and special services—Naturopathic physicians. Definitions:

Routine office visit: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and exam.

Extended office visit: A level of service pertaining to an evaluation of patient with a new or existing problem requiring a detailed history, review of records, exam, and a formal conference with patient or family to evaluate and/or adjust therapeutic treatment management and progress.

Comprehensive office visit: A level of service pertaining to an indepth evaluation of a patient with a new or existing problem, requiring development or complete reevaluation of treatment data; includes recording of chief complaints and present illness, family history, past treatment history, personal history, system review; and a complete exam to evaluate and determine appropriate therapeutic treatment management and progress.

Reporting:

Reporting requirements are outlined in WAC 296-20-06101. The department or self-insurer will accept a brief narrative report of treatment received and the patient's progress as supporting documentation for billings in lieu of routine follow-up office notes.

Modifiers:

-22 Unusual services: When treatment services provided are greater than that usually required for listed procedures. Use of this modifier must be based on the injured worker's need for extended or unusual care. A report is required. The modifier -22 should be added to the procedure number.

-52 Reduced services: Under certain circumstances no treatment may be given, in these cases the procedure should be reduced by ten units and modifier -52 should be added to the procedure number.

Material supplied by doctor:

Department or self-insurer will reimburse the doctor for materials supplied, i.e., cervical collars, heel lifts, etc., at cost only. See RCW 19.68.010, professional license statutes.

All supplies and materials must be billed using HCPCS Level II codes as listed in the fee schedules.

The codes and reimbursement levels are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-215, filed 8/1/93, effective 9/1/93.]

PHYSICAL THERAPY

WAC 296-23-220 Physical therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of workers.

Refer to WAC 296-20-132 and 296-20-135 regarding the use of conversion factors.

All supplies and materials must be billed using HCPCS Level II codes. Refer to chapter 296-21 WAC for additional information. HCPCS codes are listed in the fee schedules.

Refer to chapter 296-20 WAC (WAC 296-20-125) and to the department's billing instructions for additional information.

Physical therapy treatment will be reimbursed only when ordered by the worker's attending doctor and rendered by a licensed physical therapist or a physical therapist assistant serving under the direction of a licensed physical therapist. Doctors rendering physical therapy should refer to WAC 296-21-095.

The department or self-insurer will review the quality and medical necessity of physical therapy services provided to workers. Practitioners should refer to WAC 296-20-01002 for the department's rules regarding medical necessity and to WAC 296-20-024 for the department's rules regarding utilization review and quality assurance.

The department or self-insurer will pay for a maximum of one physical therapy visit per day. When multiple treatments (different billing codes) are performed on one day, the department or self-insurer will pay either the sum of the individual fee maximums, the provider's usual and customary charge, or $63.65, whichever is less. These limits will not apply to physical therapy that is rendered as part of a physical capacities evaluation, work hardening program, or pain management program, provided a qualified representative of the department or self-insurer has authorized the service.

The department will publish specific billing instructions, utilization review guidelines, and reporting requirements for physical therapists who render care to workers.

Use of diapulse or similar machines on workers is not authorized. See WAC 296-20-03002 for further information.

A physical therapy progress report must be submitted to the attending doctor and the department or the self-insurer following twelve treatment visits or one month, whichever occurs first. Physical therapy treatment beyond initial twelve treatments will be authorized only upon substantiation of improvement in the worker's condition. An outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

Physical therapy services rendered in the home and/or places other than the practitioner's usual and customary office, clinic, or business facilities will be allowed only upon prior authorization by the department or self-insurer.

No inpatient physical therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

The department may discount maximum fees for treatment performed on a group basis in cases where the treatment provided consists of a nonindividualized course of therapy (e.g., pool therapy; group aerobics; and back classes).

Biofeedback treatment may be rendered on doctor's orders only. The extent of biofeedback treatment is limited to those procedures allowed within the scope of practice of a licensed physical therapist. See chapter 296-21 WAC for rules pertaining to conditions authorized and report requirements.

Billing codes and reimbursement levels are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-02-045, § 296-23-220, filed 12/30/93, effective 3/1/94; 93-16-072, § 296-23-220, filed 8/1/93, effective 9/1/93.]

WAC 296-23-225 Work hardening. The department will publish billing instructions, reimbursement limits, quality assurance standards, utilization review guidelines, admission criteria, outcome criteria, measures of effectiveness, minimum staffing levels, certification requirements, special reporting requirements, and other criteria that will ensure workers receive good quality services at cost-effective payment levels. Providers will be required to meet the department's requirements in order to qualify as a work hardening provider. The department may also establish a competitive or other appropriate selection process for work hardening providers. Providers should refer to WAC 296-20-12050 regarding special programs.

Billing codes and reimbursement levels are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-225, filed 8/1/93, effective 9/1/93.]

OCCUPATIONAL THERAPY

WAC 296-23-230 Occupational therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of workers.

Refer to WAC 296-20-132 and 296-20-135 for information regarding the conversion factors.

All supplies and materials must be billed using HCPCS Level II codes, refer to the department's billing instructions for additional information.

Occupational therapy treatment will be reimbursed only when ordered by the worker's attending doctor and rendered by a licensed occupational therapist or an occupational therapist assistant serving under the direction of a licensed occupational therapist. Vocational counselors assigned to injured workers by the department or self-insurer may request an occupational therapy evaluation. However, occupational therapy treatment must be ordered by the worker's attending doctor.

An occupational therapy progress report must be submitted to the attending doctor and the department or self-insurer following twelve treatment visits or one month, whichever occurs first. Occupational therapy treatment beyond the initial twelve treatments will be authorized only upon substantiation of improvement in the worker's condition. An outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

The department or self-insurer will review the quality and medical necessity of occupational therapy services. Practitioners should refer to WAC 296-20-01002 for the department's definition of medically necessary and to WAC 296-20-024 for the department's rules regarding utilization review and quality assurance.

The department will pay for a maximum of one occupational therapy visit per day. When multiple treatments (different billing codes) are performed on one day, the department or self-insurer will pay either the sum of the individual fee maximums, the provider's usual and customary charge, or $63.65 whichever is less. These limits will not apply to occupational therapy which is rendered as part of a physical capacities evaluation, work hardening program, or pain management program, provided a qualified representative of the department or self-insurer has authorized the service.

The department will publish specific billing instructions, utilization review guidelines, and reporting requirements for occupational therapists who render care to workers.

Occupational therapy services rendered in the worker's home and/or places other than the practitioner's usual and customary office, clinic, or business facility will be allowed only upon prior authorization by the department or self-insurer.

No inpatient occupational therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

The department may discount maximum fees for treatment performed on a group basis in cases where the treatment provided consists of a nonindividualized course of therapy (e.g., pool therapy; group aerobics; and back classes).

Billing codes, reimbursement levels, and supporting policies for occupational therapy services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-02-045, § 296-23-230, filed 12/30/93, effective 3/1/94; 93-16-072, § 296-23-230, filed 8/1/93, effective 9/1/93.]

WAC 296-23-235 Work hardening. The department will publish billing instructions, reimbursement limits, quality assurance standards, utilization review guidelines, admission criteria, outcome criteria, measures of effectiveness, minimum staffing levels, certification requirements, special reporting requirements, and other criteria that will ensure workers receive good quality services at cost-effective payment levels. Providers will be required to meet the department's requirements in order to qualify as a work hardening provider. The department may also establish a competitive or other appropriate selection process for work hardening providers. Providers should refer to WAC 296-20-12050 regarding special programs.

Billing codes, reimbursement levels, and supporting policies for work hardening services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-235, filed 8/1/93, effective 9/1/93.]

NURSING

WAC 296-23-240 Licensed nursing rules. (1) Registered nurses and licensed practical nurses may perform private duty nursing care in industrial injury cases when the attending physician deems this care necessary. Registered nurses may be reimbursed for services as outlined by department policy. (See chapter 296-20 WAC for home nursing rules.)

(2) Advanced registered nurse practitioners (ARNPs) may perform advanced and specialized levels of nursing care on a fee for service basis in industrial injury cases within the limitations of this section. ARNPs may be reimbursed for services as outlined by department policy.

(3) In order to treat workers under the Industrial Insurance Act, the advanced registered nurse practitioner must be:

(a) Recognized by the Washington state board of nursing or other government agency as an advanced registered nurse practitioner (ARNP). For out-of-state nurses an equivalent title and training may be approved at the department's discretion.

(b) Capable of providing the department with evidence and documentation of a reliable and rapid system of obtaining physician consultations.

(4) Billing procedures outlined in the medical aid rules and fee schedules apply to all nurses.

(5) Advanced registered nurse practitioners cannot sign accident report forms or time loss cards.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93- 16-072, § 296-23-240, filed 8/1/93, effective 9/1/93.]

WAC 296-23-245 Licensed nursing billing instructions. (1) Registered nurses may be required to obtain provider account numbers from the department as outlined by department policy.

(2) Advanced registered nurse practitioners must obtain provider account numbers from the department.

(3) Refer to WAC 296-20-132 and 296-20-135 for information regarding the conversion factors.

(4) Refer to the department's billing instructions for additional information.

(5) Services performed by advanced registered nurse practitioners must be billed using the appropriate procedure code number listed in the fee schedules preceded by a Type of Service Code "N." The rate of reimbursement for the services billed by advanced registered nurse practitioners will be ninety percent of the value listed in the fee schedules.

(6) Refer to chapter 296-20 WAC (home nursing care) and chapter 296-23 WAC (miscellaneous services) for rules regarding reimbursement for home attendant care.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-245, filed 8/1/93, effective 9/1/93.]

WAC 296-23-250 Massage therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of workers. See WAC 296-20-125 for billing instructions.

Refer to WAC 296-20-132 and 296-20-135 for information regarding use of the conversion factors.

Massage therapy treatment will be permitted when given by a licensed massage practitioner only upon written orders from the worker's attending doctor.

A progress report must be submitted to the attending doctor and the department or the self-insurer following six treatment visits or one month, whichever comes first. Massage therapy treatment beyond the initial six treatments will be authorized only upon substantiation of improvement in the worker's condition in terms of functional modalities, i.e., range of motion; sitting and standing tolerance; reduction in medication; etc. In addition, an outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

Massage therapy in the home and/or places other than the practitioners usual and customary business facilities will be allowed only upon prior justification and authorization by the department or self-insurer.

No inpatient massage therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

Massage therapy treatments exceeding once per day must be justified by attending doctor.

Billing codes, reimbursement levels, and supporting policies for massage therapy services are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-250, filed 8/1/93, effective 9/1/93.]

WAC 296-23-255 Independent medical examinations. (1) Purpose:

Independent medical examinations may be requested by the department, the self-insurer, or the attending physician; this is usually for one of the following purposes:

(a) To establish a diagnosis. Prior diagnoses may be controversial or ill-defined;

(b) To outline a program of rational treatment, where treatment or progress is controversial;

(c) To establish medical data from which it may be determined whether the medical condition is industrially acquired, or unrelated to industrial work activities;

(d) To determine the extent and duration of aggravation of a preexisting medical condition by an industrial injury or exposure;

(e) To establish when the accepted medical condition has reached maximum benefit from treatment;

(f) To establish a percentage rating of any permanent disability, based on the loss of body function or the category rating when maximum recovery is reached; or

(g) To determine the medical indications for reopening of a claim for further treatment on the basis of aggravation of an accepted condition, based on objective findings.

(2) Workers who are scheduled for independent medical examinations are allowed to bring with them an accompanying person to be present during the physical examination. The accompanying person cannot be compensated in any manner, except that language interpreters may be necessary for the communication process and may be reimbursed for interpretative services.

The department may designate those conditions under which the accompanying person is allowed to be present during the independent medical examination process.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-255, filed 8/1/93, effective 9/1/93.]

WAC 296-23-260 Examination reports. (1) It is the department's intention to purchase objective examinations to ensure that sure and certain determinations are made of all benefits to which the injured worker might be entitled.

The report of an independent medical examination must include the following items:

(a) A detailed chronology of the injury or condition including mechanism of injury, diagnostic studies, and treatments attempted. The chronology must mention the results of treatments and diagnostic studies;

(b) An opinion as to whether treatment actual or proposed is or will be curative or palliative in nature;

(c) An assessment of whether the condition is industrially caused, on a more probable than not basis;

(d) Specific diagnoses sorted into the following categories:

(i) The accepted condition;

(ii) Preexisting conditions, and a statement as to whether they are worsening on their own or are aggravated by the accepted industrially acquired condition; and

(iii) Conditions acquired after the industrial injury.

(e) Answers to written questions posed by adjudicators, or a description of what would be needed to address the questions; and

(f) Conclusions and a summary statement of the objective medical findings upon which the conclusions are based.

(2) Disability ratings are to be done as specified in WAC 296-20-210.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-260, filed 8/1/93, effective 9/1/93.]

WAC 296-23-265 Independent medical examinations examiner. (1) Independent medical examinations must be performed in accordance with WAC 296-20-200 by examiners approved by the department and licensed to perform medicine and surgery, osteopathic medicine and surgery, podiatric medicine and surgery, or dentistry except:

(a) Attending physicians licensed to perform medicine and surgery, osteopathic medicine and surgery, podiatric medicine and surgery, or dentistry may perform an impairment rating examination for a worker under their care at the direction of the state fund or self-insurer.

(b) The independent medical examination may be performed by a board certified specialist licensed to perform medicine and surgery, osteopathic medicine and surgery, podiatric medicine and surgery, or dentistry selected by the department or the self-insurer if the worker does not live in Washington, Oregon, or Idaho.

(c) The independent medical examination may be performed by a treating physician in a department approved chronic pain management program accredited by the commission on accreditation of rehabilitation facilities. The examiner must be licensed to perform medicine and surgery, osteopathic medicine and surgery, podiatric medicine and surgery, or dentistry.

(2) All other examiners who wish to do independent medical examinations of workers under Title 51 RCW, whether purchased by the department or self-insurers, must:

(a) Submit a completed department application to the medical director at the department of labor and industries; and

(b) Receive the medical director's approval to be an "approved examiner."

(3) Approved examiners will be listed on the department's approved examiners list. Examiners may be suspended or removed from the approved examiners list by the medical director. Such examiners shall not receive worker referrals from the department or self-insurers.

(4) The factors the medical director may consider in approving or disapproving or suspending examiners include, but are not limited to, any one or a combination of the following:

(a) Board certification;

(b) Complaints from workers about the conduct of the examiner;

(c) Disciplinary proceedings or actions;

(d) Experience in direct patient care in the area of specialty;

(e) Ability to effectively convey and substantiate medical opinions and conclusions concerning workers;

(f) Quality and timeliness of reports; and

(g) Geographical need of the department and self-insurer.

(5) Examiners must be available and willing to testify at the department fee schedule rate on behalf of the department, worker, or employer.

(6) Complaints from workers about examiner conduct during an independent medical examination must be promptly forwarded from self-insurer and department staff to the office of the medical director.

(7) The standards for independent medical examiners, the application for approved examiner status and maximum fee schedule for performing examinations are published in a medical examiners' handbook available from the Office of the Medical Director, Department of Labor and Industries, Olympia, WA 98504.

(8) Fees for independent medical examinations are determined by the dollar value published in the medical examiners' handbook.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-265, filed 8/1/93, effective 9/1/93.]

WAC 296-23-270 Independent medical examinations two or more examiners. Providers who wish to offer independent medical examinations by two or more examiners must apply for a panel provider number and meet standards set by the medical director of the department. Examiners working through panels must be on the approved list.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23-270, filed 8/1/93, effective 9/1/93.]

Chapter 296-23A WAC
HOSPITALS

WAC

HOSPITAL RULES

HOSPITAL OUTPATIENT RADIOLOGY

HOSPITAL OUTPATIENT PATHOLOGY AND LABORATORY

HOSPITAL OUTPATIENT PHYSICAL THERAPY

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-23A-240 Head and neck. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-240, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-240, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-240, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-240, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-242 Chest. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-242, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-242, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-242, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-242, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-244 Spine and pelvis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-244, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-244, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-244, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-244, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-244, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-246 Upper extremities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-246, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-246, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-246, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-246, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-246, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-248 Lower extremities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-248, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-248, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-248, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-248, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-250 Abdomen. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-250, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-250, filed 3/8/91, effective 5/1/91; 87-03-005 (Order 86-47), § 296-23A-250, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-252 Gastrointestinal tract. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-252, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-252, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-252, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-252, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-252, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-254 Urinary tract. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-254, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-254, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-254, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-254, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-254, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-256 Gynecological and obstetrical. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-256, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-256, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-256, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-256, filed 7/23/87;

87-03-005 (Order 86-47), § 296-23A-256, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-258 Vascular system. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-258, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-258, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-258, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-258, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-258, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-260 Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-260, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-260, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-260, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-260, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-260, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-262 Diagnostic ultrasound. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-262, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-262, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-262, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-262, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-262, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-264 Therapeutic radiology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-264, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-264, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-264, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-264, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-266 Nuclear medicine. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-266, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-266, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-266, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-266, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-266, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-268 Therapeutic. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-268, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-268, filed 3/8/91, effective 5/1/91; 87-03-005 (Order 86-47), § 296-23A-268, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-325 Panel or profile tests. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-325, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-325, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-325, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-325, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-325, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-330 Urinalysis. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-330, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-330, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-330, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-330, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-335 Chemistry and toxicology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-335, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-335, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-335, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-335, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-335, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-340 Hematology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-340, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-340, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-340, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-340, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-340, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-345 Immunology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-345, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-345, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-345, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-345, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-345, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-350 Microbiology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-350, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-350, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-350, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-350, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-355 Cytopathology. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-355, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-355, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-355, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-355, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-355, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-360 Miscellaneous. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-360, filed 12/1/92, effective 1/1/93; 91-07-008, § 296-23A-360, filed 3/8/91, effective 5/1/91; 89-17-039 (Order 89-09), § 296-23A-360, filed 8/10/89, effective 9/10/89; 87-16-004 (Order 87-18), § 296-23A-360, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-360, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-410 Muscle testing. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-410, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-415 Modalities. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-415, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-420 Procedures. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-420, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

296-23A-425 Tests and measurements. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-23A-425, filed 8/16/91, effective 9/30/91; 87-16-004 (Order 87-18), § 296-23A-425, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-425, filed 1/8/87.] Repealed by 93-16-072, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159.

HOSPITAL RULES

WAC 296-23A-100 General information. Hospital services will be paid when necessary for treatment of the accepted industrial illness or injury. General information and rules pertaining to the care of workers are explained in chapter 296-20 WAC.

To avoid a delay in paying hospital bills be sure the claim number is listed in the space provided on the bill form. If the department's accident report form is completed at the hospital, then a preassigned claim number will be on the form. In other circumstances, the hospital may not be able to obtain the claim number from the injured worker or the attending physician prior to hospitalization and/or outpatient services. When this occurs, contact the local service location or call the department's provider toll-free line in Olympia. Self-insurers may be contacted directly to obtain claim numbers on self-insured claims.

Do not substitute the date of injury with either the date of admission or the date of service.

We urge you to submit bills to the department or self-insurer on a monthly basis.

The department or self-insurer will pay hospital inpatient charges for bed rest, physical therapy and/or administration of injectable drugs only under the conditions specified in WAC 296-20-075.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-100, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-16-004 (Order 87-18), § 296-23A-100, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-100, filed 1/8/87.]

WAC 296-23A-105 Payment for hospital inpatient and outpatient services. Effective February 1, 1988, the department or self-insurer pays for hospital inpatient services using either prospectively determined diagnosis related group per case rates or allowed charges multiplied by a percent of allowed charges factor according to WAC 296-23A-106. Payment for hospital inpatient rates may be established in consultation with interested persons. Hospital inpatient rates may be updated on July 1 of each year using an adjustment factor based on changes in average state wage as defined in RCW 50.04.355 and 51.08.018. Hospital inpatient rates may be rebased at times determined by the department. Hospital outpatient radiology, pathology and laboratory, and physical therapy services which do not occur within one day of an inpatient admission are to be billed and will be paid using the appropriate labor and industries outpatient fee schedule procedure codes. Effective January 1, 1988, hospital outpatient services which are not billed and paid using the hospital outpatient fee schedule will be paid a percent of allowed charges.

All hospital inpatient and outpatient services and billed charges are subject to review by the department or a representative chosen by the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-105, filed 12/1/92, effective 1/1/93; 87-24-050 (Order 87-23), § 296-23A-105, filed 11/30/87, effective 1/1/88; 87-03-005 (Order 86-47), § 296-23A-105, filed 1/8/87.]

WAC 296-23A-106 Reimbursement for inpatient services by per case rates and percentage of allowed charges. Certain admissions are paid using diagnostic related group (DRG) per case rates. For those inpatient services using a DRG payment system, per case rates are calculated from case-mix adjusted historical per case costs. Each DRG is assigned a relative weight based on the average cost of the DRG relative to total costs across all DRGs. Per case costs are indexed to the payment period for inflation and other factors. Cases which qualify as low-cost and high-cost outlier pursuant to WAC 296-23A-170 are excluded from calculation of the DRG rates. The DRG per case rates are communicated to interested persons in a departmental bulletin.

For those inpatient services not paid by per case DRG rates, hospitals are reimbursed using a hospital-specific percentage of allowed charges (POAC) factor. POAC factors are calculated as total operating expenses, as defined by the department of health, plus adjustments, divided by total revenue as defined by the department of health. Reimbursement rates are calculated by multiplying the POAC rate by the allowed charges. Each hospital will be notified of their revised POAC factor prior to implementation. Inaccurate computations can be appealed in accordance with WAC 296-23A-190.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-106, filed 12/1/92, effective 1/1/93.]

WAC 296-23A-110 Hospital outpatient fee schedule information. The maximum allowable fees for hospital outpatient radiology, pathology, laboratory, and physical therapy services are listed in the fee schedule. Only those providers who are approved by the department will be reimbursed for services rendered. Refer to chapter 296-20 WAC for additional information.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-110, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-110, filed 1/8/87.]

WAC 296-23A-115 Hospital outpatient services conversion factors. Refer to WAC 296-20-132 and 296-20-135 for information on the conversion factor to be used with hospital outpatient services.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-115, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-02-063, § 296-23A-115, filed 12/28/90, effective 1/28/91; 88-24-011 (Order 88-28), § 296-23A-115, filed 12/1/88, effective 1/1/89; 87-03-005 (Order 86-47), § 296-23A-115, filed 1/8/87.]

WAC 296-23A-120 Questionable eligibility. It is the responsibility of the hospital to try to determine at the time of admission or outpatient service(s) if the injured worker is covered under the Industrial Insurance Act for an allowable industrial illness or injury as stated in the medical aid rules and maximum fee schedules.

In cases of questionable eligibility for an industrial illness or injury, where the hospital has billed the injured worker or other insurance, and the claim is subsequently allowed, the hospital must make a full refund to the injured worker or other insurer and bill the department or self-insurer for services rendered.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-120, filed 1/8/87.]

WAC 296-23A-125 Refund of incorrect payments. When the department or self-insurer has paid a hospital billing and it is later determined that the service performed was not the responsibility of the department or self-insurer, then it is the hospital's responsibility to refund the department. The department or self-insurer will deduct the incorrect payments from future hospital payments if the hospital does not refund.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-125, filed 1/8/87.]

WAC 296-23A-130 Treatment of unrelated illness or injury. Treatment or surgery for an unrelated illness or injury, while the worker is hospitalized or receiving hospital outpatient services, is not usually allowed. When such unrelated treatment is permitted by the department or self-insurer, the requesting physician must identify which services are needed due to the industrial illness or injury and which are needed due to the unrelated condition(s). Diagnostic tests and/or treatment for unrelated conditions directly affecting recovery from the industrial illness or injury may be given consideration as stated under chapter 296-20 WAC.

Diagnostic tests and studies ordered by the attending physician as a part of the initial care and diagnosis of an industrial injury will be allowed.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-130, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-130, filed 1/8/87.]

WAC 296-23A-135 Closed claims. The department or self-insurer will not pay for services rendered after the claim has been closed. If responsibility is later accepted by the department or self-insurer, WAC 296-23A-120 will apply.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-135, filed 1/8/87.]

WAC 296-23A-140 Take-home Rx's. Take-home prescriptions will be authorized upon discharge of the patient or completion of hospital outpatient services if the medication is necessary for the industrial illness or injury.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-140, filed 1/8/87.]

WAC 296-23A-145 Routine laboratory procedures on admission. On admission of an industrially injured patient to a hospital, the department or the self-insurer will allow routine laboratory work-up consisting of a complete blood count or hematocrit, urinalysis, serology, and routine admission chemical screening procedure. Laboratory reports for the procedures accomplished must accompany the bill.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-145, filed 1/8/87.]

WAC 296-23A-150 Billing procedures. Bills for hospital services must be submitted on the current National Uniform Billing Form (billing form) or submitted electronically using department file format specifications. Providers using the billing form must follow the billing instructions provided by the Washington State Hospital Association. Providers using any of the electronic transfer options must follow department instructions for electronic billing in addition to instructions provided by the Washington State Hospital Association. Self-insurers may accept other bill forms.

(1) The following information must appear on the billing form for hospital inpatient services:

(a) Provider name, address, and telephone number;
(b) Patient control number;
(c) Type of bill;
(d) Federal tax number;
(e) Patient name;
(f) Birth date;
(g) Sex;
(h) Admission date;
(i) Admission hour;
(j) Type of admission;
(k) Source of admission;
(l) Condition code, when applicable;
(m) Patient status;
(n) Statement covers period;
(o) Date of injury;
(p) Revenue code;
(q) Revenue code description;
(r) Daily rate;
(s) Units;
(t) Total charges;
(u) Noncovered charges;
(v) Payer;
(w) Department provider number;
(x) Prior payments;
(y) Patient's Social Security number;
(z) Claim number;
(aa) Treatment authorization number;
(bb) Employer name;
(cc) Principle and other International Classification of Diseases (ICD) diagnosis codes when applicable (indicate side of body: R = right, L = left, and B = both sides of body);
(dd) Admitting diagnosis;
(ee) E code;
(ff) Principle and other ICD procedure codes when applicable;
(gg) Attending physician; and
(hh) Date billed.

Summarize inpatient charges by revenue codes as specified in the billing instructions.

(2) The following information must appear on the billing form for hospital **outpatient** services:

(a) Provider name, address, and telephone number;
(b) Patient control number;
(c) Type of bill;
(d) Federal tax number;
(e) Patient name;
(f) Birth date;
(g) Sex;
(h) Statement covers period;
(i) Date of injury;
(j) Revenue code;
(k) Revenue code description;

(l) Health Care Financing Administration Common Procedure Coding System (HCPCS) Level I codes, or other codes, as adopted by the department, for radiology, pathology and laboratory and physical therapy services;

(m) Units;

(n) Total charges;

(o) Noncovered charges;

(p) Payer;

(q) Department provider number;

(r) Prior payments;

(s) Patient's Social Security number;

(t) Claim number;

(u) Treatment authorization number, when applicable;

(v) Employer name;

(w) Principle and other ICD diagnosis codes when applicable (indicate side of body: R = right, L = left, and B = both sides of body);

(x) E code;

(y) Principle and other ICD procedure codes, when applicable;

(z) Attending physician; and

(aa) Date billed.

(3) Supporting documentation for inpatient and outpatient services must be sent to the department or self-insurer. When sending supporting documentation to the department, it should not be submitted along with the bill for services. Hospitals should instead send the supporting documentation to:

Department of Labor and Industries
Claims Section
PO Box 44291
Olympia, WA 98504-4291

Place the claim number on the upper right hand corner of each attachment. The information to be sent includes, but is not limited to the following:

(a) Admission history and physical examination;

(b) Discharge summary for stays over forty-eight hours;

(c) Emergency room reports; and

(d) Operative reports.

Providers using any of the electronic transfer options provided by the department must send the department the required documentation normally associated with a bill, within thirty calendar days of the date billing information was sent to the department on electronic mediums. Providers must comply with electronic billing instructions supplied by the department regarding the submission of hospital bill documentation. Place the claim number on the upper right hand corner of each supporting document submitted.

(4) For a bill to be considered for payment, it should be received by the department or self-insurer within one year from the date of service. Refer to chapter 296-20 WAC and to department policy for additional information.

(5) The department or the self-insurer may reject bills for services rendered in violation of the medical aid rules and maximum fee schedules.

(6) Charges for ambulance services and for professional services provided by hospital staff physicians must be submitted on the Health Insurance Claim Form, HCFA-1500. Hospitals using any of the electronic transfer options must follow department instructions for electronic billing in addition to department instructions for completing the Health Insurance Claim Form, HCFA-1500. The emergency room will be considered the office for those physicians providing regular emergency room care to the hospital, and fees will be allowed on this basis.

(7) Call-back services between 6 p.m. and 8 a.m., of surgical staff not normally on duty during this period of time, should be billed using the appropriate revenue codes.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-150, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 90-04-057, § 296-23A-150, filed 2/2/90, effective 3/5/90; 87-16-004 (Order 87-18), § 296-23A-150, filed 7/23/87; 87-03-005 (Order 86-47), § 296-23A-150, filed 1/8/87.]

WAC 296-23A-155 New hospitals. New hospitals are those entities which were not open for at least one year prior to the department's implementation of the latest diagnosis related group rates or percent of allowed charges factor for hospitals paid by the department. A change in ownership does not constitute the creation of a new hospital. If a hospital changes ownership, rates will be those payable to the previous owner.

Payment for services provided by new hospitals will be at the average diagnosis related group rates and average percent of allowed charges for the new hospital's peer group.

A new hospital will be paid using its hospital-specific percent of allowed charges factor within three years of receiving a provider number(s) from the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-24-050 (Order 87-23), § 296-23A-155, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-160 Excluded and included services. (1) Ambulance and air transportation services are excluded from the diagnosis related group payments.

(2) Preadmission services: Services performed in a hospital outpatient setting within one day prior to admission into the hospital must be billed as hospital inpatient services.

(3) Freestanding and distinct part psychiatric, rehabilitation, and substance abuse facilities as defined by the health care finance administration will be excluded from payment by diagnosis related group rates. These facilities will be paid a percent of allowed charges. The department may choose to exclude other freestanding and distinct part units from diagnosis related group rates.

(4) Bills which are coded as diagnosis related groups 000, 469, and 470 will be denied.

(5) Military, health maintenance organization (HMO), and children's hospitals will be paid their allowed charges.

(6) Bills which are coded as diagnosis related groups paid by the department, and are for hospital services where the injured worker has been admitted and discharged on the same day, will be reviewed by the department and may be paid as hospital outpatient services.

(7) All hospital services provided to an injured worker admitted to a hospital will be included in the diagnosis related group rates unless otherwise specified.

(8) Other hospitals, as determined by the department, may be excluded from diagnosis related group reimbursement rates due to access or case volume considerations. These facilities will be paid a percent of allowed charges.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-160, filed 12/1/92, effective 1/1/93; 87-24-050 (Order 87-23), § 296-23A-160, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-165 Out-of-state hospitals. (1) Hospitals not in Oregon, Idaho, or Washington will be paid a percent of allowed charges. The percent of allowed charges may differ for services performed in the inpatient and outpatient settings.

(2) Oregon and Idaho hospitals: Hospital outpatient radiology, pathology and laboratory, and physical therapy services are to be billed and will be paid using the appropriate labor and industries outpatient fee schedule procedure codes. Other hospital outpatient services will be paid a percent of allowed charges.

Hospital inpatient services will be paid a percent of allowed charges. The percent of allowed charges may differ for services performed in the inpatient and outpatient settings.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-24-050 (Order 87-23), § 296-23A-165, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-170 Outliers. (1) Outlier payments are for DRG reimbursed cases with unusually high or low costs. Outlier status will be granted to qualified diagnosis related groups cases paid by the department. Outlier status does not apply to cases paid by POAC.

(2) Qualification for high outlier status: To qualify as a high outlier under the diagnosis related groups payment system, the allowed charges for the case minus a dollar threshold must be greater than zero.

The dollar threshold is defined as the greater of two standard deviations above the state-wide average allowed charge for each diagnosis related group paid by the department or $9,000. The state-wide per case rates used to compute the standard deviations for the diagnosis related groups will be computed across all relevant cases in the historical data base excluding outliers.

(3) Qualification for low outlier status: To qualify as a low outlier, the allowed charges multiplied by that hospital's percent of allowed charges factor must be less than the greater of ten percent of the state-wide diagnosis related group rate or $200. The state-wide diagnosis related group rate will be computed across all relevant cases in the historical data base excluding outliers. Low outlier cases will be paid that hospital's inpatient percent of allowed charges factor multiplied by the allowed charges for the case.

(4) Payment: High and low outlier cases are paid by multiplying each hospital's specific POAC factor by the allowed charges.

(5) To have a bill considered for high outlier status, the hospital must enter "61" for the condition code, block 35 of the UB-82.

(6) Hospitals may also be required to submit the following information when requesting a high outlier:

(a) Physician's progress notes.

(b) Physician's orders.

(c) Nurse's notes.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-170, filed 12/1/92, effective 1/1/93; 90-04-057, § 296-23A-170, filed 2/2/90, effective 3/5/90; 87-24-050 (Order 87-23), § 296-23A-170, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-175 Interim bills. (1) An interim bill is defined as a bill which has a patient status code of 30 in block 21 of the UB-82.

(2) Interim bills which are assigned to diagnosis related groups paid per case by the department will be denied.

(3) If an interim bill is coded as a diagnosis related group not paid by the department, then the bill will be paid as a percent of allowed charges. If an interim bill is paid as a percent of allowed charges, and a subsequent bill coded as a diagnosis related group paid by the department for the same injured worker has a first date of service within seven days of the last date of service of the previous bill, then the bills will be subject to review by the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-24-050 (Order 87-23), § 296-23A-175, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-180 Readmissions. (1) Both bills for an injured worker who is readmitted within seven days of a previous discharge and for which at least one bill is coded as a diagnosis related group paid by the department will be subject to review by the department. Payment for services associated with these bills will depend on the review.

(2) Both bills for a readmitted worker involving different hospitals, and for which at least one bill is coded as a diagnosis related group paid by the department, will be reviewed by the department and may be paid using the payment method for transfers.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-24-050 (Order 87-23), § 296-23A-180, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-185 Transfers. (1) A transfer is defined as an admission to another acute care hospital within seven days of the previous discharge for the same injured worker. All transfers will be subject to review by the department and payment will be determined according to the department's interpretation of the review. The transferring hospital may qualify for high and low outlier status.

(2) When the stay at the transferring hospital is a diagnosis related group paid by the department and does not qualify as a low outlier, the transferring hospital is paid a per day rate for each day of care allowed by the department's review prior to the transfer. The per day rate is determined by dividing that hospital's rate for the appropriate diagnosis related group by that diagnosis related group's average length of stay determined by the department. If the case does not qualify as a high outlier, payment to the transferring hospital will not exceed the appropriate diagnosis related group rate that would have been paid had the injured worker not been transferred to another hospital.

(3) The receiving hospital in a transfer will be paid according to the department's review of the case. If the receiving hospital's stay is a diagnosis related group paid by the department, then the hospital will receive the appropriate per case and outlier payments. If the case is not a diagnosis related group paid by the department, then the hospital is paid a percent of allowed charges.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-24-050 (Order 87-23), § 296-23A-185, filed 11/30/87, effective 1/1/88.]

WAC 296-23A-190 Adjustment of rates. If a hospital can demonstrate to the department that its percent of

allowed charges factor has changed by more than ten percent over the percent of allowed charges factor currently applied to the hospital's rates, or that the POAC factor was inaccurately computed, the hospital can request review. To demonstrate to the department, that review is warranted, the hospital must use independently audited source data from the same time period for which the initial percent of allowed charges factor was calculated. If the department's review of the material submitted by the hospital results in a favorable determination for the hospital, the department will modify the hospital's percent of allowed charges factor.

The revised rates will apply to all bills with a date of admission on or after a date chosen by the department. The chosen date will be within four months of the agreement to modify between the hospital and the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 92-24-066, § 296-23A-190, filed 12/1/92, effective 1/1/93; 87-24-050 (Order 87-23), § 296-23A-190, filed 11/30/87, effective 1/1/88.]

HOSPITAL OUTPATIENT RADIOLOGY

WAC 296-23A-200 General information—Hospital outpatient radiology. Rules and billing procedures pertaining to all practitioners rendering services to workers are presented in the general instructions section beginning with WAC 296-20-010 and in department billing instructions. Some of the similarities are repeated here for the convenience of those hospitals referring to the radiology section. The procedure codes and maximum allowable fees for radiology services are listed in the fee schedules. Refer to WAC 296-20-132 and 296-20-135 regarding use of a conversion factor.

Radiology procedures and services must be performed by or under the supervision of a physician.

The department or self-insurer may deny payment for radiology procedures which are determined to be excessive or unnecessary for management of the accepted industrial illness or injury.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-200, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-200, filed 1/8/87.]

WAC 296-23A-205 Billing procedures. (1) Department billing instructions appear in chapter 296-20 WAC and in department policy. Hospital billing information and instructions appear in WAC 296-23A-100, 296-23A-105, and 296-23A-150.

(2) Hospitals are reimbursed only for the technical component at rates, listed in the fee schedules, or as determined by department policy.

(3) Hospitals should bill their usual and customary rates for the technical component of outpatient radiology services.

(4) Radiology procedures performed by other than the billing hospital shall be billed at the value charged the hospital by the reference (outside) radiology department. When possible, the service should be billed under the same procedure code as billed by the reference radiology department.

(5) "BR" in the unit value column indicates that the value of this service is to be determined by report (BR) because the service is too unusual, variable, or new to be assigned a unit value. The report should provide an adequate definition or description of the services or procedures as discussed in WAC 296-23A-235. Whenever possible, list the nearest similar procedure code according to this schedule. The department or self-insurer may adjust BR procedures when such action is indicated.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-205, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 91-17-038, § 296-23A-205, filed 8/16/91, effective 9/30/91; 89-17-039 (Order 89-09), § 296-23A-205, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-205, filed 1/8/87.]

WAC 296-23A-210 Injection procedures. Values for injection procedures include all usual preinjection and postinjection care specifically related to the injection procedure, necessary local anesthesia, placement of needle or catheter, and injection of contrast media.

Vascular injection procedures are listed in the cardiovascular section. Other injection procedures are listed in the appropriate sections.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-210, filed 1/8/87.]

WAC 296-23A-215 Responsibility for x-rays. (1) X-rays should not be sent to the department or self-insurer unless requested for comparison and interpretation in determining permanent disability, other administrative or legal decisions, and for cases in litigation. X-rays must be retained by the hospital for a period of ten years.

(2) X-rays must be made available upon request to consultants, to medical examiners, to the department, to self-insurers and/or to the board of industrial insurance appeals.

(3) If a hospital ceases to function as an acute care facility, department approved custodial arrangements must be made to insure availability of x-rays on request.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-215, filed 1/8/87.]

WAC 296-23A-220 Duplication of x-rays. Every attempt should be made to minimize the number of x-rays taken of injured workers. The attending physician or any other person or institution having possession of x-rays which pertain to the injury and are deemed to be needed for diagnostic or treatment purposes should make these x-rays available upon request.

The department or self-insurer will not authorize nor pay for additional x-rays when recent x-rays are available except when presented with adequate information regarding the need to retake the x-ray.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-220, filed 1/8/87.]

WAC 296-23A-225 Additional views. The department will only reimburse hospitals for the number of views stated in the description of the procedure. If the number of views taken is not described by a procedure, and the necessity of the views can be supported to the satisfaction of the department, then see WAC 296-23A-230 for the appropriate billing procedure.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-225, filed 1/8/87.]

WAC 296-23A-230 Unlisted service or procedure. A radiology service or procedure may be provided that is not listed in the fee schedules. When reporting such a service, the appropriate "unlisted procedure" code may be used to indicate the service, identifying it by "special report" as discussed in WAC 296-23A-235.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-230, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-230, filed 1/8/87.]

WAC 296-23A-235 Special report. A service that is rarely provided, unusual, variable, or new, may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure; and the time, effort and equipment necessary to provide the service. Additional items which may be helpful include: Complexity of symptoms, final diagnosis, pertinent physical findings, diagnostic and therapeutic procedures, concurrent problems, and follow-up care.

Refer to chapter 296-20 WAC for additional information.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-235, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-235, filed 1/8/87.]

HOSPITAL OUTPATIENT PATHOLOGY AND LABORATORY

WAC 296-23A-300 General information—Hospital outpatient pathology and laboratory. Rules and billing procedures pertaining to all practitioners rendering services to workers are presented in the general instructions section beginning with WAC 296-20-010 and in department policy. Some of the similarities are repeated here for the convenience of those hospitals referring to the pathology and laboratory section. The procedure codes and maximum allowable fees for pathology and laboratory services are listed in the fee schedules. Refer to WAC 296-20-132 and 296-20-135 regarding use of a conversion factor. Pathology and laboratory services must be performed by or under the supervision of a physician.

Unless otherwise specified, the fee maximums include the collection and handling of the specimens by the laboratory performing the procedure.

The department or self-insurer may deny payment for pathology or laboratory procedures which are determined to be excessive, unrelated, or unnecessary for management of the accepted industrial illness or injury.

By report: "BR" in the unit value column indicates that the value of the service is to be determined by report (BR) because the service is too unusual, variable, or new to be assigned a unit value. The report should provide an adequate definition or description of the services or procedure as discussed in WAC 296-23A-315. Whenever possible, list the nearest similar procedure code according to this schedule. The department or self-insurer may adjust BR procedures when such action is indicated.

It is appropriate to designate separate or multiple procedures that are rendered on the same date by separate entries.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-300, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-17-039 (Order 89-09), § 296-23A-300, filed 8/10/89, effective 9/10/89; 87-03-005 (Order 86-47), § 296-23A-300, filed 1/8/87.]

WAC 296-23A-310 Billing procedures. (1) Department billing instructions appear in WAC 296-20-125 and in department policy. Hospital information and billing instructions appear in WAC 296-23A-100, 296-23A-105, and 296-23A-150.

(2) Hospitals are reimbursed only for the technical component at rates listed in the fee schedules, or as determined by department policy.

(3) Hospitals should bill their usual and customary rates for the technical component of outpatient pathology and laboratory services.

(4) Laboratory procedures performed by other than the billing hospital shall be billed at the value charged the hospital by the reference (outside) laboratory. When possible, the service should be billed under the same procedure code or panel procedure number listed under "PANEL OR PROFILE TESTS" used by the reference laboratory.

(5) Laboratory reports must be attached to the bills for laboratory services.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-310, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-310, filed 1/8/87.]

WAC 296-23A-315 Unlisted service or procedure. A pathology or laboratory service or procedure may be provided that is not listed in the fee schedules. When reporting such a service, the appropriate "unlisted procedure" code may be used to indicate the service, identifying it by "special report" as discussed in WAC 296-23A-320.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-315, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-315, filed 1/8/87.]

WAC 296-23A-320 Special report. A service that is rarely provided, unusual, variable or new may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure; and the time, effort, and equipment necessary to provide the service. Additional items which may be helpful include: Complexity of symptoms, final diagnosis, pertinent physical findings, diagnostic and therapeutic procedures, concurrent problems, and follow-up care.

For additional information refer to chapter 296-20 WAC.

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 93-16-072, § 296-23A-320, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 87-03-005 (Order 86-47), § 296-23A-320, filed 1/8/87.]

HOSPITAL OUTPATIENT PHYSICAL THERAPY

WAC 296-23A-400 Hospital outpatient physical therapy rules. Hospitals should refer to chapter 296-20 WAC for general information and rules, and to department billing instructions pertaining to the care of workers and the billing of services.

The procedure codes and maximum allowable fees for physical therapy services are listed in the fee schedules. Also refer to WAC 296-20-132 and 296-20-135 regarding use of the conversion factor.

Physical therapy treatment will be reimbursed only when ordered by the worker's attending doctor and rendered by a licensed physical therapist or a physical therapist assistant serving under the direction of a licensed physical therapist.

The department or self-insurer will review the quality and medical necessity of physical therapy services. Practitioners should refer to WAC 296-20-01002 for the department's definition of medically necessary and to WAC 296-20-024 for the department's rules regarding utilization review and quality assurance.

The department or self-insurer will pay for a maximum of one physical therapy visit per day. When multiple treatments (different billing codes) are performed on one day, the department or self-insurer will pay either the sum of the individual fee maximums, the provider's usual and customary charge, or a flat dollar rate of $63.65, whichever is less. These limits will not apply to physical therapy which is rendered as part of a physical capacities evaluation, work hardening program, or pain management program, provided a qualified representative of the department or self-insurer has authorized the service.

The department will publish specific billing instructions, utilization review guidelines, and reporting requirements for physical therapists who render care to workers.

Use of diapulse or similar machines on workers is not authorized. See WAC 296-20-03002 for further information.

No inpatient physical therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-075 and 296-23A-100 for further information.

Biofeedback treatment may be rendered on physician's orders only. The extent of biofeedback treatment is limited to those procedures allowed within the scope of practice of a licensed physical therapist. See chapter 296-21 WAC and department policy for rules pertaining to the authorized conditions and the reporting requirements. The department may discount maximum fees for treatment performed on a group basis in cases where the treatment provided consists of a nonindividualized course of therapy (e.g., pool therapy; group aerobics; and back classes).

[Statutory Authority: RCW 51.04.020, 51.04.030 and 1993 c 159. 94-02-045, § 296-23A-400, filed 12/30/93, effective 3/1/94; 93-16-072, § 296-23A-400, filed 8/1/93, effective 9/1/93. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-002 (Order 89-01), § 296-23A-400, filed 3/23/89, effective 5/1/89; 87-03-005 (Order 86-47), § 296-23A-400, filed 1/8/87.]

WAC 296-23A-430 Work hardening. The department will publish billing instructions, reimbursement limits, quality assurance standards, utilization review guidelines, admission criteria, outcome criteria, measures of effectiveness, minimum staffing levels, certification requirements, special reporting requirements, and other criteria that will ensure injured workers receive good quality services at cost-effective payment levels. Providers will be required to meet the department's requirements in order to qualify as a work hardening provider. The department may also establish a competitive or other appropriate selection process for work hardening providers. Providers should refer to WAC 296-20-12050 regarding special programs.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 89-08-002 (Order 89-01), § 296-23A-430, filed 3/23/89, effective 5/1/89.]

Chapter 296-24 WAC
GENERAL SAFETY AND HEALTH STANDARDS

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-24-081 Respiratory protection. [Order 73-5, § 296-24-081, filed 5/9/73 and order 73-4, § 296-24-081, filed 5/7/73.] Repealed by 81-16-016 (order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. Later promulgation, see chapter 296-62 WAC.

296-24-08101 Permissible practice. [Order 73-5, § 296-24-08101, filed 5/9/73 and Order 73-4, § 296-24-08101, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-24-08103 Requirements for a minimal acceptable program. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08103, filed 8/8/80; Order 73-5, § 296-24-08103, filed 5/9/73 and Order 73-4, § 296-24-08103, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-24-08105 Selection of respirators. [Order 73-5, § 296-24-08105, filed 5/9/73 and Order 73-4, § 296-24-08105, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-24-08107 Air quality. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08107, filed 8/8/80; Order 73-5, § 296-24-08107, filed 5/9/73 and Order 73-4, § 296-24-08107, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-24-08109 Use of respirators. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08109, filed 8/8/80; Order 73-5, § 296-24-08109, filed 5/9/73 and Order 73-4, § 296-24-08109, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-24-08111 Maintenance and care of respirators. [Order 73-5, § 296-24-08111, filed 5/9/73 and Order 73-4, § 296-24-08111, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 And 49.17.240.

296-24-08113 Identification of gas mask canisters. [Order 73-5, § 296-24-08113, filed 5/9/73 and Order 73-4, § 296-24-08113, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240.

296-24-12013 Lunchrooms. [Order 73-5, § 296-24-12013, filed 5/9/73 and Order 73-4, § 296-24-12013, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-12015 Food handling. [Order 73-5, § 296-24-12015, filed 5/9/73 and Order 73-4, § 296-24-12015, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-130 Nonwater carriage disposal systems. [Order 73-5, § 296-24-130, filed 5/9/73 and Order 73-4, § 296-24-130, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 And 49.17.050.

296-24-13001 Acceptable industrial disposal systems. [Order 73-5, § 296-24-13001, filed 5/9/73 and Order 73-4, § 296-24-13001, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13003 Privy specifications. [Order 73-5, § 296-24-13003, filed 5/9/73 and Order 73-4, § 296-24-13003, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13005 Chemical toilet specifications. [Order 73-5, § 296-24-13005, filed 5/9/73 and Order 73-4, § 296-24-13005, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13007 Seepage pit construction. [Order 73-5, § 296-24-13007, filed 5/9/73 and Order 73-4, § 296-24-13007, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13009 Combustion toilet. [Order 73-5, § 296-24-13009, filed 5/9/73 and Order 73-4, § 296-24-13009, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13011 Recirculating toilet specifications. [Order 73-5, § 296-24-13011, filed 5/9/73 and Order 73-4, § 296-24-13011, filed 5/9/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13013 Portable toilet construction. [Order 73-5, § 296-24-13013, filed 5/9/73 and Order 73-4, § 296-24-13013, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13503 Color specifications. [Order 73-5, § 296-24-13503, filed 5/9/73 and Order 73-4, § 296-24-13503, filed 5/7/73.] Repealed by 83-15-017 (Order 83-19), filed 7/13/83, effective 9/12/83. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-170 Cooperage machinery. [Order 73-5, § 296-24-170, filed 5/9/73 and Order 73-4, § 296-24-170, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17001 Definitions. [Order 73-5, § 296-24-17001, filed 5/9/73 and Order 73-4, § 296-24-17001, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17003 Heading bolt sawing machine. [Order 73-5, § 296-24-17003, filed 5/9/73 and Order 73-4, § 296-24-17003, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17005 Bolt, equalizer, stave, and heading saws (tilting table style). [Order 73-5, § 296-24-17005, filed 5/9/73 and Order 73-4, § 296-24-17005, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17007 Barrel stave saws (cylindrical saws). [Order 73-5, § 296-24-17007, filed 5/9/73 and Order 73-4, § 296-24-17007, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17009 Hand-fed ripsaws. [Order 73-5, § 296-24-17009, filed 5/9/73 and Order 73-4, § 296-24-17009, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17011 Self-feed stave and heading equalizer saws. [Order 73-5, § 296-24-17011, filed 5/9/73 and Order 73-4, § 296-24-17011, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17013 Stave and heading planers (single and double heads). [Order 73-5, § 296-24-17013, filed 5/9/73 and Order 73-4, § 296-24-17013, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17015 Stave jointing machines (wheel). [Order 73-5, § 296-24-17015, filed 5/9/73 and Order 73-4, § 296-24-17015, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17017 Heading jointer and doweler machine (wheel). [Order 73-5, § 296-24-17017, filed 5/9/73 and Order 73-4, § 296-24-17017, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17019 Heading rounder. [Order 73-5, § 296-24-17019, filed 5/9/73 and Order 73-4, § 296-24-17019, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17021 Power windlass machine. [Order 73-5, § 296-24-17021, filed 5/9/73 and Order 73-4, § 296-24-17021, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17023 Crozing machine (stationary heads). [Order 73-5, § 296-24-17023, filed 5/9/73 and Order 73-4, § 296-24-17023, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17025 Heading-up machine. [Order 73-5, § 296-24-17025, filed 5/9/73 and Order 73-4, § 296-24-17025, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17027 Head charring machine. [Order 73-5, § 296-24-17027, filed 5/9/73 and Order 73-4, § 296-24-17027, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17029 Bilge truss hoop ring removing machine. [Order 73-5, § 296-24-17029, filed 5/9/73 and Order 73-4, § 296-24-17029, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17031 Hoop elevators and conveyors. [Order 73-5, § 296-24-17031, filed 5/9/73 and Order 73-4, § 296-24-17031, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17033 Barrel sanding machine. [Order 73-5, § 296-24-17033, filed 5/9/73 and Order 73-4, § 296-24-17033, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17035 Hoop drivers and trussers. [Order 73-5, § 296-24-17035, filed 5/9/73 and Order 73-4, § 296-24-17035, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17037 Head sanding machine. [Order 73-5, § 296-24-17037, filed 5/9/73 and Order 73-4, § 296-24-17037, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17039 Hand jointer. [Order 73-5, § 296-24-17039, filed 5/9/73 and Order 73-4, § 296-24-17039, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17041 Hoop punching and coiling machine. [Order 73-5, § 296-24-17041, filed 5/9/73 and Order 73-4, § 296-24-17041, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17043 Hoop riveting machine. [Order 73-5, § 296-24-17043, filed 5/9/73 and Order 73-4, § 296-24-17043, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17045 Hoop flaring and expanding machine. [Order 73-5, § 296-24-17045, filed 5/9/73 and Order 73-4, § 296-24-17045, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17047 Inspection and maintenance of cooperage machinery. [Order 73-5, § 296-24-17047, filed 5/9/73 and order 73-4, § 296-24-17047, filed 5/7/73.] Repealed by 82-13-045 (order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-19515 Reports of point of operation injuries—Mechanical power presses. [Order 76-6, § 296-24-19515, filed 3/1/76.] Repealed by 88-14-108 (Order 88-11), filed 7/6/88. Statutory Authority: Chapter 49.17 RCW.

296-24-220 Indoor general storage. [Order 73-5, § 296-24-220, filed 5/9/73 and Order 73-4, § 296-24-220, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22001 Definitions. [Order 73-5, § 296-24-22001, filed 5/9/73 and Order 73-4, § 296-24-22001, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22003 General requirements. [Order 73-5, § 296-24-22003, filed 5/9/73 and Order 73-4, § 296-24-22003, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22005 Piling procedures and precautions. [Order 73-5, § 296-24-22005, filed 5/9/73 and Order 73-4, § 296-24-22005, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22007 Fire protection requirements. [Order 73-5, § 296-24-22007, filed 5/9/73 and Order 73-4, § 296-24-22007, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22009 Mechanical handling equipment. [Order 73-5, § 296-24-22009, filed 5/9/73 and Order 73-4, § 296-24-22009, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22011 Building service equipment. [Order 73-5, § 296-24-22011, filed 5/9/73 and Order 73-4, § 296-24-22011, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-590 Portable fire suppression equipment—Portable fire extinguishers. [Order 73-5, § 296-24-590, filed 5/9/73 and Order 73-4, § 296-24-590, filed 5/7/73.] Repealed by 88-11-021 (Order 88-04), filed 5/11/88. Statutory Authority: Chapter 49.17 RCW.

296-24-59001 General requirements. [Order 73-5, § 296-24-59001, filed 5/9/73 and Order 73-4, § 296-24-59001, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-59003 Selection of extinguishers. [Order 74-27, § 296-24-59003, filed 5/7/74; Order 73-5, § 296-24-59003, filed 5/9/73 and Order 73-4, § 296-24-59003, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-59005 Distribution of portable fire extinguishers. [Order 73-5, § 296-24-59005, filed 5/9/73 and Order 73-4, § 296-24-59005, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-59007 Inspection, maintenance, and hydrostatic tests. [Order 74-27, § 296-24-59007, filed 5/7/74; Order 73-5, § 296-24-59007, filed 5/9/73 and Order 73-4, § 296-24-59007, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-600 Standpipe and hose systems. [Order 73-5, § 296-24-600, filed 5/9/73 and Order 73-4, § 296-24-600, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60001 General requirements. [Order 73-5, § 296-24-60001, filed 5/9/73 and Order 73-4, § 296-24-60001, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60003 Hose outlets. [Order 74-27, § 296-24-60003, filed 5/7/74; Order 73-5, § 296-24-60003, filed 5/9/73 and Order 73-4, § 296-24-60003, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60005 Water supplies. [Order 73-5, § 296-24-60005, filed 5/9/73 and Order 73-4, § 296-24-60005, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60007 Tests and maintenance. [Order 73-5, § 296-24-60007, filed 5/9/73 and Order 73-4, § 296-24-60007, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-605 Fixed fire suppression equipment—Automatic sprinkler systems. [Order 73-5, § 296-24-605, filed 5/9/73 and Order 73-4, § 296-24-605, filed 5/7/73.] Repealed by 88-11-021 (Order 88-04), filed 5/11/88. Statutory Authority: Chapter 49.17 RCW.

296-24-60501 General requirements. [Order 73-5, § 296-24-60501, filed 5/9/73 and Order 73-4, § 296-24-60501, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60503 Fire department connections. [Order 73-5, § 296-24-60503, filed 5/9/73 and Order 73-4, § 296-24-60503, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60505 Sprinkler alarms. [Order 73-5, § 296-24-60505, filed 5/9/73 and Order 73-4, § 296-24-60505, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60507 Maintenance of sprinkler system. [Order 76-6, § 296-24-60507, filed 3/1/76; Order 73-5, § 296-24-60507, filed 5/9/73 and Order 73-4, § 296-24-60507, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-60509 Sprinkler head clearance. [Order 73-5, § 296-24-60509, filed 5/9/73 and Order 73-4, § 296-24-60509, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-615 Fixed dry chemical extinguishing systems. [Order 73-5, § 296-24-615, filed 5/9/73 and Order 73-4, § 296-24-615, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-61501 General requirements. [Order 73-5, § 296-24-61501, filed 5/9/73 and Order 73-4, § 296-24-61501, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-61503 Alarms and indicators. [Order 74-27, § 296-24-61503, filed 5/7/74; Order 73-5, § 296-24-61503, filed 5/9/73 and Order 73-4, § 296-24-61503, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-61505 Inspection and maintenance. [Order 76-6, § 296-24-61505, filed 3/1/76; Order 73-5, § 296-24-61505, filed 5/9/73 and Order 73-4, § 296-24-61505, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-620 Carbon dioxide extinguishing systems. [Order 73-5, § 296-24-620, filed 5/9/73 and Order 73-4, § 296-24-620, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-62001 General requirements. [Order 73-5, § 296-24-62001, filed 5/9/73 and Order 73-4, § 296-24-62001, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-62003 Inspection and maintenance. [Order 74-27, § 296-24-62003, filed 5/7/74; Order 73-5, § 296-24-62003, filed 5/9/73 and Order 73-4, § 296-24-62003, filed 5/7/73.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-625 Local fire alarm signaling systems. [Order 74-27, § 296-24-625, filed 5/7/74.] Repealed by 87-24-051 (Order 87-24), filed 11/30/87. Statutory Authority: Chapter 49.17 RCW.

296-24-662 Safety requirements for explosive-actuated fastening tools. [Order 73-5, § 296-24-662, filed 5/9/73 and Order 73-4, § 296-24-662, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66201 Scope. [Order 73-5, § 296-24-66201, filed 5/9/73 and Order 73-4, § 296-24-66201, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66203 Purpose. [Order 73-5, § 296-24-66203, filed 5/9/73 and Order 73-4, § 296-24-66203, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66205 Definitions. [Order 73-5, § 296-24-66205, filed 5/9/73 and Order 73-4, § 296-24-66205, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66207 Design requirements—High velocity tools. [Order 73-5, § 296-24-66207, filed 5/9/73 and Order 73-4, § 296-24-66207, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66209 Low velocity piston tools. [Order 73-5, § 296-24-66209, filed 5/9/73 and Order 73-4, § 296-24-66209, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66211 Hammer-operated piston tools—Low velocity type. [Order 73-5, § 296-24-66211, filed 5/9/73 and Order 73-4, § 296-24-66211, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66213 Requirements for loads and fasteners. [Order 73-5, § 296-24-66213, filed 5/9/73 and Order 73-4, § 296-24-66213, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66215 Approvals. [Order 73-5, § 296-24-66215, filed 5/9/73 and Order 73-4, § 296-24-66215, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66217 Operation. [Order 73-5, § 296-24-66217, filed 5/9/73 and Order 73-4, § 296-24-66217, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66219 Servicing. [Order 73-5, § 296-24-66219, filed 5/9/73 and Order 73-4, § 296-24-66219, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66221 Qualification and certification of operators. [Order 73-5, § 296-24-66221, filed 5/9/73 and Order 73-4, § 296-24-66221, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66223 Storage of explosive-actuated tools, instruction books, cleaning kits, and tools. [Order 73-5, § 296-24-66223, filed 5/9/73 and Order 73-4, § 296-24-66223, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66225 Use low velocity tools when possible. [Order 73-5, § 296-24-66225, filed 5/9/73 and Order 73-4, § 296-24-66225, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-87003 General requirements. [Order 76-6, § 296-24-87003, filed 3/1/76; Order 73-5, § 296-24-87003, filed 5/9/73 and Order 73-4, § 296-24-87003, filed 5/7/73.] Repealed by 90-09-026 (Order 90-01), filed 4/10/90, effective 5/25/90. Statutory Authority: Chapter 49.17 RCW.

296-24-87005 Type F powered platforms. [Order 76-6, § 296-24-87005, filed 3/1/76; Order 73-5, § 296-24-87005, filed 5/9/73 and Order 73-4, § 296-24-87005, filed 5/7/73.] Repealed by 90-09-026 (Order 90-01), filed 4/10/90, effective 5/25/90. Statutory Authority: Chapter 49.17 RCW.

296-24-87007 Type T powered platforms. [Order 73-5, § 296-24-87007, filed 5/9/73 and Order 73-4, § 296-24-87007, filed 5/7/73.] Repealed by 90-09-026 (Order 90-01), filed 4/10/90, effective 5/25/90. Statutory Authority: Chapter 49.17 RCW.

296-24-950 Electrical—Application. [Order 74-27, § 296-24-950, filed 5/7/74.] Repealed by 83-24-013 (Order 83-34), filed 11/30/83. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-955 National electrical code. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-015 (Order 80-21), § 296-24-955, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-955, filed 11/13/78; Order 77-12, § 296-24-955, filed 7/11/77; Order 74-27, § 296-24-955, filed 5/7/74.] Repealed by 82-08-

026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

PART A-1
GENERAL, EDUCATIONAL, MEDICAL AND FIRST-AID REQUIREMENTS

WAC 296-24-001 Foreword. This chapter has been compiled with the purpose of consolidating all safety rules of general application into one chapter of the Washington Administrative Code, by the promulgation of the rules contained herein. It is also the intent that the safety rules of the Washington state department of labor and industries, will be at least as effective as those adopted by the U.S. Department of Labor and administered by the Occupational Safety and Health Administration as published in the Code of Federal Regulations. The department is incorporating many of the existing safety rules of general application and adding new rules under this chapter.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-001, filed 5/9/73 and Order 73-4, § 296-24-001, filed 5/7/73.]

WAC 296-24-003 Subsections, subdivisions, items, subitems, and segments. (1) That portion of section numeration appearing after the chapter designation appears in either a three digit or a five digit format (e.g. 296-24-330 and 296-24-33002). The final two digits of the section number are implied decimal extensions of the first three digits and represent a further division of the three digit enumeration.

(2) Sections of this chapter may be divided into subsections (1), (2), (3), etc., which may in turn be divided into subdivisions (a), (b), (c), etc., which may be further divided into items (i), (ii), (iii), etc., which may be further divided into subitems (A), (B), (C), etc., which may be further divided into segments (I), (II), (III), etc., all according to the following hierarchy, e.g.

Sections	296-24-330 and 296-24-33002
Subsections	(1) (2)
Subdivisions	(a) (b)
Items	(i) (ii)
Subitems	(A) (B)
Segments	(I) (II)

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-003, filed 11/14/88; Order 76-6, § 296-24-003, filed 3/1/76; Order 73-5, § 296-24-003, filed 5/9/73 and Order 73-4, § 296-24-003, filed 5/7/73.]

WAC 296-24-005 Purpose and scope. The rules included in this chapter apply throughout the state of Washington, to any and all work places under the jurisdiction of the department of labor and industries. These rules are minimum safety requirements with which all industries must comply. Special industry rules which will complement or augment rules contained in this chapter, appear as vertical standards in other chapters of Title 296 WAC. By adherence to such rules industrial accidents may be eliminated or minimized.

[Order 73-5, § 296-24-005, filed 5/9/73 and Order 73-4, § 296-24-005, filed 5/7/73.]

WAC 296-24-006 Equipment approval by nonstate agency or organization. Whenever a provision of this chapter states that only that equipment or those processes approved by an agency or organization other than the department of labor and industries, such as the Underwriters Laboratories or the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH), shall be utilized, that provision shall be construed to mean that approval of such equipment or process by the designated agency or group shall be prima facie evidence of compliance with the provision of this chapter.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-006, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-006, filed 5/9/73 and Order 73-4, § 296-24-006, filed 5/7/73.]

WAC 296-24-007 Incorporation of standards of national organization. Whenever a provision of this chapter incorporates by reference a national code or portion thereof which has been adopted by and is currently administered by another state agency, compliance with those provisions adopted and administered by such other state agency, if from a more recent edition of such national code, will be deemed to be prima facie evidence of compliance with the provisions of this chapter.

The specific standard(s), rule(s) or regulation(s) referenced in Title 296 WAC are available for review through local department of labor and industries offices. The standards are also available through the local library system or directly from the issuing organization.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-007, filed 9/30/94, effective 11/20/94; Order 73-5, § 296-24-007, filed 5/9/73 and Order 73-4, § 296-24-007, filed 5/7/73.]

WAC 296-24-008 Incorporation of standards of federal agency. (1) Whenever a provision of this chapter incorporates therein provisions of the Code of Federal Regulations (CFR) or any other regulations adopted by an agency of the federal government, that provision of this chapter shall be construed to mean that compliance with such regulations shall be prima facie evidence of compliance with the provisions of this chapter.

(2) Whenever a provision of this chapter incorporates therein provisions of the Code of Federal Regulations, the provisions so incorporated shall be those in effect on the date of effectiveness of this chapter, unless the content of the incorporating section specifies otherwise.

[Order 73-5, § 296-24-008, filed 5/9/73 and Order 73-4, § 296-24-008, filed 5/7/73.]

WAC 296-24-010 Variance and procedure. Conditions may exist in operations that a state standard will not

have practical use. The director may issue a variance from the requirements of the standard when another means of providing equal protection is provided.

Applications for variances will be reviewed and investigated by the department. Variances granted shall be limited to the specific case or cases covered in the application and may be revoked for cause. The variance shall remain prominently posted on the premises while in effect.

Variance application forms may be obtained from the department upon request. Requests for variances from safety and health standards shall be made in writing to the director or the assistant director, Department of Labor and Industries, Post Office Box 44600, Olympia, Washington 98504-4600. (Reference RCW 49.17.080 and 49.17.090.)

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-010, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-010, filed 11/22/91, effective 12/24/91; Order 74-27, § 296-24-010, filed 5/7/74; Order 73-5, § 296-24-010, filed 5/9/73 and Order 73-4, § 296-24-010, filed 5/7/73.]

WAC 296-24-012 Definitions applicable to all sections of this chapter.

Note: Meaning of words. Unless the context indicates otherwise, words used in this chapter shall have the meaning given in this section.

(1) "Approved" means approved by the director of the department of labor and industries or his/her authorized representative: *Provided, however,* That should a provision of this chapter state that approval by an agency or organization other than the department of labor and industries is required, such as Underwriters' Laboratories or the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH), the provisions of WAC 296-24-006 shall apply.

(2) "Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

(3) "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective action to eliminate them.

(4) "Department" means the department of labor and industries.

(5) "Director" means the director of the department of labor and industries, or his/her designated representative.

(6) "Employer" means any person, firm, corporation, partnership, business trust, legal representative, or other business entity which engages in any business, industry, profession, or activity in this state and employs one or more employees or who contracts with one or more persons, the essence of which is the personal labor of such person or persons and includes the state, counties, cities, and all municipal corporations, public corporations, political subdivisions of the state, and charitable organizations: *Provided,* That any person, partnership, or business entity not having employees, and who is covered by the industrial insurance act shall be considered both an employer and an employee.

(7) "First-aid" means, for purposes of this section, the extent of treatment that could be expected to be given by a person trained in basic first-aid, using supplies from a first-aid kit. Tests, such as x-rays, shall not be confused with treatment.

(8) "Hazard" means that condition, potential or inherent, which can cause injury, death, or occupational disease.

(9) "Hospitalization" means to be sent to; to go to; or be admitted to a hospital or an equivalent medical facility and receive medical treatment beyond that which would be considered as first-aid treatment, regardless of the length of stay in the hospital or medical facility.

(10) "Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

(11) "Safety factor" means the ratio of the ultimate breaking strength of a member or piece of material or equipment to the actual working stress or safe load when in use.

(12) "Safety and health standard" means a standard which requires the adoption or use of one or more practices, means, methods, operations, or processes reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

(13) "Shall" means mandatory.

(14) "Should" means recommended.

(15) "Standard safeguard" means a device designed and constructed with the object of removing the hazard of accident incidental to the machine, appliance, tool, building, or equipment to which it is attached.

Standard safeguards shall be constructed of either metal or wood or other suitable material or a combination of these. The final determination of the sufficiency of any safeguard rests with the director of the department of labor and industries.

(16) "Suitable" means that which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

(17) "Working day" means a calendar day, except Saturdays, Sundays, and legal holidays as set forth in RCW 1.16.050, as now or hereafter amended, and for the purposes of the computation of time within which an act is to be done under the provisions of this chapter, shall be computed by excluding the first working day and including the last working day.

(18) "Worker," "personnel," "person," "employee," and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, mean an employee of an employer who is employed in the business of his/her employer whether by way of manual labor or otherwise and every person in this state who is engaged in the employment of or who is working under an independent contract the essence of which is his/her personal labor for an employer whether by manual labor or otherwise.

(19) "Work place" means any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control, and includes, but is not limited to, all work places covered by industrial insurance under Title 51 RCW, as now or hereafter amended.

(20) Abbreviations used in this chapter:

(a) "ANSI" means American National Standards Institute.

(b) "API" means American Petroleum Institute.

(c) "ASA" means American Standards Association.

(d) "ASAE" means American Society of Agricultural Engineers.

(e) "ASHRE" means American Society of Heating and Refrigeration Engineers.

(f) "ASME" means American Society for Mechanical Engineers.

(g) "ASTM" means American Society for Testing and Materials.

(h) "AWS" means American Welding Society.

(i) "BTU" means British thermal unit.

(j) "BTUH" means British thermal unit per hour.

(k) "CFM" means cubic feet per minute.

(l) "CFR" means Code of Federal Register.

(m) "CGA" means Compressed Gas Association.

(n) "CIE" means Commission Internationale de l' Eclairage.

(o) "DOT" means department of transportation.

(p) "FRP" means fiberglass reinforced plastic.

(q) "GPM" means gallons per minute.

(r) "ICC" means Interstate Commerce Commission.

(s) "ID" means inside diameter.

(t) "LPG" means liquefied petroleum gas.

(u) "MCA" means Manufacturing Chemist Association. (New name: Chemical Manufacturers Association.)

(v) "NBFU" means National Board of Fire Underwriters.

(w) "NEMA" means National Electrical Manufacturing Association.

(x) "NFPA" means National Fire Protection Association.

(y) "NTP" means normal temperature and pressure.

(z) "OD" means outside diameter.

(aa) "PSI" means pounds per square inch.

(bb) "PSIA" means pounds per square inch atmospheric.

(cc) "PSIG" means pounds per square inch gauge.

(dd) "RMA" means Rubber Manufacturers Association.

(ee) "SAE" means Society of Automotive Engineers.

(ff) "TFI" means The Fertilizer Institute.

(gg) "TSC" means Trailer Standard Code.

(hh) "UL" means Underwriters' Laboratories, Inc.

(ii) "USASI" means United States of America Standards Institute.

(jj) "USC" means United States Code.

(kk) "USCG" means United States Coast Guard.

(ll) "WAC" means Washington Administrative Code.

(mm) "WISHA" means Washington Industrial Safety and Health Act of 1973.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-012, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-24-012, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-012, filed 5/9/73 and Order 73-4, § 296-24-012, filed 5/7/73.]

WAC 296-24-015 Education and first-aid standards. It shall be the duty of every employer to comply with such standards and systems of education for safety as shall be, from time to time, prescribed for such employer by the director of labor and industries or by statute. (Chapter 49.17 RCW.)

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-015, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-015, filed 11/13/80; Order 73-5, § 296-24-015, filed 5/9/73 and Order 73-4, § 296-24-015, filed 5/7/73.]

WAC 296-24-020 Management's responsibility. (1) It shall be the responsibility of management to establish, supervise, and enforce, in a manner which is effective in practice:

(a) A safe and healthful working environment.

(b) An accident prevention program as required by these standards.

(c) Training programs to improve the skill and competency of all employees in the field of occupational safety and health. Such training shall include the on-the-job instructions on the safe use of powered materials handling equipment, machine tool operations, use of toxic materials and operation of utility systems prior to assignments to jobs involving such exposures.

(2) After the emergency actions following accidents that cause serious injuries that have immediate symptoms, a preliminary investigation of the cause of the accident shall be conducted. The investigation shall be conducted by a person designated by the employer, the immediate supervisor of the injured employee, witnesses, employee representative, and any other person with the special expertise required to evaluate the facts relating to the cause of the accident. The findings of the investigation shall be documented by the employer for reference at any following formal investigation. If the employee representative is the business agent of the employee bargaining unit and is unavailable to participate without delaying the investigation group, the employer may proceed, and satisfy the requirements of subsection (2) of this section by using one of the following alternatives:

(a) The shop steward acts as the employee representative.

(b) An employee representative member of the safety committee acts as the employee representative.

(c) The employees select a person to represent them.

(3) Reporting of fatality or multiple hospitalization incidents.

(a) Within eight hours after the fatality or probable fatality of any employee from a work-related incident or the inpatient hospitalization of two or more employees as a result of a work-related incident, the employer of any employees so affected, shall orally report the fatality/multiple hospitalization by telephone or in person to the nearest office of the department or by using the OSHA toll-free central telephone number, 1-800-321-6742.

(i) This requirement applies to each such fatality or hospitalization of two or more employees which occurs within thirty days of the incident.

(ii) Exception: If the employer does not learn of a reportable incident at the time it occurs and the incident would otherwise be reportable under this subsection, the employer shall make a report within eight hours of the time the incident is reported to any agent or employee of the employer.

(iii) Each report required by this subsection shall relate the following information: Establishment name, location of the incident, time of the incident, number of fatalities or hospitalized employees, contact person, phone number, and a brief description of the incident.

(b) Equipment involved in an incident resulting in an immediate or probable fatality or in the in-patient hospitalization of two or more employees, shall not be moved, until a representative of the department investigates the incident and releases such equipment, except where removal is essential to prevent further incident. Where necessary to remove the victim, such equipment may be moved only to the extent of making possible such removal.

(c) Upon arrival of the department's investigator, employer shall assign to assist the investigator, the immediate supervisor and all employees who were witnesses to the incident, or whoever the investigator deems necessary to complete the investigation.

(4) Each employer shall maintain in each establishment a system for maintaining records of occupational injuries and illnesses as prescribed by WAC 296-27-030.

Note: Recordable cases include:

1. Every occupational death.
2. Every industrial illness.
3. Every occupational injury that involves one of the following:
   a. Unconsciousness.
   b. Inability to perform all phases of regular job.
   c. Inability to work full time on regular job.
   d. Temporary assignment to another job.
   e. Medical treatment beyond first-aid.

(5) All employers with eleven or more employees shall record occupational injury and illness information on forms OSHA 101 - Supplementary Record Occupational Injuries and Illnesses and OSHA 200 - Log and Summary. Forms other than OSHA 101 may be substituted for the Supplementary Record of Occupational Injuries and Illnesses if they contain the same items.

(6) Machinery, tools, materials or equipment, whether owned by the employer or under control of another firm or individual, which does not meet the compliance requirements of this chapter, or any other applicable vertical standard of a specific industry, shall not be utilized by employees.

(7) Each employer shall post and keep posted a notice or notices (the WISHA Poster, Job safety and health protection; form F416-081-000) to be furnished by the department of labor and industries, informing employees of the protections and obligations provided for in the act. For assistance and information, including copies of the act, and of specific safety and health standards, employees should contact the employer or the nearest office of the department of labor and industries. Such notice or notices shall be posted by the employer at each establishment in a conspicuous place or places where notices to employees are customarily posted. Each employer shall take steps to assure that such notices are not altered, defaced, or covered by other material.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-020, filed 9/30/94, effective 11/20/94; 91-24-017 (Order 91-07), § 296-24-020, filed 11/22/91, effective 12/24/91; 91-03-044 (Order 90-18), § 296-24-020, filed 1/10/91, effective 2/12/91; 90-03-029 (Order 89-20), § 296-24-020, filed 1/11/90, effective 2/26/90. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240 and chapters 42.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-020, filed 11/13/78; Order 74-27, § 296-24-020, filed 5/7/74; Order 73-5, § 296-24-020, filed 5/9/73 and Order 73-4, § 296-24-020, filed 5/7/73.]

WAC 296-24-025 Employee's responsibility. (1) Employees shall coordinate and cooperate with all other employees in an attempt to eliminate accidents.

(2) Employees shall study and observe all safe practices governing their work.

(3) Employees should offer safety suggestions, wherein such suggestions may contribute to a safer work environment.

(4) Employees shall apply the principles of accident prevention in their daily work and shall use proper safety devices and protective equipment as required by their employment or employer.

(5) Employees shall properly care for all personal protective equipment.

(6) Employees shall make a prompt report to their immediate supervisor, of each industrial injury or occupational illness, regardless of the degree of severity.

(7) Employees shall not wear torn or loose clothing while working around machinery.

[Order 74-27, § 296-24-025, filed 5/7/74; Order 73-5, § 296-24-025, filed 5/9/73 and Order 73-4, § 296-24-025, filed 5/7/73.]

WAC 296-24-040 Accident prevention programs. Each employer shall develop a formal accident-prevention program, tailored to the needs of the particular plant or operation and to the type of hazards involved. The department may be contacted for assistance in developing appropriate programs.

(1) The following are the minimal program elements for all employers:

(a) A safety orientation program describing the employer's safety program and including:

(i) How and when to report injuries, including instruction as to the location of first-aid facilities.

(ii) How to report unsafe conditions and practices.

(iii) The use and care of required personal protective equipment.

(iv) The proper actions to take in event of emergencies including the routes of exiting from areas during emergencies.

(v) Identification of the hazardous gases, chemicals or materials involved along with the instructions on the safe use and emergency action following accidental exposure.

(vi) A description of the employer's total safety program.

(vii) An on-the-job review of the practices necessary to perform the initial job assignments in a safe manner.

(b) A designated safety and health committee consisting of management and employee representatives with the employee representatives being elected or appointed by fellow employees.

(2) Each accident-prevention program shall be outlined in written format.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-040, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240 and chapters 42.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-040, filed 11/13/78; Order 74-27, § 296-24-040, filed 5/7/74; Order 73-5, § 296-24-040, filed 5/9/73 and Order 73-4, § 296-24-040, filed 5/7/73.]

WAC 296-24-045 Safety and health committee plan. (1) All employers of eleven or more employees, shall have

a designated safety committee composed of employer-selected and employee-elected members.

(a) The terms of employee-elected members shall be a maximum of one year. Should a vacancy occur on the committee, a new member shall be elected prior to the next scheduled meeting.

(b) The number of employer-selected members shall not exceed the number of employee-elected members.

(2) The safety committee shall have an elected chairperson.

(3) The safety committee shall be responsible for determining the frequency of committee meetings.

Note: If the committee vote on the frequency of safety meetings is stalemated, the department's regional safety consultation representative shall be consulted for recommendations.

(a) The committee shall be responsible for determining the date, hour and location of the meeting.

(b) The length of each meeting shall not exceed one hour except by majority vote of the committee.

(4) Minutes of each committee meeting shall be prepared and filed for a period of at least one year and shall be made available for review by noncompliance personnel, of the department of labor and industries.

(5) Safety and health committee meetings shall address the following:

(a) A review of the safety and health inspection reports to assist in correction of identified unsafe conditions or practices.

(b) An evaluation of the accident investigations conducted since the last meeting to determine if the cause of the unsafe acts or unsafe condition involved was properly identified and corrected.

(c) An evaluation of the accident and illness prevention program with a discussion of recommendations for improvement where indicated.

(d) The attendance shall be documented.

(e) The subject(s) discussed shall be documented.

(6) All employers of ten or less employees and employers of eleven or more employees where the employees are segregated on different shifts or in widely dispersed locations in crews of ten or less employees, may elect to have foreperson-crew meetings in lieu of a safety and health committee plan provided:

(a) Foreperson-crew safety meetings shall be held at least once a month, or if conditions require, weekly or biweekly meetings shall be held to discuss safety problems as they arise.

(b) All items under subsection (5) of this section, shall be complied with.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-045, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-045, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-045, filed 11/13/78.]

WAC 296-24-055 Safety bulletin board. There shall be installed and maintained in every fixed establishment employing eight or more persons, a safety bulletin board sufficient in size to display and post safety bulletins, newsletters, posters, accident statistics and other safety educational material. It is recommended that safety bulletin boards be painted green and white.

[Order 73-5, § 296-24-055, filed 5/9/73 and Order 73-4, § 296-24-055, filed 5/7/73.]

WAC 296-24-060 First-aid training and certification. The purpose of this section is to assure that all employees of this state can be afforded quick and effective first-aid attention in the event that an injury occurs on the job. The means of achieving this purpose is to assure the presence of personnel trained in first-aid procedures at or near those places where employees are working. Compliance with the provisions of this section may require the presence of more than one first-aid trained person.

(1) In addition to RCW 51.36.030, every employer shall comply with the department's requirements for first-aid training and certification.

(2) There shall be present or available at all times, a person or persons holding a valid certificate of first-aid training. (A valid first-aid certificate is one which is less than three years old.)

(3) Compliance with the requirements of subsection (2) of this section may be achieved as follows:

(a) All forepersons, supervisors, or persons in direct charge of crews working in physically dispersed operations, shall have a valid first-aid certificate: *Provided,* That if the duties or work of the foreperson, supervisor or person in direct charge of the crew requires an absence from the crew, another person holding a valid first-aid certificate shall be present. For the purposes of this section, a crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed work place such as occurs in construction, logging, etc. If there is no foreperson, supervisor or person in direct charge assigned to the crew, at least one employee shall have a valid first-aid certificate. In emergencies, forepersons, supervisors and persons in direct charge of a crew will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreperson in the immediate work area has the necessary certificate.

(b) In fixed establishments, all forepersons, supervisors, or persons in direct charge of a group or groups of employees shall have a valid first-aid certificate: *Provided,* That in fixed establishments where the foreperson, supervisor, or person in charge has duties which require their absence from the work site of the group, another person holding a valid first-aid certificate shall be present or available to the group.

Note: Forepersons, supervisors or persons in direct charge of a group or groups of employees will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreperson in the immediate work area has the necessary certificate.

(c) In fixed establishments organized into distinct departments or equivalent organizational units such as department stores, large company offices, etc., a person or persons holding a valid first-aid certificate shall be present or available at all times employees are working within that department or organizational unit.

(d) In small businesses, offices or similar types of fixed workplaces, compliance may be achieved by having a number of such small businesses, offices, etc., combined into a single unit for the purpose of assuring the continued

presence or availability of a person or persons holding a valid first-aid training certificate.

A plan for combining a number of small businesses etc., into such a group shall be submitted to the department, for approval. The department is also available to assist employers who wish to develop such a plan. Criteria for approval by the department shall include:

(i) The businesses within the group must not be widely dispersed;

(ii) The name(s) of the person or persons holding the first-aid certificates, their usual places of work, their phone numbers, and other appropriate information shall be posted in each establishment which is a member of the group, in a place which can reasonably be expected to give notice to employees of that establishment;

(iii) First-aid kits must be available as required by WAC 296-24-065.

(e) Valid certification shall be achieved by passing a course of first-aid instruction and participation in practical application of the following subject matter.

Bleeding control and bandaging.
Practical methods of artificial respiration, including mouth-to-mouth and mouth-to-nose resuscitation.
Closed chest heart massage.
Poisons.
Shock, unconsciousness, stroke.
Burns, scalds.
Sunstroke, heat exhaustion.
Frostbite, freezing, hypothermia.
Strains, sprains, hernias.
Fractures, dislocations.
Proper transportation of the injured.
Bites, stings.
Subjects covering specific health hazards likely to be encountered by co-workers of first-aid students enrolled in the course.

(4) In physically dispersed operations, at least one member of each crew shall have a valid first-aid certificate. A crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed workplace such as occurs in construction, logging, etc.

(5) Names of industrial first-aid course instructors will, upon request, be furnished by the department of labor and industries, either directly or through a program with the community colleges or vocational education.

(6) Employers of employees working in fixed establishments, meeting the following criteria, are exempt from the requirements of this section: *Provided*

(a) They can submit written evidence to the department, upon request, that the worksite of their employees is within a two-minute time frame of response by an aid car, medic unit or established ambulance service with first-aid trained attendants.

(b) There is a back-up aid car, medic unit or established ambulance service within the two-minute response time; or that a first-aid trained person with readily available transportation is on the site of the posted emergency phone number for immediate dispatch in the event the primary unit is not available.

(c) There are no traffic impediments, such as draw bridges, railroad track; etc., along the normal route of travel of the aid car, medic unit or established ambulance service that would delay arrival beyond the required two minute time frame.

(d) Emergency telephone numbers are posted on all first-aid kits and at all telephones on the worksite.

(e) The above services are available or exist at all times when more than one employee is on the worksite.

Note: A construction site that will be of more than six months duration, such as a large building, shall be considered a fixed establishment for the purposes of this section. Doctor's offices and clinics are not to be considered as alternates due to the fact that very often doctor's schedules require them to be away from their offices.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-060, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-24-060, filed 6/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-060, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-060, filed 11/13/78; Order 74-27, § 296-24-060, filed 5/7/74; Order 73-5, § 296-24-060, filed 5/9/73 and Order 73-4, § 296-24-060, filed 5/7/73.]

WAC 296-24-065 First-aid kit. (1) All employers who employ men and women covered by the Washington Industrial Safety and Health Act shall furnish first-aid kits as required by the department of labor and industries, (RCW 51.36.030).

(2) First-aid supplies shall be readily accessible when required.

(3) In the absence of readily accessible first-aid supplies such as first-aid kits, first-aid stations, first-aid rooms or their equivalent, all crew trucks, power shovels, cranes, locomotives, loaders, dozers, logging trucks, speeders, freight trucks and similar equipment shall be equipped with not less than a ten package first-aid kit.

(4) All crew vehicles used for transporting workers shall be equipped with not less than a ten package first-aid kit. When more than five employees are being transported on any one trip, the kit shall be increased in size to comply with a 16, 24, or 36-package kit depending upon the number of personnel normally being transported.

(5) At least one first-aid kit shall be available on construction jobs, line crews, and other transient or short duration jobs. The size and quantity of first-aid kits, required to be located at any site, shall be determined by the number of personnel normally dependent upon each kit as outlined in the following table:

NUMBER OF PERSONNEL NORMALLY ASSIGNED TO WORKSITE	MINIMUM FIRST-AID SUPPLIES REQUIRED AT WORKSITE
1 - 50 persons	**First-Aid Kit**
1 - 5	10 package kit
6 - 15	16 package kit
16 - 30	24 package kit
31 - 50	36 package kit

51 - 200 persons	First-Aid Station
51 - 75	One 36 and one 10 package kit
76 - 100	One 36 and one 16 package kit
101 - 150	One 36 and one 24 package kit
151 - 200	Two 36 package kits
Over 200 Persons	**First-Aid Room** Refer to WAC 296-24-070

(6) Employers shall establish a procedure to assure that first-aid kits and required contents are maintained in a serviceable condition. Unit-type kits have all items in the first-aid kit individually wrapped, sealed, and packaged in comparable sized packages. The commercial or cabinet-type kits do not require all items to be individually wrapped and sealed, but only those which must be kept sterile. Items such as scissors, tweezers, tubes of ointments with caps, or rolls of adhesive tape, need not be individually wrapped, sealed, or disposed of after a single use or application. Individual packaging and sealing shall be required only for those items which must be kept sterile in a first-aid kit.

(7) First-aid kits shall contain at least the following items:

10 Package Kit

1 Pkg. Adhesive bandages, 1" (16 per pkg.)
1 Pkg. Bandage compress, 4" (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
1 Pkg. Triangular bandage, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
5 Pkgs. of consulting physician's choice**

16 Package Kit

1 Pkg. Absorbent gauze, 24" x 72" (1 per pkg.)
1 Pkg. Adhesive bandages, 1" (16 per pkg.)
2 Pkgs. Bandage compresses, 4" (1 per pkg.)
1 Pkg. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
2 Pkgs. Triangular bandages, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
7 Pkgs. of consulting physician's choice**

24 Package Kit

2 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
2 Pkgs. Bandage compresses, 4" (1 per pkg.)
1 Pkg. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
6 Pkgs. Triangular bandages (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
9 Pkgs. of consulting physician's choice**

36 Package Kit

4 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
5 Pkgs. Bandage compresses, 4" (1 per pkg.)
2 Pkgs. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
8 Pkgs. Triangular bandages, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
13 Pkgs. of consulting physician's choice**

*Scissors shall be capable of cutting 2 layers of 15 oz. cotton cloth or its equivalent.

**First-aid kits shall be maintained at the ten, sixteen, twenty-four or thirty-six package level. In the event the consulting physician chooses not to recommend items, the department of labor and industries shall be contacted for recommended items to complete the kit.

(8) Where the eyes or body of any person may be exposed to injurious chemicals and/or materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided, within the work area, for immediate emergency use.

(9) When practical, a poster shall be fastened and maintained either on or in the cover of each first-aid kit and at or near all phones plainly stating, the phone numbers of available doctors, hospitals, and ambulance services within the district of the worksite.

(10) When required by the department, in addition to the first-aid kit which must be kept on the equipment or at the place of work, there shall be available within the closest practicable distance from the operations (not to exceed 1/2 mile) the following items:

1 set of arm and leg splints.
2 all wool blankets or blankets equal in strength and fire resistant (properly protected and marked).
1 stretcher.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-065, filed 7/20/94, effective 9/20/94; 91-03-044 (Order 90-18), § 296-24-065, filed 1/10/91, effective 2/12/91; Order 74-27, § 296-24-065, filed 5/7/74; Order 73-5, § 296-24-065, filed 5/9/73 and Order 73-4, § 296-24-065, filed 5/7/73.]

WAC 296-24-067 First-aid station. (1) First-aid stations shall be located as close as practicable to the highest concentration of personnel.

(2) First-aid stations shall be well marked and available to personnel during all working hours.

(3) One person holding a valid first-aid certificate shall be responsible for the proper use and maintenance of the first-aid station.

(4) First-aid stations shall be equipped with a minimum of two first-aid kits, the size of which shall be dependent upon the number of personnel normally employed at the worksite. One first-aid kit may be a permanent wall-mounted kit, but in all cases the station shall be equipped with at least one portable first-aid kit.

(5) When required by the department, the station shall be equipped with two wool blankets and a stretcher in addition to first-aid kits.

(6) A roster, denoting the telephone numbers and addresses of doctors, hospitals and ambulance services

available to the worksite, shall be posted at each first-aid station.

[Order 73-5, § 296-24-067, filed 5/9/73 and Order 73-4, § 296-24-067, filed 5/7/73.]

WAC 296-24-070 First-aid room. (1) A first-aid room meeting the requirements of this section shall be required when:

(a) A fixed establishment employs more than 200 employees at one central location,

EXCEPTION: The department may permit the employer to follow the requirements of WAC 296-24-060, 296-24-065 and 296-24-067 as appropriate when employees would be better served for first-aid purposes and the following conditions are present:

(i) In low hazard occupations such as retail clothing stores, banks, or general office work where exposure to manufacturing processes or heavy materials handling does not exist, and

(ii) Where the 200 or more employees have physically dispersed normal work stations which would result in excessive travel to the first-aid room. (Excessive travel shall mean travel of one quarter mile or more or three or more floors of vertical travel.)

(b) At construction sites which are expected to remain construction sites for six months or more.

(2) First-aid rooms shall be located as close as possible to the heaviest concentrated work area. They shall be identified in such a manner as to be easily recognizable as first-aid rooms.

(3) The first-aid room shall be well lighted and ventilated, kept clean and orderly, provided with hot and cold running water, and maintained in a fully-equipped condition.

(4) The first-aid room shall be manned and maintained by:

(a) A licensed physician, or

(b) A licensed or registered nurse, or

(c) An employee who:

(i) Holds a valid advanced first-aid certificate as recognized by the department,

(ii) Works in the vicinity of the first-aid room, and

(iii) Does not perform other work of the nature that is likely to affect adversely her/his ability to administer first-aid.

(5) First-aid rooms shall be equipped with items recommended by the consulting physician or plant medical officer and, as a minimum, should contain an adequate supply of the following:

Antiseptic soap
3/4" or 1" adhesive compresses
Adhesive knuckle bands
2" Bandage compresses
4" Bandage compresses
3" x 3" gauze pads
Assorted sizes of large gauze pads
2" roller bandages
3" roller bandages
4" roller bandages
Assorted adhesive tape rolls
Eye dressings
Ammonia inhalants
Burn ointment
Triangular bandages
Scissors, forceps, razor and blades, medicine droppers
Safety pins
Drinking cups
Rubbing alcohol
Absorbent cotton
Arm and leg splints
Antidotes for specific industrial poisons
Pressure points chart
Stretcher
Wool blankets and clean linen
Hot water bottles
Quick colds or ice bag
Emergency first-aid kit
A method of sterilizing instruments

(6) A poster shall be maintained on, or in the cover of, each first-aid cabinet and near each first-aid room phone. Such poster will state phone numbers of available doctors, hospitals, and ambulance services with in the employer's district.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-24-070, filed 6/17/81; Order 73-5, § 296-24-070, filed 5/9/73 and Order 73-4, § 296-24-070, filed 5/7/73.]

WAC 296-24-073 Safe place standards. (1) Each employer shall furnish to each employee a place of employment free from recognized hazards that are causing or likely to cause serious injury or death to his employees.

(2) Every employer shall furnish and use safety devices and safeguards, and shall adopt and use practices, means, methods, operations, and processes which are reasonably adequate to render such employment and place of employment safe. Every employer shall do every other thing reasonably necessary to protect the life and safety of employees.

(3) No employer shall require any employee to go or be in any employment or place of employment which is not safe.

(4) No employer shall fail or neglect:

(a) To provide and use safety devices and safeguards.

(b) To adopt and use methods and processes reasonably adequate to render the employment and place of employment safe.

(c) To do every other thing reasonably necessary to protect the life and safety of employees.

(5) No employer, owner, or lessee of any real property shall construct or cause to be constructed any place of employment that is not safe.

(6) No person shall do any of the following:

(a) Remove, displace, damage, destroy or carry off any safety device, safeguard, notice, or warning, furnished for use in any employment or place of employment.

(b) Interfere in any way with the use thereof by any other person.

(c) Interfere with the use of any method or process adopted for the protection of any one employee, including themselves, in such employment, or place of employment.

(d) Fail or neglect to do every other thing reasonably necessary to protect the life and safety of employees.

(e) Intoxicating beverages and narcotics shall not be permitted in or around work sites except in industries and business engaged in the production, distribution, and sale of intoxicating beverages and drugs. Workers under the influence of alcohol or narcotics shall not be permitted on the work site. This rule does not apply to persons taking prescription drugs and narcotics as directed by a physician or dentist providing such use shall not endanger the worker or others.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-073, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-24-073, filed 12/11/84; Order 74-27, § 296-24-073, filed 5/7/74; Order 73-5, § 296-24-073, filed 5/9/73 and Order 73-4, § 296-24-073, filed 5/7/73.]

PART A-2
PERSONAL PROTECTIVE EQUIPMENT

WAC 296-24-075 Personal protective equipment.

[Order 73-5, § 296-24-075, filed 5/9/73 and Order 73-4, § 296-24-075, filed 5/7/73.]

WAC 296-24-07501 General requirements. (1) Application.

(a) Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(b) Employee owned equipment. Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

(c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed. Protectors shall be durable, fit snugly and shall not unduly interfere with the movements of the wearer.

(2) Hazard assessment and equipment selection. This subsection does not apply to WAC 296-24-092, Electrical protective devices, and WAC 296-62-071 through 296-62-07121, Part E, Respiratory protection.

(a) The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall:

(i) Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;

(ii) Communicate selection decisions to each affected employee; and

(iii) Select PPE that properly fits each affected employee.

Note: Nonmandatory Appendix B contains an example of procedures that would comply with the requirement for a hazard assessment.

(b) The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

(3) Defective and damaged equipment. Defective or damaged personal protective equipment shall not be used.

(4) Training. This subsection does not apply to WAC 296-24-092, Electrical protective devices, and WAC 296-62-071 through 296-62-07121, Part E, Respiratory protection.

(a) The employer shall provide training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:

(i) When PPE is necessary;

(ii) What PPE is necessary;

(iii) How to properly don, doff, adjust, and wear PPE;

(iv) The limitations of the PPE; and

(v) The proper care, maintenance, useful life and disposal of the PPE.

(b) Each affected employee shall demonstrate an understanding of the training specified in (a) of this subsection, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

(c) When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by (b) of this subsection, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

(i) Changes in the workplace render previous training obsolete; or

(ii) Changes in the types of PPE to be used render previous training obsolete; or

(iii) Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

(d) The employer shall verify that each affected employee has received and understood the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-07501, filed 9/30/94, effective 11/20/94; Order 73-5, § 296-24-07501, filed 5/9/73 and Order 73-4, § 296-24-07501, filed 5/7/73.]

WAC 296-24-078 Eye and face protection.

[Order 73-5, § 296-24-078, filed 5/9/73 and Order 73-4, § 296-24-078, filed 5/7/73.]

WAC 296-24-07801 General. (1) Each affected employee shall use appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

(2) Each affected employee shall use eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g., clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

(3) Each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design, or shall wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

(4) Eye and face PPE shall be distinctly marked to facilitate identification of the manufacturer.

(5) Each affected employee shall use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation. The following is a listing of appropriate shade numbers for various operations.

Filter Lenses for Protection Against Radiant Energy

Operations	Electrode Size 1/32 (inches)	Minimum* Protective Arc Current	Shade
Shielded metal arc welding	Less than 3	Less than 60	7
	3-5	60-160	8
	5-8	160-250	10
	More than 8	250-550	11
Gas metal arc welding and flux cored arc welding		Less than 60	7
		60-160	10
		160-250	10
		250-500	10
Gas Tungsten arc welding		Less than 50	8
		50-150	8
		150-500	10
Air carbon Arc cutting	(Light)	Less than 500	10
	(Heavy)	500-1000	11
Plasma arc welding		Less than 20	6
		20-100	8
		100-400	10
		400-800	11
Plasma arc cutting	(Light)	Less than 300	8
	(Medium)**	300-400	9
	(Heavy)**	400-800	10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14

Filter Lenses for Protection Against Radiant Energy

Operations	Plate thickness (inches)	Plate thickness (mm)	Minimum* Protective Shade
Gas welding:			
Light	Under 1/8	Under 3.2	4
Medium	1/8 to 1/2	3.2 to 12.7	5
Heavy	Over 1/2	Over 12.7	6
Oxygen cutting:			
Light	Under 1	Under 25	3
Medium	1 to 6	25 to 150	4
Heavy	Over 6	Over 150	5

* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

** These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

(6) Criteria for protective eye and face devices.

(a) Protective eye and face devices purchased after February 20, 1995, shall comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection," which is incorporated by reference, or shall be demonstrated by the employer to be equally effective.

(b) Eye and face protective devices purchased before February 20, 1995, shall comply with the ANSI standard "American National Standard Practice for Occupational and Educational Eye and Face Protection," ANSI Z87.1-1968 or shall be demonstrated by the employer to be equally effective.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-07801, filed 9/30/94, effective 11/20/94; Order 73-5, § 296-24-07801, filed 5/9/73 and Order 73-4, § 296-24-07801, filed 5/7/73.]

WAC 296-24-084 Occupational head protection. (1) General requirements.

(a) Each affected employee shall wear protective helmets when working in areas where there is a potential for injury to the head from falling and flying objects.

(b) Protective helmets designed to reduce electrical shock hazard shall be worn by each such affected employee when near exposed electrical conductors which could contact the head.

(2) Criteria for protective helmets.

(a) Protective helmets purchased after February 20, 1995, shall comply with ANSI Z89.1-1986, "American National Standard for Personnel Protection—Protective Headwear for Industrial Workers- Requirements," which is incorporated by reference, or shall be demonstrated to be equally effective.

(b) Protective helmets purchased before February 20, 1995, shall comply with the ANSI standard "American National Standard Safety Requirements for Industrial Head Protection," ANSI Z89.1-1969, or shall be demonstrated by the employer to be equally effective.

(3) Persons working in the shops around machinery or in locations which present a hair catching or fire hazard shall wear caps or other type of head covering which completely covers the hair. Caps with metal buttons or metal visors shall not be worn around electrical hazards.

Note 1: The following will define hair lengths considered hazardous:
(a) When the length would exceed the circumference of exposed revolving shafts or tools in fixed machines by 200 percent.
(b) When the length would exceed the radius of pressure rolls with exposed in-running nip points.
(c) When the employee is exposed to an ignition source and the employee may, with hair aflame, run into an area containing class -1 flammable liquids or combustible atmospheres.
(d) When exposures require personal protective devices, such as mask-type respirators or ear-cup-type hearing protection devices, and hair, either facial or head, would interfere with a proper seal.

Note 2: When hair length is judged hazardous from a hair catching standpoint (instances (a) or (b) under interpretations in Note 1) minimal confinement shall be within netting which controls all loose ends.

Note 3: If hazardous from fire hazard aspects (instance (c) of Note 1) the hair must be confined within a solid-type material.

(4) Protective helmets shall be worn by employees who work around or under scaffolds or other overhead structures, or who are otherwise exposed to the hazards of falling materials and propelled objects.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-084, filed 9/30/94, effective 11/20/94; 91-03-044 (Order 90-18), § 296-24-084, filed 1/10/91, effective 2/12/91; Order 74-27, § 296-24-084, filed 5/7/74; Order 73-5, § 296-24-084, filed 5/9/73 and Order 73-4, § 296-24-084, filed 5/7/73.]

WAC 296-24-086 Personal flotation devices. (1) Employees working on, over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices.

(a) Employees are not considered exposed to the danger of drowning when;

(i) The water depth is known to be less than chest deep on the exposed individual;

(ii) When working behind standard height and strength guardrails;

(iii) When working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water;

(iv) When wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water.

(b) Prior to and after each use, personal flotation devices shall be inspected for defects which would reduce their designed effectiveness. Defective personal flotation devices shall not be used.

(c) To meet the approved criteria required by subdivision (1), a personal flotation device shall be approved by the United States Coast Guard as a Type I PFD, Type II PFD, Type III PFD, or Type V PFD, or their equivalent, pursuant to 46 CFR 160 (Coast Guard Lifesaving Equipment Specifications) and 33 CFR 175.23 (Coast Guard table of devices equivalent to personal flotation devices). Ski belt or inflatable type personal flotation devices are specifically prohibited.

(2) Life ring.

(a) Along docks, walkways or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with line attached shall be provided. The life rings shall be spaced at intervals not to exceed 200 feet and shall be kept in easily visible and readily accessible locations.

(b) When employees are assigned work at other casual locations where exposure to drowning exists, at least one approved life ring with line attached shall be provided in the immediate vicinity of the work assigned.

(c) Work assigned over water where the vertical drop from an accidental fall would exceed 50 feet, shall be subject to specific procedures as approved by the department.

(d) Lines attached to life rings shall be at least 90 feet in length, at least 1/4 inch in diameter and have a minimum breaking strength of 500 pounds.

(e) Life rings must be United States Coast Guard approved 30 inch size.

(f) Life rings and attached lines must be maintained to retain at least 75 percent of their designed buoyance and strength.

[Order 76-6, § 296-24-086, filed 3/1/76.]

WAC 296-24-088 Occupational foot protection. (1) General requirements. Each affected employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards.

(2) Criteria for protective footwear.

(a) Protective footwear purchased after February 20, 1995, shall comply with ANSI Z41-1991, "American National Standard for Personal Protection—Protective Footwear," which is incorporated by reference, or shall be demonstrated by the employer to be equally effective.

(b) Protective footwear purchased before February 20, 1995, shall comply with the ANSI standard "USA Standard for Men's Safety-Toe Footwear," ANSI Z41.1-1967, which is incorporated by reference, or shall be demonstrated by the employer to be equally effective.

(3) Calks or other suitable footwear which will afford reasonable protection from slipping shall be worn while working on logs.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-088, filed 9/30/94, effective 11/20/94; 94-15-096 (Order 94-07), § 296-24-088, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-088, filed 5/9/73 and Order 73-4, § 296-24-088, filed 5/7/73.]

WAC 296-24-090 Hand protection. (1) General requirements. Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

(2) Selection. Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-090, filed 9/30/94, effective 11/20/94.]

WAC 296-24-092 Electrical protective equipment. (1) Design requirements. Insulating blankets, matting, covers, line hose, gloves, and sleeves made of rubber shall meet the following requirements:

(a) Manufacture and marking.

(i) Blankets, gloves, and sleeves shall be produced by a seamless process.

(ii) Each item shall be clearly marked as follows:

(A) Class 0 equipment shall be marked Class 0.

(B) Class 1 equipment shall be marked Class 1.

(C) Class 2 equipment shall be marked Class 2.

(D) Class 3 equipment shall be marked Class 3.

(E) Class 4 equipment shall be marked Class 4.

(F) Nonozone-resistant equipment other than matting shall be marked Type I.

(G) Ozone-resistant equipment other than matting shall be marked Type II.

(H) Other relevant markings, such as the manufacturer's identification and the size of the equipment, may also be provided.

(iii) Markings shall be nonconducting and shall be applied in such a manner as not to impair the insulating qualities of the equipment.

(iv) Markings on gloves shall be confined to the cuff portion of the glove.

(b) Electrical requirements.

(i) Equipment shall be capable of withstanding the a-c proof-test voltage specified in Table A-2 or the d-c proof-test voltage specified in Table A-3.

(A) The proof-test shall reliably indicate that the equipment can withstand the voltage involved.

(B) The test voltage shall be applied continuously for three minutes for equipment other than matting and shall be applied continuously for one minute for matting.

(C) Gloves shall also be capable of withstanding the a-c proof-test voltage specified in Table A-2 after a sixteen-hour water soak. (See the note following (c)(ii)(B) of this subsection.)

(ii) When the a-c proof-test is used on gloves, the 60 hertz proof-test current may not exceed the values specified in Table A-2 at any time during the test period.

(A) If the a-c proof-test is made at a frequency other than 60 hertz, the permissible proof-test current shall be computed from the direct ratio of the frequencies.

(B) For the test, gloves (right side out) shall be filled with tap water and immersed in water to a depth that is in accordance with Table A-4. Water shall be added to or removed from the glove, as necessary, so that the water level is the same inside and outside the glove.

(C) After the sixteen-hour water soak specified in (b)(i)(C) of this subsection, the 60-hertz proof-test current may exceed the values given in Table A-2 by not more than 2 milliamperes.

(iii) Equipment that has been subjected to a minimum breakdown voltage test may not be used for electrical protection. (See the note following (c)(ii)(B) of this subsection.)

(iv) Material used for Type II insulating equipment shall be capable of withstanding an ozone test, with no visible effects. The ozone test shall reliably indicate that the material will resist ozone exposure in actual use. Any visible signs of ozone deterioration of the material, such as checking, cracking, breaks, or pitting, is evidence of failure to meet the requirements for ozone-resistant material. (See the note following (c)(ii)(B) of this subsection.)

(c) Workmanship and finish.

(i) Equipment shall be free of harmful physical irregularities that can be detected by the tests or inspections required under this section.

(ii) Surface irregularities that may be present on all rubber goods because of imperfections on forms or molds or because of inherent difficulties in the manufacturing process and that may appear as indentations, protuberances, or imbedded foreign material are acceptable under the following conditions:

(A) The indentation or protuberance blends into a smooth slope when the material is stretched.

(B) Foreign material remains in place when the insulating material is folded and stretches with the insulating material surrounding it.

Note: Rubber insulating equipment meeting the following national consensus standards is deemed to be in compliance with subsection (1) of this section:
American Society for Testing and Materials (ASTM) D 120-87, Specification for Rubber Insulating Gloves.
ASTM D 178-93, Specification for Rubber Insulating Matting.
ASTM D 1048-93, Specification for Rubber Insulating Blankets.
ASTM D 1049-93, Specification for Rubber Insulating Covers.
ASTM D 1050-90, Specification for Rubber Insulating Line Hose.
ASTM D 1051-87, Specification for Rubber Insulating Sleeves.
These standards contain specifications for conducting the various tests required in subsection (1) of this section. For example, the a-c and d-c proof-tests, the breakdown test, the water soak procedure, and the ozone test mentioned in this paragraph are described in detail in the ASTM standards.

(2) In-service care and use.

(a) Electrical protective equipment shall be maintained in a safe, reliable condition.

(b) The following specific requirements apply to insulating blankets, covers, line hose, gloves, and sleeves made of rubber:

(i) Maximum use voltages shall conform to those listed in Table A-5.

(ii) Insulating equipment shall be inspected for damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage. Insulating gloves shall be given an air test, along with the inspection.

(iii) Insulating equipment with any of the following defects may not be used:

(A) A hole, tear, puncture, or cut;

(B) Ozone cutting or ozone checking (the cutting action produced by ozone on rubber under mechanical stress into a series of interlacing cracks);

(C) An embedded foreign object;

(D) Any of the following texture changes: Swelling, softening, hardening, or becoming sticky or inelastic.

(E) Any other defect that damages the insulating properties.

(iv) Insulating equipment found to have other defects that might affect its insulating properties shall be removed from service and returned for testing under (b)(viii)(ix) of this subsection.

(v) Insulating equipment shall be cleaned as needed to remove foreign substances.

(vi) Insulating equipment shall be stored in such a location and in such a manner as to protect it from light, temperature extremes, excessive humidity, ozone, and other injurious substances and conditions.

(vii) Protector gloves shall be worn over insulating gloves.

(viii) Electrical protective equipment shall be subjected to periodic electrical tests. Test voltages and the maximum intervals between tests shall be in accordance with Table A-5 and Table A-6.

(ix) The test method used under (b)(viii) and (xi) of this subsection shall reliably indicate whether the insulating equipment can withstand the voltages involved.

Note: Standard electrical test methods considered as meeting this requirement are given in the following national consensus standards:
American Society for Testing and Materials (ASTM) D 120-87, Specification for Rubber Insulating Gloves.
ASTM D 1048-93, Specification for Rubber Insulating Blankets.
ASTM D 1049-93, Specification for Rubber Insulating Covers.
ASTM D 1050-90, Specification for Rubber Insulating Line Hose.
ASTM D 1051-87, Specification for Rubber Insulating Sleeves.
ASTM F 478-92, Specification for In-Service Care of Insulating Line Hose and Covers.
ASTM F 479-88a, Specification for In-Service Care of Insulating Blankets.
ASTM F 496-93b, Specification for In-Service Care of Insulating Gloves and Sleeves.

(x) Insulating equipment failing to pass inspections or electrical tests shall not be used by employees, except as follows:

(A) Rubber insulating line hose could be used in shorter lengths with the defective portion cut off.

(B) Rubber insulating blankets could be repaired using a compatible patch that results in physical and electrical properties equal to those of the blanket.

(C) Rubber insulating blankets could be salvaged by severing the defective area from the undamaged portion of the blanket. The resulting undamaged area shall not be smaller than twenty-two inches by twenty-two inches (560 mm by 560 mm) for Class 1, 2, 3, and 4 blankets.

(xi) Repaired insulating equipment shall be retested before it may be used by employees.

(xii) The employer shall certify that equipment has been tested in accordance with the requirements of (b)(viii), (ix), and (xi) of this subsection. The certification shall identify the equipment that passed the test and the date it was tested.

Note: Marking of equipment and entering the results of the tests and the dates of testing onto logs are two acceptable means of meeting this requirement.

Table A-2. -A-C Proof-Test Requirements

Class of equipment	Proof-test voltage rms V	Maximum proof-test current, mA (gloves only) 267-mm (10.5-in) glove	356-mm (14-in) glove	406-mm (16-in) glove	457-mm (18-in) glove
0	5,000	8	12	14	16
1	10,000		14	16	18
2	20,000		16	18	20
3	30,000		18	20	22
4	40,000			22	24

Table A-3.-D-C Proof-Test Requirements

Class of equipment	Proof-test voltage
0	20,000
1	40,000
2	50,000
3	60,000
4	70,000

Note: The d-c voltages listed in this table are not appropriate for proof testing rubber insulating line hose or covers. For this equipment, d-c proof-tests shall use a voltage high enough to indicate that the equipment can be safely used at the voltages listed in Table A-4. See ASTM D 1050-90 and ASTM D 1049-88 for further information on proof tests for rubber insulating line hose and covers.

Table A-4.-Glove Tests-Water Level[1, 2]

Class of glove	A-C proof-test mm.	A-C proof-test in.	D-C proof-test mm.	D-C proof-test in.
0	38	1.5	38	1.5
1	38	1.5	51	2.0
2	64	2.5	76	3.0
3	89	3.5	102	4.0
4	127	5.0	153	6.0

[1]The water level is given as the clearance from the cuff of the glove to the water line, with a tolerance of 13 mm. (0.5 in.).
[2]If atmospheric conditions make the specified clearances impractical, the clearances may be increased by a maximum of 25 mm. (1 in.).

Table A-5.-Rubber Insulating Equipment Voltage Requirements

Class of equipment	Maximum use voltage[1] a-c-rms	Retest voltage[2] a-c-rms	Retest voltage[2] d-c-rms
0	1,000	5,000	20,000
1	7,500	10,000	40,000
2	17,000	20,000	50,000
3	26,500	30,000	60,000
4	36,000	40,000	70,000

Note: Rubber gloves shall only be used on voltages of 5000 volts phase to phase or less.

[1]The maximum use voltage is the a-c voltage (rms) classification of the protective equipment that designates the maximum nominal design/voltage of the energized system that may be safely worked. The nominal design voltage is equal to the phase-to-phase voltage on multiphase circuits. However, the phase-to-ground potential is considered to be the nominal design/voltage:

1. If there is no multiphase exposure in a system area and if the voltage exposure is limited to the phase-to-ground potential, or

2. If the electrical equipment and devices are insulated or isolated or both so that the multiphase exposure on a grounded wye circuit is removed.

[2]The proof-test voltage shall be applied continuously for at least one minute, but no more than three minutes.

Table A-6.-Rubber Insulating Equipment Test Intervals

Type of equipment	When to test
Rubber insulating line hose	Upon indication that insulating value is suspect.
Rubber insulating covers	Upon indication that insulating value is suspect.
Rubber insulating blankets	Before first issue and every 12 months thereafter.
Rubber insulating gloves	Before first issue and every 6 months thereafter.
Rubber insulating sleeves	Before first issue and every 12 months thereafter.

(3) Where switches or fuses of more than 150 volts to ground are not guarded during ordinary operations, suitable insulating floors, mats or platforms shall be provided on which the operator must stand while handling the switches.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-092, filed 9/30/94, effective 11/20/94; Order 73-5, § 296-24-092, filed 5/9/73 and Order 73-4, § 296-24-092, filed 5/7/73.]

WAC 296-24-094 Lighting and illumination. Refer to WAC 296-62-09003 (General occupational health standards) which shall apply as minimum standards of illumination for industrial interiors.

[Order 74-27, § 296-24-094, filed 5/7/74.]

WAC 296-24-096 Appendix A to Part A-2—References for further information (nonmandatory). The documents in Appendix A provide information which may be helpful in understanding and implementing the standards in Part A-2.

1. Bureau of Labor Statistics (BLS). "Accidents Involving Eye Injuries." Report 597, Washington, D.C.: BLS, 1980.

2. Bureau of Labor Statistics (BLS). "Accidents Involving Face Injuries." Report 604, Washington, D.C.: BLS, 1980.

3. Bureau of Labor Statistics (BLS). "Accidents Involving Head Injuries." Report 605, Washington, D.C.: BLS, 1980.

4. Bureau of Labor Statistics (BLS). "Accidents Involving Foot Injuries." Report 626, Washington, D.C.: BLS, 1981.

5. National Safety Council. "Accident Facts," Annual edition, Chicago, IL: 1981.

6. Bureau of Labor Statistics (BLS). "Occupational Injuries and Illnesses in the United States by Industry," Annual edition, Washington, D.C.: BLS.

7. National Society to Prevent Blindness. "A Guide for Controlling Eye Injuries in Industry," Chicago, IL: 1982.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-096, filed 9/30/94, effective 11/20/94.]

WAC 296-24-098 Appendix B to Part A-2—Nonmandatory compliance guidelines for hazard assessment and personal protective equipment selection. This Appendix is intended to provide compliance assistance for employers and employees in implementing requirements for a hazard assessment and the selection of personal protective equipment.

(1) Controlling hazards. PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices.

(2) Assessment and selection. It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational or educational operation or process, and to match the protective devices to the particular hazard. It should be the responsibility of the safety officer to exercise reasonable diligence and appropriate expertise to accomplish these tasks.

(3) Assessment guidelines. In order to assess the need for PPE the following steps should be taken:

(a) Survey. Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

(i) Impact;

(ii) Penetration;

(iii) Compression (roll-over);

(iv) Chemical;

(v) Heat;

(vi) Harmful dust;

(vii) Light (optical) radiation.

(b) Sources. During the walk-through survey the safety officer should observe:

(i) Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects;

(ii) Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.;

(iii) Types of chemical exposures;

(iv) Sources of harmful dust;

(v) Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.;

(vi) Sources of falling objects or potential for dropping objects;

(vii) Sources of sharp objects which might pierce the feet or cut the hands;

(viii) Sources of rolling or pinching objects which could crush the feet;

(ix) Layout of workplace and location of co-workers; and

(x) Any electrical hazards. In addition, injury/accident data should be reviewed to help identify problem areas.

(c) Organize data. Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare for an analysis of the hazards in the environment to enable proper selection of protective equipment.

(d) Analyze data. Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards (subsection (3)(a) of this section) should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

(4) Selection guidelines. After completion of the procedures in subsection (3) of this section, the general procedure for selection of protective equipment is to:

(a) Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e., splash protection, impact protection, etc.;

(b) Compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment;

(c) Select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards; and

(d) Fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE.

(5) Fitting the device. Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected.

(6) Devices with adjustable features. Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Particular care should be taken in fitting devices for eye protection against dust and chemical splash to ensure that the devices are sealed to the face. In addition, proper fitting of helmets is important to ensure that it will not fall off during work operations. In some cases a chin strap may be necessary to keep the helmet on an employee's head. (Chin straps should break at a reasonably low force, however, so as to prevent a strangulation hazard.) Where manufacturer's instructions are available, they should be followed carefully.

(7) Reassessment of hazards. It is the responsibility of the safety officer to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE.

(8) Selection chart guidelines for eye and face protection. Some occupations (not a complete list) for which eye protection should be routinely considered are: Carpenters, electricians, machinists, mechanics and repairers, millwrights, plumbers and pipe fitters, sheet metal workers and tinsmiths, assemblers, sanders, grinding machine operators, lathe and milling machine operators, sawyers, welders, laborers, chemical process operators and handlers, and timber cutting and logging workers. The following chart provides general guidance for the proper selection of eye and face protection to protect against hazards associated with the listed hazard "source" operations.

Eye and Face Protection Selection Chart

Source	Assessment of Hazard	Protection
IMPACT—Chipping, grinding machining, masonry work, sawing, drilling, chiseling, powered fastening, riveting, woodworking, and sanding.	Flying fragments, objects, large chips, particles sand, dirt, etc.	Spectacles with side protection, goggles, face shields. See notes 1, 3, 5, 6, 10. For severe exposure, use face shield.
HEAT—Furnace operations, pouring, casting, hot dipping, and welding.	Hot sparks	Face shields, goggles, spectacles with side protection. For severe exposure use face shield. See notes 1, 2, 3.
	Splash from molten metals	Face shields worn over goggles. See notes 1, 2, 3.
	High temperature exposure	Screen face shields, reflective face shields. See notes 1, 2, 3.
CHEMICALS—Acid and chemicals handling, plating.	Splash	Goggles, eyecup and cover types. For severe degreasing exposure, use face shield. See notes 3, 11.
	Irritating mists	Special-purpose goggles.
DUST—Woodworking, dusty conditions.	Nuisance dust	Goggles, eyecup and buffing, general cover types. See note 8.
LIGHT and/or RADIATION—		
Welding: Electric arc.	Optical radiation	Welding helmets or welding shields. Typical shades: 10-14. See notes 9, 12.
Welding: Gas.	Optical radiation	Welding goggles or welding face shield. Typical shades: Gas welding 4-8, cutting 3-6, brazing 3-4. See note 9.
Cutting, Torch brazing, Torch soldering.	Optical radiation	Spectacles or welding face shield. Typical shades, 1.5-3. See notes 3, 9.
Glare.	Poor vision	Spectacles with shaded or special-purpose lenses, as suitable. See notes 9, 10.

Notes to Eye and Face Protection Selection Chart:

1. Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.
2. Operations involving heat may also involve light radiation. As required by the standard, protection from both hazards must be provided.
3. Face shields should only be worn over primary eye protection (spectacles or goggles).
4. As required by the standard, filter lenses must meet the requirements for shade designations in WAC 296-24-07801(5). Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.
5. As required by the standard, persons whose vision requires the use of prescription (Rx) lenses must wear either protective devices fitted with prescription (Rx) lenses or protective devices designed to be worn over regular prescription (Rx) eyewear.
6. Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments may represent an additional hazard to contact lens wearers.
7. Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.
8. Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.
9. Welding helmets or face shields should be used only over primary eye protection (spectacles or goggles).
10. Nonsideshield spectacles are available for frontal protection only, but are not acceptable eye protection for the sources and operations listed for "impact."
11. Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.
12. Protection from light radiation is directly related to filter lens density. See note (4). Select the darkest shade that allows task performance.

(9) Selection guidelines for head protection. All head protection (helmets) is designed to provide protection from impact and penetration hazards caused by falling or flying objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts). Class B helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors (they are proof tested to 20,000 volts). Class C helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards. Where falling or flying object hazards are present, helmets must be worn. Some examples include: Working below other workers who are using tools and materials which could fall; working around or under conveyor belts which are carrying parts or materials; working below machinery or processes which might cause material or objects to fall; and working on exposed energized conductors. Some examples of occupations for which head protection should be routinely considered are: Carpenters, electricians, linemen, mechanics and repairers, plumbers and pipe fitters, assemblers, packers, wrappers, sawyers, welders, laborers, freight handlers, timber cutting and logging, stock handlers, and warehouse laborers.

(10) Selection guidelines for foot protection. Safety shoes and boots which meet the ANSI Z41-1991 Standard provide both impact and compression protection. Where necessary, safety shoes can be obtained which provide puncture protection. In some work situations, metatarsal protection should be provided, and in other special situations electrical conductive or insulating safety shoes would be appropriate. Safety shoes or boots with impact protection would be required for carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped; and, for other activities where objects might fall onto the feet. Safety shoes or boots with compression protection would be required for work activities involving skid trucks (manual material handling carts) around bulk rolls (such as paper rolls) and around heavy pipes, all of which could potentially roll over an employee's feet. Safety shoes or boots with puncture protection would be required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal, etc., could be stepped on by employees causing a foot injury. Some occupations (not a complete list) for which foot protection should be routinely considered are: Shipping and receiving clerks, stock clerks, carpenters, electricians, machinists, mechanics and repairers, plumbers and pipe fitters, structural metal workers, assemblers, drywall installers and lathers, packers, wrappers, craters, punch and stamping press operators, sawyers, welders, laborers, freight handlers, gardeners and grounds-keepers, timber cutting and logging workers, stock handlers and warehouse laborers.

(11)(a) Selection guidelines for hand protection. Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systemic effects following dermal exposure. WISHA is unaware of any gloves that provide protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many chemicals. Therefore, it is important to select the most appropriate glove for a particular application and to determine how long it can be worn, and whether it can be reused. It is also important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, cut hazards, flame hazards, etc. These performance characteristics should be assessed by using standard test procedures. Before purchasing gloves, the employer should request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated. Other factors to be considered for glove selection in general include:

(i) As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse more expensive types; and

(ii) The work activities of the employee should be studied to determine the degree of dexterity required, the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied.

(b) With respect to selection of gloves for protection against chemical hazards:

(i) The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects;

(ii) Generally, any "chemical resistant" glove can be used for dry powders;

(iii) For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials; and

(iv) Employees must be able to remove the gloves in such a manner as to prevent skin contamination.

(12) Cleaning and maintenance. It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. For the purposes of compliance with WAC 296-24-07501 (1)(a) and (b), PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection. It is also important to ensure that contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-098, filed 9/30/94, effective 11/20/94.]

PART A-3
LATE NIGHT RETAIL WORKER CRIME PROTECTION

WAC 296-24-102 Scope and application. Application of this section is limited to retail establishments operating between the hours of 11:00 p.m. and 6:00 a.m. with the exception of restaurants, hotels, taverns, or any lodging facility.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-102, filed 1/11/90, effective 2/26/90.]

WAC 296-24-10203 General requirements. (1) All employers operating late night retail establishments shall provide crime prevention training to their employees.

(2) Crime prevention training shall be a part of the accident prevention program requirements imposed pursuant to WAC 296-24-040.

(3) The employer shall provide training to ensure that the purpose and function of robbery and violence prevention are understood by employees and that the knowledge and skills required for their safety have been provided. The employer shall:

(a) Provide training and training materials that outline security policies, safety and security procedures, and personal safety and crime avoidance techniques.

(b) Provide formal instruction through a training seminar or training video presentation and upon completion require the employee to sign off on the date, time, and place of training. The training documentation will be placed in the employee's personnel file. The following elements shall be included in the crime prevention training program:

(i) An explanation of the importance of keeping the store clean, neat, and uncluttered thereby making it as unattractive as possible to robbers.

(ii) Provide explanation of the purpose of maintaining an unobstructed view of the cash register from outside the store, provided the cash register is located in a position visible from the street.

(iii) Provide instruction on reasons for operating only minimum number of cash registers at night.

(iv) Keeping the cash register fund to a minimum.

(v) Taking extra precautions after dark, i.e., keep alert, observe lighting and dark corners, spot possible hiding places.

(vi) Violence prevention procedures in case of robbery.

(vii) Provide a refresher course on crime prevention on or near the employee's anniversary date. Videotape and crime prevention material shall be available for employee's review at their request.

(4) In addition to providing crime prevention training as defined in this section, all employers operating late night retail establishments shall:

(a) Post a conspicuous sign in the window or door which states that there is a safe on the premises and it is not accessible to the employees on the premises and that the cash register contains only the minimal amount of cash needed to conduct business: No employer shall be subject to citation and penalty for having moneys in the cash register in excess of the minimal amount needed to conduct business.

(b) All displays, and any other material posted in window(s) or door(s) should be arranged so as to provide a clear and unobstructed view of the cash register; provided the cash register is located in such a position so as to be visible from the street.

(c) Have a drop-safe, limited access safe, or comparable device on the premises.

(d) Operate the outside lights for that portion of the approach and parking area that is necessary to accommodate customers during all night hours the late night retail establishment is open. This may be accomplished through:

(i) Surveillance lighting - to detect and observe pedestrian and vehicular entrances.

(ii) Providing adequate illuminances - adequate illuminance throughout the pedestrian and vehicular entrance areas should be a minimum of one foot candle to comply with ANSI/IES RP7-1983.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-10203, filed 1/11/90, effective 2/26/90.]

PART A-4
SAFETY PROCEDURES

WAC 296-24-110 The control of hazardous energy (lockout/tagout).

[Statutory Authority: Chapter 49.17 RCW. 90-20-091 (Order 90-14), § 296-24-110, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11001 Scope, application, and purpose. (1) Scope.

(a) This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machine or equipment or release of stored energy could cause injury to employees. This standard establishes minimum performance requirements for the control of such hazardous energy. This section shall apply to agriculture March 1, 1995.

(b) This standard does not cover the following:

(i) Construction and maritime employment;

(ii) Installations under the exclusive control of electric utilities for the purpose of power generation, transmission, and distribution, including related equipment for communications or metering; and

(iii) Exposure to electrical hazards from work on, near, or with conductors or equipment in electric utilization installations, which is covered by Part L of chapter 296-24 WAC; and

(iv) Oil and gas well drilling and servicing.

(2) Application.

(a) This standard applies to the control of energy during servicing and/or maintenance of machines and equipment.

(b) Normal production operations are not covered by this standard (see Part C of chapter 296-24 WAC). Servicing and/or maintenance which takes place during normal production operations is covered by this standard only if:

(i) An employee is required to remove or bypass a guard or other safety device; or

(ii) An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Note: Exception to subdivision (b) of this subsection. Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection (see Part C of chapter 296-24 WAC).

(c) This standard does not apply to the following:

(i) Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by the unplugging

of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

(ii) Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when they are performed on pressurized pipelines, provided that the employer demonstrates that:

(A) Continuity of service is essential;

(B) Shutdown of the system is impractical; and

(C) Documented procedures are followed, and special equipment is used which will provide proven effective protection for employees.

(3) Purpose.

(a) This section requires employers to establish a written program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy in order to prevent injury to employees.

(b) When other Title 296 WAC vertical standards require the use of lockout or tagout, they shall be used and supplemented by the procedural and training requirements of this part.

[Statutory Authority: Chapter 49.17 RCW. 94-06-068 (Order 93-17), § 296-24-11001, filed 3/2/94, effective 3/1/95. Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11001, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11001, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11001, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11003 Definitions applicable to this part. (1) Affected employee. An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

(2) Authorized employee. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this part.

(3) Capable of being locked out. An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

(4) Energized. Connected to an energy source or containing residual or stored energy.

(5) Energy isolating device. A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches, and other control circuit type devices are not energy isolating devices.

(6) Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy, including gravity.

(7) Hot tap. A procedure used in the repair, maintenance, and services activities which involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

(8) Lockout. The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

(9) Lockout device. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevents the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

(10) Normal production operations. The utilization of a machine or equipment to perform its intended production function.

(11) Servicing and/or maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

(12) Setting up. Any work performed to prepare a machine or equipment to perform its normal production operation.

(13) Tagout. The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

(14) Tagout device. A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

[Statutory Authority: Chapter 49.17 RCW. 93-19-142 (Order 93-04), § 296-24-11003, filed 9/22/93, effective 11/1/93. Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11003, filed 10/30/92, effective 12/08/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11003, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11003, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11005 General. (1) Energy control program. The employer shall establish a written program consisting of an energy control procedure, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, start up, or

release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source, and rendered inoperative.

(2) Lockout/tagout.

(a) If an energy isolating device is not capable of being locked out, the employer's energy control program under subsection (1) of this section shall utilize a tagout system.

(b) If an energy isolating device is capable of being locked out, the employer's energy control program under subsection (1) of this section shall utilize lockout unless the employer can demonstrate that the utilization of a tagout system will provide full employee protection as set forth in subsection (3) of this section.

(c) After the effective date of this section, whenever major replacement or major repair, renovation, or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment shall be designed to accept a lockout device.

(3) Full employee protection.

(a) When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that
the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.

(b) In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety obtained by using a lockout program, the employer shall demonstrate full compliance with all tagout-related provisions of this standard together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection shall include the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

(4) Energy control procedure.

(a) Procedures shall be developed, documented, and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section.

Note: Exception: The employer need not document the required procedure for a particular machine or equipment when all of the following elements exist:
(i) The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees;
(ii) The machine or equipment has a single energy source which can be readily identified and isolated;
(iii) The isolation and locking out of that energy source will completely deenergize and deactivate the machine or equipment;
(iv) The machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
(v) A single lockout device will achieve a locked-out condition;
(vi) The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;
(vii) The servicing or maintenance does not create hazards for other employees; and
(viii) The employer, in utilizing this exception, has had no accidents involving the unexpected activation or reenergization of the machine or equipment during servicing or maintenance.

(b) The procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

(i) A specific statement of the intended use of the procedure;

(ii) Specific procedural steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy;

(iii) Specific procedural steps for the placement, removal, and transfer of lockout devices or tagout devices and the responsibility for them; and

(iv) Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

(5) Protective materials and hardware.

(a) Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided by the employer for isolating, securing, or blocking of machines or equipment from energy sources.

(b) Lockout devices and tagout devices shall be singularly identified; shall be the only device(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

(i) Durable.

(A) Lockout devices and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

(B) Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

(C) Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

(ii) Standardized. Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.

(iii) Substantial.

(A) Lockout devices. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

(B) Tagout devices. Tagout devices, including and their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a nonreusable type, attachable by hand, self-locking, and nonreleasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

(C) Identifiable. Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

(c) Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: Do not start, do not open, do not close, do not energize, do not operate.

(6) Periodic inspection.

(a) The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed.

(i) The periodic inspection shall be performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected.

(ii) The periodic inspection shall be conducted to correct any deviations or inadequacies identified.

(iii) Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

(iv) Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in subsection (7)(b) of this section.

(b) The employer shall certify that the periodic inspections have been performed. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

(7) Training and communication.

(a) The employer shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

(i) Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

(ii) Each affected employee shall be instructed in the purpose and use of the energy control procedure.

(iii) All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

(b) When tagout systems are used, employees shall also be trained in the following limitations of tags:

(i) Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.

(ii) When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

(iii) Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.

(iv) Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

(v) Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

(vi) Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

(c) Employee retraining.

(i) Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

(ii) Additional retraining shall also be conducted whenever a periodic inspection under subsection (6) of this section reveals, or whenever the employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

(iii) The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

(d) The employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

(8) Energy isolation. Lockout or tagout shall be performed only by authorized employees who are performing the servicing or maintenance.

(9) Notification of employees. Affected employees shall be notified by the employer or authorized employee of the application and removal of lockout devices or tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11005, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11005, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11005, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11007 Application of control. (1) The established procedures for the application of energy control (the lockout or tagout procedures) shall cover the following elements and actions and shall be done in the following sequence:

(a) Preparation for shutdown. Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

(b) Machine or equipment shutdown. The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of equipment stoppage.

(c) Machine or equipment isolation. All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

(2) Lockout or tagout device application.

(a) Lockout or tagout devices shall be affixed to each energy isolating device by authorized employees.

(b) Lockout devices, where used, shall be affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position.

(c) Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.

(i) Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.

(ii) Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

(3) Stored energy.

(a) Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

(b) If there is a possibility of reaccumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

(4) Verification of isolation. Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and deenergization of the machine or equipment have been accomplished.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11007, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11007, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11007, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11009 Release from lockout or tagout. (1) Release from lockout or tagout.

(a) Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures shall be followed and actions taken by the authorized employee(s) to ensure the following:

(b) The machine or equipment. The work area shall be inspected to ensure that nonessential items have been removed and to ensure that machine or equipment components are operationally intact.

(2) Employees.

(a) The work area shall be checked to ensure that all employees have been safely positioned or removed.

(b) After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees shall be notified that the lockout or tagout device(s) have been removed.

(3) Lockout or tagout devices removal. Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device. Exception: When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the employer, provided that specific procedures and training for such removal have been developed, documented, and incorporated into the employer's energy control program. The employer shall demonstrate that the specific procedure provides equivalent safety to the removal of the device by the authorized employee who applied it. The specific procedure shall include at least the following elements:

(a) Verification by the employer that the authorized employee who applied the device is not at the facility;

(b) Making all reasonable efforts to contact the authorized employee to inform him/her that his/her lockout or tagout device has been removed; and

(c) Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11009, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11009, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11009, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11011 Additional requirements. (1) Testing or positioning of machines, equipment, or components thereof.

In situations in which lockout or tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions shall be followed:

(a) Clear the machine or equipment of tools and materials in accordance with WAC 296-24-11009 (1)(b);

(b) Remove employees from the machine or equipment area in accordance with WAC 296-24-11009(2);

(c) Remove the lockout or tagout devices as specified in WAC 296-24-11009(3);

(d) Energize and proceed with testing or positioning;

(e) Deenergize all systems and reapply energy control measures in accordance with WAC 296-24-11007 to continue the servicing and/or maintenance.

(2) Outside personnel (contractors, etc.).

(a) Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this standard, the on-site employer and the outside employer shall inform each other of their respective lockout or tagout procedures.

(b) The outside employer shall assure that his/her employees understand and comply with the restrictions and prohibitions of the on-site employer's energy control program.

(3) Group lockout or tagout.

(a) When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device.

(b) Group lockout or tagout devices shall be used in accordance with the procedures required by WAC 296-24-11005(4) including, but not necessarily limited to, the following specific requirements:

(i) Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);

(ii) Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment; and

(iii) When more than one crew, craft, department, etc., is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and

(iv) Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

(4) Shift or personnel changes. Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or release of stored energy.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11011, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11011, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11011, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11013 Reserved.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11013, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11013, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11013, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11015 Reserved.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11015, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11015, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11015, filed 10/1/90, effective 11/15/90.]

WAC 296-24-11017 Reserved.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-11017, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-11017, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-11017, filed 10/1/90, effective 11/15/90.]

WAC 296-24-119 Appendices.

APPENDIX A

Appendix A - Typical Minimal Lockout Procedure—Nonmandatory.

(1) General.

The following simple lockout procedure is provided to assist employers in developing their procedures so they meet the requirements of this standard. When the energy isolating devices are not lockable, tagout may be used, provided the employer complies with the provisions of the standard which require additional training and more rigorous periodic inspections. When tagout is used and the energy isolating devices are lockable, the employer must provide full employee protection (see WAC 296-24-11005(3)) and additional training and more rigorous periodic inspections are required. For more complex systems, more comprehensive procedures may need to be developed, documented and utilized.

Lockout Procedure

Lockout procedure for

(Name of Company for single procedure or identification of equipment if multiple procedures are used.)

(2) Purpose.

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

(3) Compliance with this program.

(a) All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize or use that machine or equipment.

(b) Type of compliance enforcement to be taken for violation of the above.

(4) Sequence of lockout.

(a) Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

Name(s)/job title(s) of affected employees and how to notify.

(b) The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.

Type(s) and magnitude(s) of energy, its hazards and the methods to control the energy.

(c) If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).

Type(s) and location(s) of machine or equipment operating controls.

(d) Deactivate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

Type(s) and location(s) of energy isolating devices.

(e) Lock out the energy isolating device(s) with assigned individual lock(s).

(f) Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

Type(s) of stored energy - methods to dissipate or restrain.

(g) Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are

exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

CAUTION: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

Method of verifying the isolation of the equipment.

(h) The machine or equipment is now locked out.

(5) Restoring equipment to service.

(a) When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

(b) Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.

(c) Check the work area to ensure that all employees have been safely positioned or removed from the area.

(d) Verify that the controls are in neutral.

(e) Remove the lockout devices and reenergize the machine or equipment.

Note: The removal of some forms of blocking may require reenergization of the machine before safe removal.

(f) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-24-119, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-119, filed 5/20/91, effective 6/20/91; 90-20-091 (Order 90-14), § 296-24-119, filed 10/1/90, effective 11/15/90.]

PART B-1
SANITATION, TEMPORARY LABOR CAMPS AND NONWATER CARRIAGE DISPOSAL SYSTEMS

Sanitation

WAC 296-24-120 Sanitation.

Note: Rules and regulations of the state board of health governing sanitation of places of work shall be complied with by every employer, and shall be enforced as provided for by statute law (RCW 43.20.050).

[Order 73-5, § 296-24-120, filed 5/9/73 and Order 73-4, § 296-24-120, filed 5/7/73.]

WAC 296-24-12001 Scope. This scope includes all sections of WAC 296-24-120 in the numbering and applies to all permanent places of employment except where domestic, or mining work only is performed. This section shall apply to agriculture March 1, 1995. Measures for the control of toxic materials are considered to be outside the scope of this section.

[Statutory Authority: Chapter 49.17 RCW. 94-06-068 (Order 93-17), § 296-24-12001, filed 3/2/94, effective 3/1/95; Order 74-27, § 296-24-12001, filed 5/7/74; Order 73-5, § 296-24-12001, filed 5/9/73 and Order 73-4, § 296-24-12001, filed 5/7/73.]

WAC 296-24-12002 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-120 in the section number.

(1) "Lavatory" means a basin or similar vessel used exclusively for washing of the hands, arms, face and head.

(2) "Nonwater carriage toilet facility" means a toilet facility not connected to a sewer.

(3) "Number of employees" means, unless otherwise specified, the maximum number of employees present at any one time on a regular shift.

(4) "Personal service room" means a room used for activities not directly connected with the production or service function performed by the establishment. Such activities include but are not limited to, first aid, medical services, dressing, showering, toilet use, washing, and eating.

(5) "Potable water" means water which meets the quality standards for drinking purposes of state or local authority having jurisdiction or water that meets the quality standards prescribed by the United States Environmental Protection Agency's National Interim Primary Drinking Water Regulations, published in 40 CFR Part 141, and 40 CFR 147.2400.

(6) "Toilet facility" means a fixture maintained within a toilet room for the purpose of defecation or urination, or both.

(7) "Toilet room" means a room maintained within or on the premises of any place of employment, containing toilet facilities for use by employees.

(8) "Toxic material" means a material in concentration or amount which exceeds the applicable limit established by a standard, such as chapter 296-62 WAC or, in the absence of an applicable standard, which is of such toxicity so as to constitute a recognized hazard that is causing or is likely to cause death or serious physical harm.

(9) "Urinal" means a toilet facility maintained within a toilet room for the sole purpose of urination.

(10) "Water closet" means a toilet facility maintained within a toilet room for the purpose of both defecation and urination and which is flushed with water.

(11) "Wet process" means any process or operation in a workroom which normally results in surfaces upon which employees may walk or stand becoming wet.

[Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-24-12002, filed 5/20/91, effective 6/20/91; Order 74-27, § 296-24-12002, filed 5/7/74.]

WAC 296-24-12003 General requirements. Housekeeping.

(1) All places of employment shall be kept clean to the extent that the nature of the work allows.

(2) The floor of every workroom shall be maintained so far as practicable in a dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places shall be provided, where practicable, or appropriate waterproof footgear shall be provided.

(3) To facilitate cleaning, every floor, working place, and passageway shall be kept free from protruding nails, splinters, loose boards and unneccessary holes and openings.

(4) Cleaning and sweeping shall be done in such a manner as to minimize the contamination of the air with dust and so far as is practicable, shall be done outside of working hours.

[Order 74-27, § 296-24-12003, filed 5/7/74; Order 73-5, § 296-24-12003, filed 5/9/73 and Order 73-4, § 296-24-12003, filed 5/7/73.]

WAC 296-24-12005 Water supply. (1) Potable water.

(a) Potable water shall be provided in all places of employment, for drinking, washing of the person, cooking, washing of foods, washing of cooking or eating utensils, washing of food preparation or processing premises, and personal service rooms.

(b) Portable drinking water dispensers shall be designed, constructed, and serviced so that sanitary conditions are maintained, shall be capable of being closed, and shall be equipped with a tap.

(c) Open containers such as barrels, pails, or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, are prohibited.

(d) A common drinking cup and other common utensils are prohibited.

(2) Nonpotable water.

(a) Outlets for nonpotable water, such as water for industrial or firefighting purposes shall be posted or otherwise marked in a manner that will indicate clearly that the water is unsafe and is not to be used for drinking, washing of the person, cooking, washing of food, washing of cooking or eating utensils, washing of food preparation or processing premises, or personal service rooms, or for washing clothes.

(b) Construction of nonpotable water systems or systems carrying any other nonpotable substance shall be such as to prevent backflow or backsiphonage into a potable water system.

Nonpotable water shall not be used for washing any portion of the person, cooking or eating utensils, or clothing. Nonpotable water may be used for cleaning work premises, other than food processing and preparation premises and personal service rooms: *Provided,* That this nonpotable water does not contain concentrations of chemicals, fecal coliform, or other substances which could create unsanitary conditions or be harmful to employees.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-12005, filed 6/11/82; Order 74-27, § 296-24-12005, filed 5/7/74; Order 73-5, § 296-24-12005, filed 5/9/73 and Order 73-4, § 296-24-12005, filed 5/7/73.]

WAC 296-24-12007 Toilet facilities. (1) General.

(a) Except as otherwise indicated in this section, toilet facilities, in toilet rooms separate for each sex, shall be provided in all places of employment in accordance with Table B-1 of this section. The number of facilities to be provided for each sex shall be based on the number of employees of that sex for whom the facilities are furnished. Where toilet rooms will be occupied by no more than one person at a time, can be locked from the inside, and contain at least one water closet, separate toilet rooms for each sex need not be provided. Where such single-occupancy rooms have more than one toilet facility, only one such facility in each toilet room shall be counted for the purpose to Table B-1.

TABLE B-1

Number of employees:	Minimum number of water closets
1 to 15	1
16 to 35	2
36 to 55	3
56 to 80	4
81 to 110	5
111 to 150	6
Over 150	One additional fixture for each additional 40 employees

Where toilet facilities will not be used by women, urinals may be provided instead of water closets, except that the number of water closets in such cases shall not be reduced to less than 2/3 of the minimum specified.

(b) The requirements of subdivision (a) of this subsection do not apply to mobile crews or to normally unattended work locations so long as employees working at these locations have transportation immediately available to nearby toilet facilities which meet the other requirements of this section.

(c) The sewage disposal method shall not endanger the health of employees.

(d) Toilet paper with holder shall be provided for every water closet.

(2) Construction of toilet rooms. Each water closet shall occupy a separate compartment with a door and walls or partitions between fixtures sufficiently high to assure privacy.

[Statutory Authority: Chapter 49.17 RCW. 87-24-051 (Order 87-24), § 296-24-12007, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-12007, filed 12/24/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-12007, filed 11/13/80; Order 74-27, § 296-24-12007, filed 5/7/74; Order 73-5, § 296-24-12007, filed 5/9/73 and Order 73-4, § 296-24-12007, filed 5/7/73.]

WAC 296-24-12009 Washing facilities. (1) General. Facilities for maintaining personal cleanliness shall be provided in every place of employment pursuant to the provisions of this section. These shall be convenient for the employees for whom they are provided and shall be maintained in a sanitary condition.

(2) Lavatories.

(a) Lavatories shall be made available in all places of employment. The requirements of this subsection do not apply to mobile crews or to normally unattended work locations if employees working at these locations have transportation readily available to nearby washing facilities which meet the other requirements of this section.

(b) Each lavatory shall be provided with hot and cold running water, or tepid running water.

(c) Hand soap or similar cleansing agents shall be provided.

(d) Individual hand towels or sections thereof, of cloth or paper, warm air blowers or clean individual sections of

continuous cloth toweling, convenient to the lavatories, shall be provided.

(3) Showers.

(a) Showers are mandatory on exit from the jobsite when residual chemicals allowed to remain on the skin between work shifts could cause a serious occupational illness.

(b) The employer is responsible for identifying such potential hazards and for insisting that the employee shower at the end of the shift.

(c) Whenever showers are required by a particular standard, the showers shall be provided, in accordance with items (i) through (iv) as follows:

(i) One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.

(ii) Body soap or other appropriate cleansing agents convenient to the showers shall be provided as specified in this section.

(iii) Showers shall be provided with hot and cold water feeding a common discharge line.

(iv) Employees who use showers shall be provided with individual clean towels.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-12009, filed 1/11/90, effective 2/26/90. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-12009, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-12009, filed 11/13/80; Order 74-27, § 296-24-12009, filed 5/7/74; Order 73-5, § 296-24-12009, filed 5/9/73 and Order 73-4, § 296-24-12009, filed 5/7/73.]

WAC 296-24-12011 Change rooms. (1) Whenever employees are required by a particular standard to wear protective clothing because of the possibility of contamination with toxic materials, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing shall be provided.

(2) Clothes drying facilities. Where working clothes are provided by the employer and become wet or are washed between shifts, provisions shall be made to insure that such clothing is dry before reuse.

[Order 74-27, § 296-24-12011, filed 5/7/74; Order 73-5, § 296-24-12011, filed 5/9/73 and Order 73-4, § 296-24-12011, filed 5/7/73.]

WAC 296-24-12017 Consumption of food and beverages on the premises. (1) Application. This section shall apply only where employees are permitted to consume food or beverages, or both, on the premises.

(2) Eating and drinking areas. No employee shall be allowed to consume food or beverages in a toilet room nor in any area exposed to a toxic material.

(3) In every establishment where there is exposure to injurious dusts or other toxic materials, a separate lunchroom shall be maintained unless it is convenient for the employees to lunch away from the premises. The following number of square feet per person, based on the maximum number of persons using the room at one time, shall be required:

Number of persons	Square feet per person
25 and less	13
26-74	12
75-149	11
150 and over	10

(4) Waste disposal containers. Receptacles, constructed of smooth, corrosion resistant, easily cleanable, or disposable materials, shall be provided and used for the disposal of waste food. The number, size, and location of such receptacles shall encourage their use and not result in overfilling. They shall be emptied not less frequently than once each working day, unless unused, and shall be maintained in a clean and sanitary condition. Receptacles shall be provided with a solid tight-fitting cover unless sanitary conditions can be maintained without use of a cover.

(5) Sanitary storage. No food or beverages shall be stored in toilet rooms or in an area exposed to a toxic material.

(6) Food handling. All employee food service facilities and operations shall be carried out in accordance with sound hygienic principles. In all places of employment where all or part of the food service is provided, the food dispensed shall be wholesome, free from spoilage, and shall be processed, prepared, handled, and stored in such a manner as to be protected against contamination.

[Order 76-6, § 296-24-12017, filed 3/1/76; Order 74-27, § 296-24-12017, filed 5/7/74.]

WAC 296-24-12019 Waste disposal. (1) Any receptacle used for putrescible solid or liquid waste or refuse shall be so constructed that it does not leak and may be thoroughly cleaned and maintained in a sanitary condition. Such a receptacle shall be equipped with a solid tight-fitting cover, unless it can be maintained in a sanitary condition without a cover. This requirement does not prohibit the use of receptacles which are designed to permit the maintenance of a sanitary condition without regard to the aforementioned requirements.

(2) All sweepings solid or liquid wastes, refuse, and garbage shall be removed in such a manner as to avoid creating a menace to health and as often as necessary or appropriate to maintain the place of employment in a sanitary condition.

[Order 74-27, § 296-24-12019, filed 5/7/74.]

WAC 296-24-12021 Vermin control. Every building shall be so constructed, equipped, and maintained so as to restrict the entrance or harborage of rodents, insects, and other vermin. A continuing and effective extermination program shall be instituted where their presence is detected.

[Order 74-27, § 296-24-12021, filed 5/7/74.]

WAC 296-24-125 Temporary labor camps.

[Order 73-5, § 296-24-125, filed 5/9/73 and Order 73-4, § 296-24-125, filed 5/7/73.]

WAC 296-24-12501 Site. (1) All sites used for camps shall be adequately drained. They shall not be subject

to periodic flooding, nor located within 200 feet of swamps, pools, sink holes, or other surface collections of water unless such quiescent water surfaces can be subjected to mosquito control measures. The camp shall be located so the drainage from and through the camp will not endanger any domestic or public water supply. All sites shall be graded, ditched, and rendered free from depressions in which water may become a nuisance.

(2) All sites shall be adequate in size to prevent overcrowding of necessary structures. The principal camp area in which food is prepared and served and where sleeping quarters are located shall be at least 500 feet from any area in which livestock is kept.

(3) The grounds and open areas surrounding the shelters shall be maintained in a clean and sanitary condition free from rubbish, debris, waste paper, garbage, or other refuse.

(4) Whenever the camp is closed for the season or permanently, all garbage, manure, and other refuse shall be collected and so disposed of as to prevent nuisance. All abandoned privy pits shall be filled with earth and the grounds and buildings left in a clean and sanitary condition. If privy buildings remain, they shall be locked or otherwise secured to prevent entrance.

[Order 73-5, § 296-24-12501, filed 5/9/73 and Order 73-4, § 296-24-12501, filed 5/7/73.]

WAC 296-24-12503 Shelter. (1) Every shelter in the camp shall be constructed in a manner which will provide protection against the elements.

(2) Each room used for sleeping purposes shall contain at least 50 square feet of floor space for each occupant. At least a 7-foot ceiling shall be provided.

(3) Beds, cots, or bunks, and suitable storage facilities such as wall lockers for clothing and personal articles shall be provided in every room used for sleeping purposes. Such beds or similar facilities shall be spaced not closer than 36 inches both laterally and end to end, and shall be elevated at least 12 inches from the floor. If double-deck bunks are used, they shall be spaced not less than 48 inches both laterally and end to end. The minimum clear space between the lower and upper bunk shall be not less than 27 inches. Triple-deck bunks are prohibited.

(4) The floors of each shelter shall be constructed of wood, asphalt, or concrete. Wooden floors shall be of smooth and tight construction. The floors shall be kept in good repair.

(5) All wooden floors shall be elevated not less than 1 foot above the ground level at all points to prevent dampness and to permit free circulation of air beneath.

(6) Nothing in this section shall be construed to prohibit "banking" with earth or other suitable material around the outside walls in areas subject to extreme low temperatures.

(7) All living quarters shall be provided with windows the total of which shall be not less than one-tenth of the floor area. At least one-half of each window shall be so constructed that it can be opened for purposes of ventilation.

(8) All exterior openings shall be effectively screened with 16-mesh material. All screen doors shall be equipped with self-closing devices.

(9) Each dwelling unit shall have at least 70 square feet of floor space for the first occupant and at least 50 square feet of floor space for each additional occupant. A separate sleeping area shall be provided for the husband and wife in all family units in which one or more children over six years of age are housed.

(10) In camps where cooking facilities are used in common, stoves (in ratio of one stove to 10 persons or one stove to two families) shall be provided in an enclosed and screened shelter. Sanitary facilities shall be provided for storing and preparing food.

(11) If a camp is used during cold weather, adequate heating equipment shall be provided.

Note: All heating, cooking, and water heating equipment shall be installed in accordance with state and local ordinances, codes, and regulations governing such installations.

[Order 73-5, § 296-24-12503, filed 5/9/73 and Order 73-4, § 296-24-12503, filed 5/7/73.]

WAC 296-24-12505 Water supply. (1) An adequate and convenient water supply, approved by the appropriate health authority, shall be provided in each camp for drinking, cooking, bathing, and laundry purposes.

(2) A water supply shall be deemed adequate if it is capable of delivering 35 gallons per person per day to the campsite at a peak rate of 2 1/2 times the average hourly demand.

(3) The distribution lines shall be capable of supplying water at normal operating pressures to all fixtures for simultaneous operation. Water outlets shall be distributed throughout the camp in such a manner that no shelter is more than 100 feet from a yard hydrant if water is not piped to the shelters.

(4) Where water under pressure is available, one or more drinking fountains shall be provided for each 100 occupants or fraction thereof. The construction of drinking fountains shall comply with ANSI Standard Specifications for Drinking Fountains, Z4.2-1942. Common drinking cups are prohibited.

[Order 73-5, § 296-24-12505, filed 5/9/73 and Order 73-4, § 296-24-12505, filed 5/7/73.]

WAC 296-24-12507 Toilet facilities. (1) Toilet facilities adequate for the capacity of the camp shall be provided.

(2) Each toilet room shall be located so as to be accessible without any individual passing through any sleeping room. Toilet rooms shall have a window not less than 6 square feet in area opening directly to the outside area or otherwise be satisfactorily ventilated. All outside openings shall be screened with 16-mesh material. No fixture, water closet, chemical toilet, or urinal shall be located in a room used for other than toilet purposes.

(3) A toilet room shall be located within 200 feet of the door of each sleeping room. No privy shall be closer than 100 feet to any sleeping room, dining room, lunch area, or kitchen.

(4) Where the toilet rooms are shared, such as in multifamily shelters and in barracks type facilities, separate toilet rooms shall be provided for each sex. These rooms shall be distinctly marked "for men" and "for women" by signs printed in English and in the native language of the persons occupying the camp, or marked with easily understood

pictures or symbols. If the facilities for each sex are in the same building, they shall be separated by solid walls or partitions extending from the floor to the roof or ceiling.

(5) Where toilet facilities are shared, the number of water closets or privy seats provided for each sex shall be based on the maximum number of persons of that sex which the camp is designed to house at any one time, in the ration of one such unit to each 15 persons, with a minimum of two units for any shared facility.

(6) Urinals shall be provided on the basis of one unit or 2 linear feet of urinal trough for each 25 men. The floor from the wall and for a distance not less than 15 inches measured from the outward edge of the urinals shall be constructed of materials impervious to moisture. Where water under pressure is available, urinals shall be provided with an adequate water flush. Urinal troughs in privies shall drain freely into the pit or vault and the construction of this drain shall be such as to exclude flies and rodents from the pit.

(7) Every water closet installed after the effective date of these standards shall be located in a toilet room.

(8) Each toilet room shall be lighted naturally, or artificially at all hours of the day and night as specified in WAC 296-24-12513.

(9) An adequate supply of toilet paper shall be provided in each privy, water closet, or chemical toilet compartment.

(10) Privies and toilet rooms shall be kept in a sanitary condition. They shall be cleaned at least daily.

[Order 73-5, § 296-24-12507, filed 5/9/73 and Order 73-4, § 296-24-12507, filed 5/7/73.]

WAC 296-24-12509 Sewage disposal facilities. In camps where public sewers are available, all sewer lines and floor drains from buildings shall be connected thereto.

[Order 73-5, § 296-24-12509, filed 5/9/73 and Order 73-4, § 296-24-12509, filed 5/7/73.]

WAC 296-24-12511 Laundry, handwashing, and bathing facilities. (1) Laundry, handwashing, and bathing facilities shall be provided in the following ratio:

(a) Handwash basin per family shelter or per six persons in shared facilities.

(b) Shower head for every 10 persons.

(c) Laundry tray or tub for every 30 persons.

(d) A "deepwell" type sink in each building used for laundry, hand washing, and bathing.

(2) Floors shall be of smooth finish but not slippery materials; they shall be impervious to moisture. Floor drains shall be provided in all shower baths, shower rooms, or laundry rooms to remove waste water and facilitate cleaning. All junctions of the curbing and the floor shall be coved. The walls and partitions of shower rooms shall be smooth and impervious to the height of splash.

(3) An adequate supply of hot and cold running water shall be provided for bathing and laundry purposes. Facilities for heating water shall be provided.

(4) Every service building shall be provided with equipment capable of maintaining a temperature of at least 70°F. during cold weather.

(5) Facilities for drying clothes shall be provided.

(6) All service buildings shall be kept clean.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-12511, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-12511, filed 5/9/73 and Order 73-4, § 296-24-12511, filed 5/7/73.]

WAC 296-24-12513 Lighting. Where electric service is available, each habitable room in a camp shall be provided with at least one ceiling-type light fixture and at least one separate floor- or wall-type convenience outlet. Laundry and toilet rooms and rooms where people congregate shall contain at least one ceiling- or wall-type fixture. Light levels in toilet and storage rooms shall be at least 20 foot-candles 30 inches from the floor. Other rooms, including kitchens and living quarters, shall be at least 30 foot-candles 30 inches from the floor.

[Order 73-5, § 296-24-12513, filed 5/9/73 and Order 73-4, § 296-24-12513, filed 5/7/73.]

WAC 296-24-12515 Refuse disposal. (1) Fly-tight, rodent-tight, impervious, cleanable or single service containers, approved by the state board of health shall be provided for the storage of garbage. At least one such container shall be provided for each family shelter and shall be located within 100 feet of each shelter on a wooden, metal, or concrete stand.

(2) Garbage containers shall be kept clean.

(3) Garbage containers shall be emptied when full, but not less than twice a week.

[Order 73-5, § 296-24-12515, filed 5/9/73 and Order 73-4, § 296-24-12515, filed 5/7/73.]

WAC 296-24-12517 Construction and operation of kitchens, dining hall, and feeding facilities. (1) In all camps where central dining or multiple family feeding operations are permitted or provided, the food handling facilities shall comply with the requirements of the "Food Service Sanitation Ordinance and Code," Part V of the *Food Service Sanitation Manual,* U.S. Public Health Service Publication 934 (1965).

(2) A properly constructed kitchen and dining hall adequate in size, separate from the sleeping quarters of any of the workers or their families, shall be provided in connection with all food handling facilities. There shall be no direct opening from living or sleeping quarters into a kitchen or dining hall.

(3) No person with any communicable disease shall be employed or permitted to work in the preparation, cooking, serving, or other handling of food, foodstuffs, or materials used therein, in any kitchen or dining room operated in connection with a camp or regularly used by persons living in a camp.

[Order 73-5, § 296-24-12517, filed 5/9/73 and Order 73-4, § 296-24-12517, filed 5/7/73.]

WAC 296-24-12519 Insect and rodent control. Effective measures shall be taken to prevent infestation by and harborage of animal or insect vectors or pests.

[Order 73-5, § 296-24-12519, filed 5/9/73 and Order 73-4, § 296-24-12519, filed 5/7/73.]

WAC 296-24-12521 First aid. (1) Adequate first-aid facilities approved by a health authority shall be maintained

and made available in every labor camp for the emergency treatment of injured persons.

(2) Such facilities shall be in charge of a person trained to administer first aid and shall be readily accessible for use at all times.

[Order 73-5, § 296-24-12521, filed 5/9/73 and Order 73-4, § 296-24-12521, filed 5/7/73.]

WAC 296-24-12523 Reporting communicable disease. (1) It shall be the duty of the camp superintendent to report immediately to the local health officer the name and address of any individual in the camp known to have or suspected of having a communicable disease.

(2) Whenever there shall occur in any camp a case of suspected food poisoning or an unusual prevalence of any illness in which fever, diarrhea, sore throat, vomiting, or jaundice is a prominent symptom, it shall be the duty of the camp superintendent to report immediately the existence of the outbreak to the local health officer or state board of health by telegram or telephone.

[Order 73-5, § 296-24-12523, filed 5/9/73 and Order 73-4, § 296-24-12523, filed 5/7/73.]

PART B-2
SAFETY COLOR CODE FOR MARKING PHYSICAL HAZARDS, ETC., WINDOW WASHING

Color code—Marking physical hazards

WAC 296-24-135 Safety color code for marking physical hazards.

[Order 73-5, § 296-24-135, filed 5/9/73 and Order 73-4, § 296-24-135, filed 5/7/73.]

WAC 296-24-13501 Color identification. (1) Red. Red shall be the basic color for the identification of:

(a) Fire protection equipment and apparatus, except motorized apparatus, as used on roads.

(b) Danger. Safety cans or other portable containers of flammable liquids having a flashpoint at or below 80°F. table containers of flammable liquids (open cup tester), excluding shipping containers, shall be painted red with some additional clearly visible identification either in the form of a yellow band around the can or the name of the contents conspicuously stenciled or painted on the can in yellow. Red lights shall be provided at barricades and at temporary obstructions, as specified in ANSI Safety Code for Building Construction, A10.2-1944. Danger signs shall be painted red.

(c) Stop. Emergency stop bars on hazardous machines such as rubber mills, wire blocks, flat work ironers, etc., shall be red. Stop buttons or electrical switches used for emergency stopping of machinery shall be red.

(2) Yellow. Yellow shall be the basic color for designating caution and for marking physical hazards such as: Striking against, stumbling, falling, tripping, and "caught in between." Solid yellow, yellow and black stripes, yellow and black checkers (or yellow with suitable contrasting background) should be used interchangeably, using the combination which will attract the most attention in the particular environment. Yellow shall be the basic color for designating caution, limited to warning against the starting, the use of, or the movement of equipment under repair or being worked upon.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-13501, filed 6/11/82; Order 73-5, § 296-24-13501, filed 5/9/73 and Order 73-4, § 296-24-13501, filed 5/7/73.]

WAC 296-24-140 Specifications for accident prevention signs and tags.

[Order 73-5, § 296-24-140, filed 5/9/73 and Order 73-4, § 296-24-140, filed 5/7/73.]

WAC 296-24-14001 Scope. (1) These specifications apply to the design, application, and use of signs or symbols (as included in WAC 296-24-14005 through 296-24-14009) intended to indicate and, insofar as possible, to define specific hazards of a nature such that failure to designate them may lead to accidental injury to workers. These specifications are intended to cover all safety signs except those designed for streets, highways, railroads, and marine regulations. These specifications do not apply to plant bulletin boards or to safety posters.

(2) All new signs and replacements of old signs after August 27, 1971 shall be in accordance with these specifications.

[Order 76-6, § 296-24-14001, filed 3/1/76; Order 73-5, § 296-24-14001, filed 5/9/73 and Order 73-4, § 296-24-14001, filed 5/7/73.]

WAC 296-24-14003 Definitions. As used in this section, the word "sign" refers to a surface on which letters or other markings appear, prepared for the warning of, or safety instructions of, industrial workers who may be exposed to hazards. Excluded from this definition, however, are news releases, displays commonly known as safety posters, and bulletins used for employee education.

[Order 73-5, § 296-24-14003, filed 5/9/73 and Order 73-4, § 296-24-14003, filed 5/7/73.]

WAC 296-24-14005 Classification of signs according to use. (1) Danger signs.

(a) Danger signs should be used only where an immediate hazard exists. There shall be no variation in the type of design or signs posted to warn of specific dangers and radiation hazards.

(b) All employees shall be instructed that danger signs indicate immediate danger and that special precautions are necessary.

(2) Caution signs.

(a) Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices.

(b) All employees shall be instructed that caution signs indicate a possible hazard against which proper precaution should be taken.

(3) Safety instruction signs. Safety instruction signs shall be used where there is a need for general instructions and suggestions relative to safety measures.

[Order 73-5, § 296-24-14005, filed 5/9/73 and Order 73-4, § 296-24-14005, filed 5/7/73.]

WAC 296-24-14007 Sign design and colors. (1) All signs shall be furnished with rounded or blunt corners and shall be free from sharp edges, burrs, splinters, or other sharp projections. The ends or heads of bolts or other fastening devices shall be located in such a way that they do not constitute a hazard.

(2) Danger signs.

(a) The colors red, black, and white shall be those of opaque glossy samples as specified in Table 1 of Fundamental Specification of Safety Colors for CIE Standard Source "C," American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-1, and format shall be as in Fig. J-1.

(3) Radiation warning signs.

(a) Standard color of the background shall be yellow; the panel, reddish purple with yellow letters; the symbol, reddish purple; any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard, Z53.1-1971.

(b) The standard symbol shall be as in Figure J-3. Method of dimensioning, design, and orientation of the standard symbol (one blade pointed downward and centered on the vertical axis) shall be executed as illustrated. The symbol shall be prominently displayed, and of a size consistent with the size of the equipment or material or area to which it is attached.

(c) Format shall be as in Figure J-2. Sign proportions shall be the same as those for danger signs in Table J-1.

(4) Caution signs.

(a) Standard color of the background shall be yellow; and the panel, black with yellow letters. Any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-2, and format shall be as in Figure J-4.

(5) Exit signs. Exit signs shall be in accordance with WAC 296-24-56531.

(6) Safety instruction signs.

(a) Standard color of the background shall be white; and the panel, green with white letters. Any letters used against the white background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard, Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-3, and format shall be as in Figure J-5.

(7) Directional signs.

(a) Standard color of the background shall be white; and the panel, black with white directional symbol. Any letters used against the white background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-4, and format shall be as in Figure J-6.

(8) In-plant traffic signs. Regulatory and control signs required for the safe movement of vehicles and pedestrians on thoroughfares on plant property shall conform to the standards established in American National Standard Manual on Uniform Traffic Control Devices for Streets and Highways, D6.1-1971.

(9) Informational signs. Blue shall be the standard color for informational signs. It may be used as the background color for the complete sign or as a panel at the top of such types of "notice" signs, which have a white background. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1-1971.

(10) Slow-moving vehicle emblem. This emblem (see Fig. J-7) consists of a fluorescent yellow-orange triangle with a dark red reflective border. The yellow-orange fluorescent triangle is a highly visible color for daylight exposure. The reflective border defines the shape of the fluorescent color in daylight and creates a hollow red triangle in the path of motor vehicle headlights at night. The emblem is intended as a unique identification for, and it shall be used only, on vehicles which by design move slowly (25 m.p.h. or less) on the public roads. The emblem is not a clearance marker for wide machinery nor is it intended to replace required lighting or marking of slow-moving vehicles. Neither the color film pattern and its dimensions nor the backing shall be altered to permit use of advertising or other markings. The material, location, mounting, etc., of the emblem shall be in accordance with the American Society of Agricultural Engineers Emblem for Identifying Slow-Moving Vehicles, ASAE R276, 1967, or ASAE S276.2 (ANSI B114.1-1971).

(11) Symbols. Symbols used on signs shall follow recognized practices, such as in Figure J-8. For radioactive materials, see symbol in Figure J-3.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-14007, filed 6/11/82; Order 73-5, § 296-24-14007, filed 5/9/73 and Order 73-4, § 296-24-14007, filed 5/7/73.]

WAC 296-24-14009 Sign wordings. (1) Examples of wordings. The lists in (3) through (7) of this section are intended to serve as a guide for choosing the correct sign design for the message to be displayed.

(2) Nature of wording. The wording of any sign should be easily read and concise. The sign should contain sufficient information to be easily understood. The wording should make a positive, rather than negative suggestion and should be accurate in fact.

(3) Danger signs.

Danger—Keep off, electric current.
Danger—No smoking, matches, or open lights.
Danger—Workers above.
Danger—Not room enough here to clear men on cars.
Danger—Keep away.
Danger—Workers in boiler.
Danger—Insufficient clearance.
Danger—2,300 volts.
Danger—Keep out.
Danger—Crane overhead.
Danger—Keep off.

(4) Biological hazard signs. The biological hazard warning shall be used to signify the actual or potential presence of a biohazard and to identify equipment, containers, rooms, materials, experimental animals, or combinations thereof, which contain, or are contaminated with, viable hazardous agents. For the purpose of this subdivision the term "biological hazard," or "biohazard," shall include only

those infectious agents presenting a risk or potential risk to the well-being of persons. The biohazard symbol shall be designed and proportioned as illustrated in Figure J-9. The symbol design shall be a fluorescent orange or orange-red color. Background color is optional as long as there is sufficient contrast for the symbol to be clearly defined. Appropriate wording may be used in association with the symbol to indicate the nature or identity of the hazard, name of individual responsible for its control, precautionary information, etc., but never should this information be superimposed on the symbol.

(5) Caution signs.

Caution—Do not operate, working on repairs.
Caution—Hands off switch, working on line.
Caution—Working on machines, do not start.
Caution—Goggles must be worn when operating this machine.
Caution—This door must be kept closed.
Caution—Electric trucks, go slow.
Caution—This space must be kept clear at all times.
Caution—Stop machinery to clean, oil, or repair.
Caution—Keep aisles clear.
Caution—Operators of this machine shall wear snug fitting clothing—No gloves.
Caution—Close clearance.
Caution—Watch your step.
Caution—Electric fence.

(6) Safety instruction signs.

Report all injuries to the first-aid room at once.
Walk—Don't run.
Report all injuries no matter how slight.
Think, if safe go ahead.
Make your work place safe before starting the job.
Report all unsafe conditions to your supervisor.
Help keep this plant safe and clean.

(7) Directional signs.

This way out (below arrow panel).
This way (inside arrow) out (below arrow panel).
Fire exit (below arrow panel).
Fire (inside arrow) extinguisher (below arrow panel).
To the (inside arrow) fire escape (below arrow panel).
To the (inside arrow) first aid (below arrow panel).
Manway (below arrow panel).
This way to (inside arrow) first-aid room (below arrow panel).

(8) Informational signs.

No trespassing under penalty of the law.
This elevator is for freight only, not for passengers.
No admittance except to employees on duty.
No admittance.
No admittance, apply at office.
No trespassing.
Men.
Women.
For employees only.
Office.

Note: When sign wordings such as those listed in this section are contemplated, care should be taken to be sure that they are suitable for the particular location at which the sign is to be placed and that wording meets the requirements of the intended purpose. When there is a reasonable doubt, a sign of a standard design should be used.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14009, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-14009, filed 5/9/73 and Order 73-4, § 296-24-14009, filed 5/7/73.]

WAC 296-24-14011 Accident prevention tags. (1) Scope and purpose.

(a) This section applies to all accident prevention tags used to identify hazardous conditions and provide a message to employees with respect to hazardous conditions as set forth in subsection (3) of this section, or to meet the specific requirements of other WAC requirements.

(b) Tags are a temporary means of warning all concerned of a hazardous condition, defective equipment, radiation hazards, etc. The tags are not to be considered as a complete warning method, but should be used until a positive means can be employed to eliminate the hazard; for example, a "do not start" tag on power equipment shall be used for a few moments or a very short time until the switch in the system can be locked out; a "defective equipment" tag shall be placed on a damaged ladder and immediate arrangements made for the ladder to be taken out of service and sent to the repair shop.

(c) This section does not apply to construction. This section shall apply to agriculture March 1, 1994.

(2) Definitions.

(a) "Biological hazard" or "**Biohazard**" means those infectious agents presenting a risk of death, injury or illness to employees.

(b) "Major message" means that portion of a tag's inscription that is more specific than the signal word and that indicates the specific hazardous condition or the instruction to be communicated to the employee. Examples include: "High Voltage," "Close Clearance," "Do Not Start," or "Do Not Use" or a corresponding pictograph used with a written text or alone.

(c) "Pictograph" means a pictorial representation used to identify a hazardous condition or to convey a safety instruction.

(d) "Signal word" means that portion of a tag's inscription that contains the word or words that are intended to capture the employee's immediate attention.

(e) "Tag" means a device usually made of card, paper, pasteboard, plastic or other material used to identify a hazardous condition.

(3) Use.

(a) Tags shall be used as a means to prevent accidental injury or illness to employees who are exposed to hazardous or potentially hazardous conditions, equipment or operations which are out of the ordinary, unexpected or not readily apparent.

(b) Tags shall be used until such time as the identified hazard is eliminated or the hazardous operation is completed. Tags need not be used where signs, guarding or other positive means of protection are being used.

(c) Do not start tags shall be placed in a conspicuous location or shall be placed in such a manner that they effectively block the starting mechanism which would cause hazardous conditions should the equipment be energized. See Fig. J-11.

(4) General tag criteria.

(a) All required tags shall meet the following criteria:

(i) Tags shall contain a signal word and a major message.

(ii) The signal word shall be either "Danger," "Caution," or "Biological Hazard," "biohazard," or the biological hazard symbol.

(iii) The major message shall indicate the specific hazardous condition or the instruction to be communicated to the employee.

(b) The signal word shall be readable at a minimum distance of five feet (1.52 m) or such greater distance as warranted by the hazard.

(c) The tag's major message shall be presented in either pictographs, written text or both.

(d) The signal word and the major message shall be understandable to all employees who may be exposed to the identified hazard.

(e) All employees shall be informed as to the meaning of the various tags used throughout the workplace and what special precautions are necessary.

(f) Tags shall be affixed as close as safely possible to their respective hazards by a positive means such as string, wire, or adhesive that prevents their loss or unintentional removal.

(g) The tag and attachment method or device used shall be constructed of such material that they will not be likely to deteriorate in the environment in which the tag is used during the time period of intended use.

(5) Danger tags.

(a) Danger tags shall be used in major hazard situations where an immediate hazard presents a threat of death or serious injury to employees. Danger tags shall be used only in these situations. See Fig. J-11.

(b) All employees should be instructed that danger tags indicate immediate danger and that special precautions are necessary.

(6) Caution tags.

(a) Caution tags shall be used in minor hazard situations where a nonimmediate or potential hazard or unsafe practice presents a lesser threat of employee injury. Caution tags shall be used only in these situations. See Fig. J-12.

(b) All employees should be instructed that caution tags indicate a possible hazard against which proper precautions should be taken.

(7) Warning tags. Warning tags may be used to represent a hazard level between "Caution" and "Danger," instead of the required "Caution" tag, provided that they have a signal word of "Warning," an appropriate major message, and otherwise meet the general tag criteria of subsection (4) of this section.

(8) Out of order tags. Out of order tags should be used only for the specific purpose of indicating that a piece of equipment, machinery, etc., is out of order and to attempt to use it might present a hazard. (See Fig. J-13.)

(9) Radiation tags.

(a) The standard background for radiation tags shall be yellow; the panel shall be reddish purple. Any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1, Fundamental Specification of Safety Colors for CIE Standard Source "C" American National Standards Institute, Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1971.

(b) The method of dimension, design, and orientation of the standard symbol (one blade pointed downward and centered on the vertical axis) shall be executed as illustrated in Figure J-14. The symbol shall be prominently displayed and of a size consistent with the size of the equipment or area in which it is to be used.

(10) Biological hazard tags.

(a) Biological hazard tags shall be used to identify the actual or potential presence of a biological hazard and to identify equipment, containers, rooms, experimental animals, or combinations thereof, that contain or are contaminated with hazardous biological agents.

(b) The symbol design for biological hazard tags shall conform to the design shown in Fig. J-15.

(11) Other tags. Other tags may be used in addition to those required by this section or in other situations where this section does not require tags, provided that they do not detract from the impact or visibility of the signal word and major message of any required tag.

Fig. J-1

Danger Sign

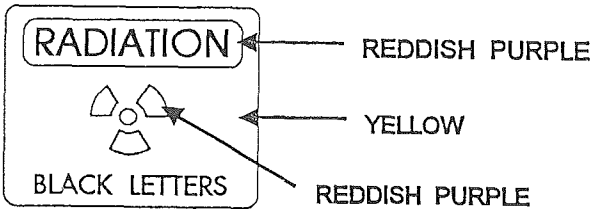


Fig. J-2

Radiation Warning Sign

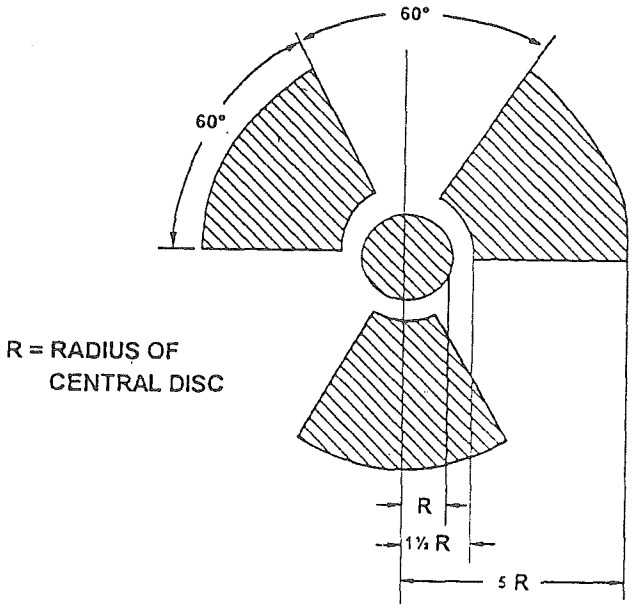


Fig. J-3

Standard Radiation Symbol

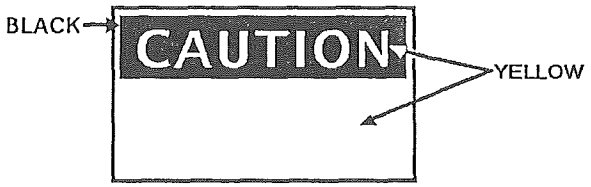


Fig. J-4

Caution Sign

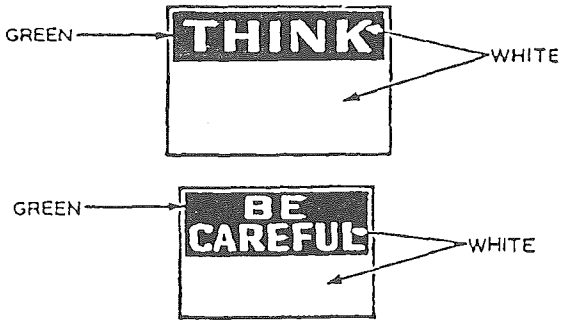


Fig. J-5

Safety Instruction Signs

(Note: The words "think" and "be careful," given here, are only illustrations. Other wordings may be used.)

Fig. J-6

Directional Signs

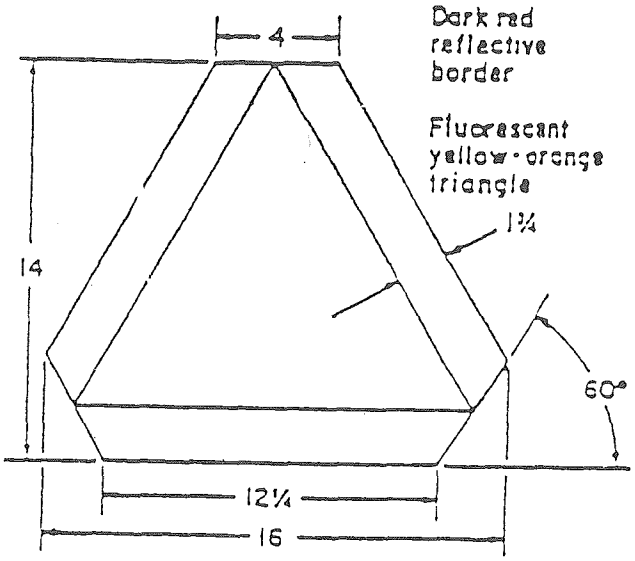


Fig. J-7

Slow-Moving Vehicle Emblem

Note: All dimensions are in inches.

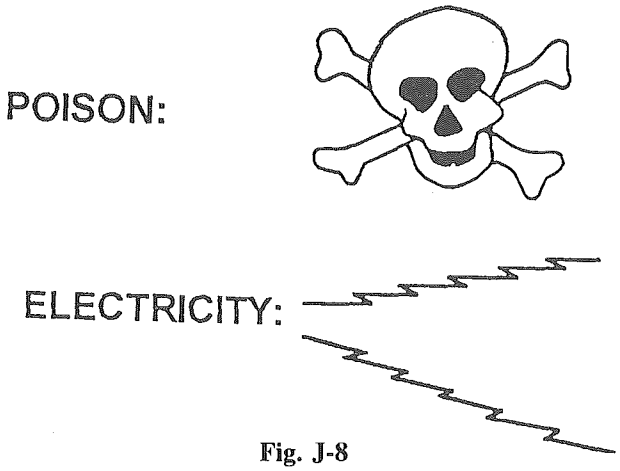
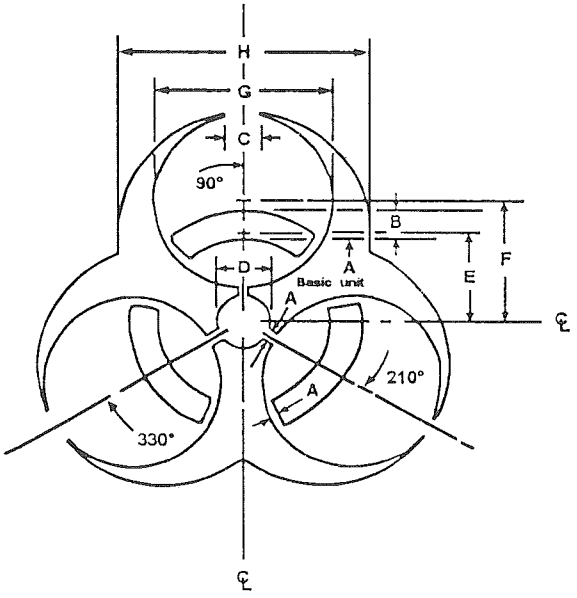


Fig. J-8

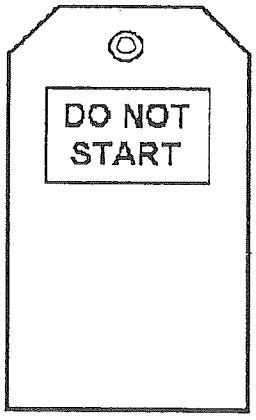
Symbols Used on Signs



Dimension	A	B	C	D	E	F	G	H
Units	1	3½	4	6	11	15	21	30

Fig. J-9

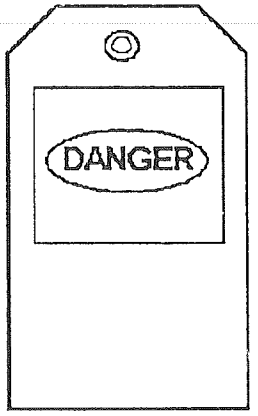
Symbol for Biological Hazard



White tag
white letters on
red square

Fig. J-10

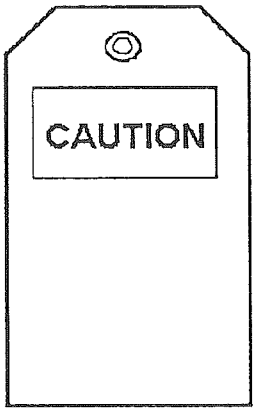
Do Not Start Tag



White tag
white letters on
red oval with a
black square

Fig. J-11

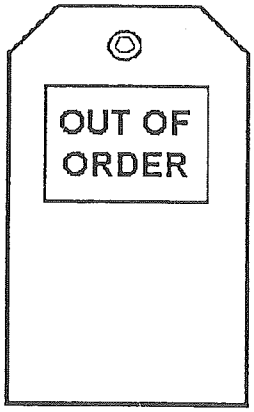
Danger Tag



Yellow tag
yellow letters on a
black background

Fig. J-12

Caution Tag



White tag
white letters on
black background

Fig. J-13

Out of Order Tag

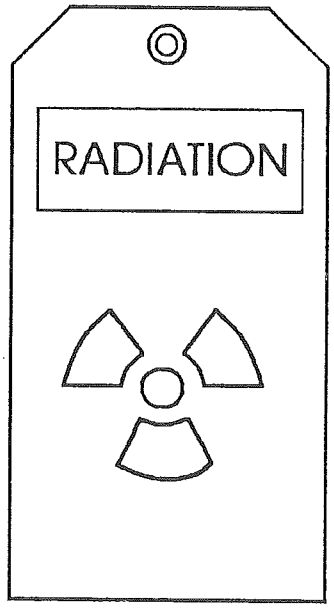


Fig. J-14

Radiation Tag

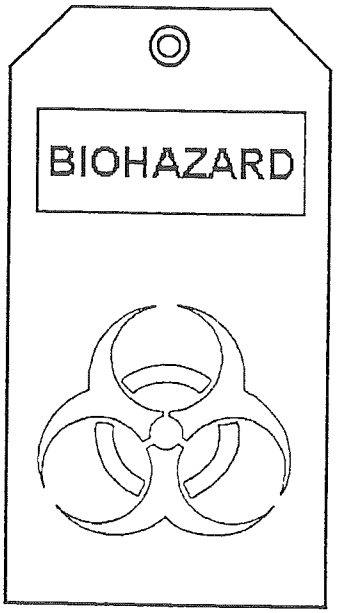


Fig. J-15

Biological Hazard Tag

TABLE J-1

STANDARD PROPORTIONS FOR DANGER SIGNS

Sign size, inches Height Width	Black rectangular panel, inches Height Width	Red oval, inches Height Width	Word danger, height inches	Maximum space available for sign wording, inches
		HORIZONTAL PATTERN		
7x10	3 1/4 x 9 3/8	2 7/8 x 8 1/2	1 7/16	2 3/4 x 9 3/8
10x14	4 5/8 x 13 3/8	4 1/8 x 11 7/8	2 1/16	4 1/4 x 13 3/8
14x20	6 1/2 x 19 3/8	5 3/4 x 17	2 7/8	6 1/4 x 19 3/8
20x28	9 1/4 x 27 3/8	8 1/4 x 23 7/8	4 1/8	9 1/2 x 27 3/8
		UPRIGHT PATTERN		
10x 7	2 3/8 x 6 3/8	2 1/8 x 5 7/8	1 1/16	6 3/8 x 6 3/8
14x10	3 1/4 x 9 3/8	2 7/8 x 8 1/2	1 7/16	9 1/2 x 9 3/8
20x14	4 5/8 x 13 3/8	4 1/8 x 11 7/8	2 1/16	14 x 13 3/8
28x20	6 1/2 x 19 3/8	5 3/4 x 17	2 7/8	20 1/4 x 19 3/8

TABLE J-2

STANDARD PROPORTIONS FOR CAUTION SIGNS

Sign size, inches height width	Black rectangular panel, inches height width	Word "Caution" height of letter, inches	Maximum space available for sign wording below panel inches height width
	HORIZONTAL PATTERN		
7 x 10	2 1/4 x 9 3/8	1 5/8	3 1/4 x 9 3/8
10 x 14	3 1/4 x 13 3/8	2 1/4	5 1/2 x 13 3/8
14 x 20	3 3/4 x 19 3/8	2 3/4	9 x 19 3/8
20 x 28	4 1/4 x 27 3/8	3 1/4	14 1/2 x 27 3/8

UPRIGHT PATTERN

10 x 7	1 5/8 x 6 3/8	1 1/8	7 x 6 3/8
14 x 10	2 1/4 x 9 3/8	1 5/8	10 1/2 x 9 3/8
20 x 14	3 1/4 x 13 3/8	2 1/4	15 1/2 x 13 3/8
28 x 20	3 3/4 x 19 3/8	2 3/4	24 x 19 3/8

TABLE J-3

STANDARD PROPORTIONS FOR SAFETY INSTRUCTION SIGNS

[TABLE J-3: PART 1—"Think" Safety Sign]

Sign size, inches, height, width	Maximum Green rectangular panel, inches, height, width	Word "Think" height letters, inches	Space available for sign wording below panel, inches height, width
7x10	2 3/4 x 9 3/8	1 5/8	3 1/2 x 9 3/8
10x14	3 1/4 x 13 3/8	2 1/4	5 1/2 x 13 3/8
14x20	3 3/4 x 19 3/8	2 3/4	9 x 19 3/8
20x28	4 1/4 x 27 3/8	3 1/4	14 1/2 x 27 3/8

[TABLE J-3:PART 2—"Be Careful" Safety Sign]

Sign size, inches height, width	Maximum Green panel, inches, height, width	Word "Be" height of letters, inches	Word "Careful" height of letters, inches	Space available for sign wording below panel, inches, height, width
7x10	3 3/8 x 9 3/8	1 1/4	1 3/16	2 1/2 x 9 3/8
10x14	4 1/4 x 13 3/8	1 3/4	2 3/16	4 x 13 3/8
14x20	6 1/4 x 19 3/8	2 1/2	3 1/8	6 x 19 3/8
20x28	9 1/2 x 27 3/8	3 1/2	4 3/8	9 1/4 x 27 3/8

TABLE J-4

STANDARD PROPORTIONS FOR DIRECTIONAL SIGNS

Sign size inches height	Black rectangular panel, inches height width	White arrow, inches: Overall length	Arrow head height width	Arrow shaft height	Arrow tail height width	Maximum space for sign wording below panel height
6 1/2x14	3 1/4 x 13 3/8	12 5/8	2 3/4 x 3	1 1/8	2 3/8 x 3 1/4	2 1/4 x 13 3/8
9x20	4 1/2 x 19 3/8	18 5/8	3 3/4 x 4 1/8	1 5/8	3 1/4 x 4 1/2	3 3/8 x 19 3/8
12x28	6 x 27 3/8	26 5/8	5 1/8 x 5 5/8	2 1/8 6	4 3/8 x 27 3/8	4 3/4 x
15x36	7 1/2 x 35 3/8	34 5/8	6 3/8 x 6 7/8	2 5/8	5 1/2 x 7 1/2	6 1/4 x 35 3/8

Appendix A—Recommended color coding.

While the standard does not specifically mandate colors to be used on accident prevention tags, the following color scheme is recommended by OSHA for meeting the requirements of this section:

"DANGER"—Red, or predominantly red, with lettering or symbols in a contrasting color.

"CAUTION"—Yellow, or predominantly yellow, with lettering or symbols in a contrasting color.

"WARNING"—Orange, or predominantly orange, with lettering or symbols in a contrasting color.

"BIOLOGICAL HAZARD"—Fluorescent orange or orange-red, or predominantly so, with lettering or symbols in a contrasting color.

Appendix B—References for further information.

The following references provide information which can be helpful in understanding the requirements contained in various sections of the standard:

1. Bresnahan, Thomas F., and Bryk, Joseph. "The Hazard Association Values of Accident Prevention Signs", Journal of American Society of Safety Engineers: January 1975.

2. Dreyfuss, H., Symbol Sourcebook, McGraw Hill: New York, NY, 1972.

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4. Graphic Symbols for Public Areas and Occupational Environments, Treasury Board of Canada, Ottawa, Canada, July 1980.

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[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14011, filed 7/20/94, effective 9/20/94; 94-06-068 (Order 93-17), § 296-24-14011, filed 3/2/94, effective 3/1/95. Statutory Authority: RCW 49.17.050(2) and 49.14.040 [49.17.040]. 87-07-022 (Order 87-01), § 296-24-14011, filed 3/12/87; Order 76-6, § 296-24-14011, filed 3/1/76; Order 73-5, § 296-24-14011, filed 5/9/73 and Order 73-4, § 296-24-14011, filed 5/7/73.]

WAC 296-24-145 Window washing.

[Order 73-5, § 296-24-145, filed 5/9/73 and Order 73-4, § 296-24-145, filed 5/7/73.]

WAC 296-24-14501 Definitions. (1) "Building" means a building more than one story in height or having window sills more than twelve feet above grade, which is a place of employment.

(2) The term "outside" means wholly without the building and/or establishment.

(3) The term "window cleaning" means all methods of cleaning windows.

(4) The term "safety belt" means the equipment which is attached to the body of the window cleaner while cleaning windows.

(5) "Waist band" means that part of the safety belt which is attached to the body of the window cleaner.

(6) "Terminal strap" means the strap or rope which is attached to the waist band and to which the belt terminals are attached.

(7) A "safe manner" means the method employed in cleaning windows in which the employee is protected:

(a) By standing or sitting on the sill while protected by a safety device.

(b) By working from a ladder.

(c) By working from a scaffold, or

(d) By working from a boatswain's chair.

(8) "Belt terminal" means that part of the safety belt which is fastened to the terminal strap to be attached to the anchor during the operation of window cleaning.

(9) The term "anchor" means the fitting, fastened to the window frame or wall, to which the belt terminal is attached.

(10) The term "single-head anchor" means an anchor having one head.

(11) The term "double-head anchor" means an anchor having two heads.

(12) The term "machine bolt" means the bolts used to install anchors in steel window frames.

(13) "Grade" means the ground, the floor, the sidewalk, the roof, or any approximately level solid surface of sufficient area and having sufficient structural strength to be considered as a safe place to work.

[Order 73-5, § 296-24-14501, filed 5/9/73 and Order 73-4, § 296-24-14501, filed 5/7/73.]

WAC 296-24-14503 Application. These orders shall apply to all window cleaning done in places of employment.

[Order 73-5, § 296-24-14503, filed 5/9/73 and Order 73-4, § 296-24-14503, filed 5/7/73.]

WAC 296-24-14505 Protection of persons engaged at window cleaning. (1) The employer shall not require nor permit any window in such building to be cleaned from the outside unless means are provided to enable such work to be done in a safe manner as provided in these standards.

(2) All employees required to clean windows shall use safety devices as required herein.

[Order 73-5, § 296-24-14505, filed 5/9/73 and Order 73-4, § 296-24-14505, filed 5/7/73.]

WAC 296-24-14507 General. (1) In every building hereafter erected, having windows so constructed that it is usual and/or practicable for a person to stand on the sill in order to clean said window, there shall be installed window cleaner's safety anchors approved by the American National Standards Institute.

(2) Employees sitting on a window sill with their legs inside the room, shall wear a safety belt equipped with a safety line. One end of the line shall be tied to a radiator, or any other substantial anchorage inside the room, unless the window opening is equipped with anchors in which case the safety belt shall be attached to the anchors.

(3) No safety device shall be used in window cleaning operations until it has the approval of the American National Standards Institute.

(4) The use of lag screws is prohibited in new or replacement installations hereafter made.

(5) Window cleaners shall not pass from one window sill to another window sill on the outside of a building unless one terminal is connected at all times.

(6) No employee who has not been properly trained to handle such equipment shall be assigned to work on scaffolds or boatswains' chairs.

(7) All window cleaning safety devices hereafter approved shall bear identification marks to identify the approval of the American National Standards Institute.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14507, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-14507, filed 5/9/73 and Order 73-4, § 296-24-14507, filed 5/7/73.]

WAC 296-24-14509 Belt terminals, anchors and bolts. (1) All anchors and belt terminals shall be capable of withstanding the following tests:

(a) To withstand an impact test of an iron weight of thirty-two pounds falling free a distance of four feet and striking the head of the anchor without fracture.

(b) A drop test of three hundred fifty pounds dead weight (not sand) falling a distance of four feet without fracture. The connection between the weight and anchor being a standard safety belt or ropes or cables not over six feet long.

(c) To withstand a tension pull of six thousand pounds without fracture. This tension to be applied through a belt terminal and in the direction which the anchor must withstand in service when a person falls.

(2) All metals used in the manufacture of anchors and belt terminals shall have a minimum ultimate tensile strength of fifty-five thousand pounds per square inch, with an elongation of at least twenty-five percent in two inches and shall have a corrosion resistance of sixty percent as compared to copper. The belt terminal may be excepted from the corrosive resistance and elongation requirements of this order if of material and design of obvious superiority.

(3) All anchors installed hereafter shall be double-headed. These heads to be so designed or spaced that it will be impossible to attach the belt terminal to a single head. The department may approve a single-headed anchor upon sufficient tests and proofs.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14509, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-14509, filed 5/9/73 and Order 73-4, § 296-24-14509 filed 5/7/73.]

WAC 296-24-14511 Belts. (1) An approved safety belt of tanned leather, canvas or any other approved material shall be used when the operator is required to stand on the sill while cleaning the window. The safety belt shall be capable of withstanding a drop test of three hundred fifty pounds dead weight (not sand) falling a distance of four feet without failure, one terminal only being attached. The connection between the weight and the belt shall be the waist band of the belt.

(2) The safety belt shall be kept in repair.

(3) Window cleaners using a safety belt shall attach one belt terminal to anchor before stepping out onto the sill. During the operation of window cleaning, both belt terminals shall be attached to the anchors.

(4) The fittings on the waist band through which the terminal strap or rope passes shall be so constructed that it will be impossible for the safety terminals to pass through them.

(5) Metal thimbles shall be provided where ropes or straps are secured to eyes or rings.

(6) Suitable length terminal straps shall be provided for windows more than six feet wide between mullions.

[Order 73-5, § 296-24-14511, filed 5/9/73 and Order 73-4, § 296-24-14511, filed 5/7/73.]

WAC 296-24-14513 Anchor installations. (1) Locations: Anchors shall be attached to the side frames of the window or to the building at a point not less than forty-two inches nor more than fifty-one inches (approximately) above the window sill. Care shall be taken when screwing up anchor fastenings, to prevent producing excess stresses.

(2) Wood—Existing and new buildings: When anchors are attached to wood construction, through bolts of not less than one-half inch diameter, extending at least through the window frame with washers and nuts inside, shall be used as anchor fasteners. Means shall be provided to keep the nut from backing off.

Wall flanges shall be not less than one and one-quarter inches in diameter, or equivalent area.

(3) Concrete—New buildings: Anchors attached to concrete poured in place in buildings hereafter erected, shall be installed while the concrete is being placed. Such anchors shall extend not less than five inches into the concrete and shall have a cross-sectional area of not less than one-quarter of a square inch and shall be provided with a fluke at the end of the anchor not less than one inch in length.

(4) Masonry—New buildings: Anchors attached to masonry, other than concrete poured in place, in buildings hereafter erected, shall be installed while the wall is under construction and shall be shaped to build into the joints between masonry units. Such anchors shall be not less than eight and one-half inches long and shall have a cross-sectional area of not less than one-quarter of a square inch at all unexposed points and shall have a fluke or flukes having a holding surface of not less than one inch in length that shall be firmly imbedded in the masonry.

(5) Masonry and concrete—Existing buildings: Anchors installed on buildings or masonry and concrete construction heretofore erected, shall be attached to the window frames as required in these standards, or by other methods approved by the department.

(6) Hollow metal—Existing and new buildings: Anchors shall be attached to hollow metal construction by one of the following methods:

(a) At least two nickel steel bolts not less than five-sixteenths of an inch in diameter passing through the frame and a steel reinforcing plate five-sixteenths of an inch thick and not less than six inches long, placed on the inside of the frame and secured by means of nuts and lock washers. In cases where it is impracticable to provide nuts and lock washers, the reinforcing plate may be tapped to receive five-sixteenths inch diameter bolts, and the bolts shall extend through the plate.

(b) Where the screw bolt is an integral part of the anchor, it shall be at least one-half inch in diameter and shall be secured by means of a nut and lock washer, or any other method approved by the department.

(c) All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off or becoming loose.

(7) Solid metal—Existing and new buildings: Anchors shall be attached to solid metal construction by one of the following methods:

(a) At least two nickel steel bolts not less than five-sixteenths of an inch in diameter passing through the frame, and secured by means of nuts and lock washers. In cases where it is impracticable to provide nuts and lock washers, the metal frame shall be reinforced with a five-sixteenths inch thick plate and tapped to receive at least two five-sixteenths inch diameter nickel steel bolts, and the bolts shall extend through the reinforcing plate.

(b) Where the screw bolt is an integral part of the anchor, it shall be at least one-half inch in diameter and shall be secured by means of a nut and lock washer, or any other method approved by the department.

(c) All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off or becoming loose.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14513, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-14513, filed 5/9/73 and Order 73-4, § 296-24-14513, filed 5/7/73.]

WAC 296-24-14515 Reversible and pivot windows. (1) When it is necessary to clean reversible and pivot windows either of which is prevented from properly operating by obstructions or by the design of said windows, they shall be provided with safety devices of approved design.

(2) Horizontally pivoted sash. Provision shall be made so that the outside of horizontally pivoted windows may be cleaned without necessitating the window washer leaning against or putting weight on the sash.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14515, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-14515, filed 5/9/73 and Order 73-4, § 296-24-14515, filed 5/7/73.]

WAC 296-24-14517 Ladders. (1) All movable ladders shall be provided with rough surface feet or other suitable means to prevent slipping.

(2) A person shall be placed at the foot of all ladders over eighteen feet in length.

(3) No person shall be required to stand within four rungs of the top of any ladder.

(4) No ladder shall be used where the base of the ladder is above grade except where it is securely fastened so as to prevent it from slipping or falling.

[Order 73-5, § 296-24-14517, filed 5/9/73 and Order 73-4, § 296-24-14517, filed 5/7/73.]

WAC 296-24-14519 Boatswain's chairs. An employee shall be secured in the boatswain's chair with a safety belt or rope, and shall have a short rope with a sliding hitch between the employee's body or the chair and the hoistline.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-14519, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-14519, filed 5/9/73 and Order 73-4, § 296-24-14519, filed 5/7/73.]

PART C
MACHINERY AND MACHINE GUARDING

WAC 296-24-150 Machinery and machine guarding—General requirements for all machines—Scope and application. (1) All sections of this chapter which include WAC 296-24-150 in the section number apply to machinery and machine guarding.

(2) All sections which include WAC 296-24-150 in the section number also applies to combination, multipurpose powered machines, commonly referred to as "iron workers," that punch, shear, notch, cope, and form metals or other materials and to single-end punches, double-end punches, structural shearing machines, notching machines, coping machines, beam punches, detail punches, and spacing punches. It also applies to machines similar in construction and function to mechanical power presses, but which are specifically identified by the respective manufacturers as "iron workers," and to machines whose most distinguishing feature is the multiple work stations at which various operations may be performed singly or simultaneously, including, but not limited to, punching, shearing, notching, coping, and forming.

(3) Mechanical powered machines that shear, punch, form, or assemble metal or material by means of tools or dies attached to slides, and are identified by their respective manufacturers as "mechanical power presses" are regulated by sections which include WAC 296-24-195 in the subsection number.

(4) Machines used in the forming of hot metal including hot trimming presses, forging hammers, hot forging presses, upsetters, hot bending and hot metal presses, etc., are regulated by WAC 296-24-200.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-150, filed 1/10/91, effective 2/12/91; 89-11-035 (Order 89-03), § 296-24-150, filed 5/15/89, effective 6/30/89; Order 74-27, § 296-24-150, filed 5/7/74; Order 73-5, § 296-24-150, filed 5/9/73 and Order 73-4, § 296-24-150, filed 5/7/73.]

WAC 296-24-15001 Machine guarding. (1) Types of guarding. One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks. Examples of guarding methods are—barrier guards, two-hand tripping devices, electronic safety devices, etc.

(2) General requirements for machine guards. Guards shall be affixed to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard shall be such that it does not offer an accident hazard in itself.

(3) Point of operation guarding.

(a) Point of operation is the area on a machine where work is actually performed upon the material being processed.

(b) The point of operation of machines whose operation exposes an employee to injury, shall be guarded. The guarding device shall be in conformity with any appropriate standards therefor, or, in the absence of applicable specific standards, shall be so designed and constructed as to prevent the operator from having any part of the employee's body in the danger zone during the operating cycle.

(c) Circular meat cutting saws shall be guarded in one of the following ways:

(i) A suspended counter-balanced circular meat cutting saw that requires two-handed operation shall be deemed adequately guarded if provided with a guard that covers at least twenty-five degrees of the circumference of the blade and it conforms to the requirements of (c)(iv) of this subsection.

(ii) A suspended counter-balanced circular meat cutting saw that requires only one-handed operation shall be deemed adequately guarded if provided with a guard that covers at least ninety degrees of the circumference of the blade and it conforms to the requirements of (c)(iv) of this subsection.

(iii) A nonsuspended circular meat saw, either one-handed or two-handed operation, shall be deemed adequately guarded if provided with a guard that covers at least ninety degrees of the circumference of the blade and it conforms to the requirements of (c)(iv) of this subsection.

(iv) All circular meat cutting saws shall conform to the following:

(A) A "deadman" control shall be required.

(B) The guard protecting the operator from contact with the blade shall be located between the operator and the blade.

(C) The maximum number of degrees of circumferential guarding of the blade shall be provided based on specific applications in meat cutting operations.

(D) A brake that automatically activates upon release of the operating control(s) is required.

(d) Special handtools for placing and removing material shall be such as to permit easy handling of material without the operator placing a hand in the danger zone. Such tools shall not be in lieu of other guarding required by this section, but can only be used to supplement protection provided.

(e) The following are some of the machines which usually require point of operation guarding:

(i) Guillotine cutters.

(ii) Shears.

(iii) Alligator shears.

(iv) Power presses. (Including platen presses.)

(v) Milling machines.

(vi) Power saws.

(vii) Jointers.

(viii) Portable power tools.

(ix) Forming rolls and calenders.

(4) Barrels, containers, and drums. Revolving drums, barrels, and containers shall be guarded by an enclosure which is interlocked with the drive mechanism, so that the barrel, drum, or container cannot revolve unless the guard enclosure is in place.

(5) Exposure of blades. When the periphery of the blades of a fan is less than seven feet above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than one-half inch. Safeguards shall be so constructed that rods, pipes, or like material being handled by workers will not enter same, and come in contact with moving machinery. Fan blade guards of any material are acceptable where the material provides protection to workers and meets the requirements of Table O-12 of WAC 296-24-20531.

(6) Cams and other machine parts which move in such a manner as to create shearing or crushing hazards shall, if exposed to contact, be guarded with a standard safeguard.

(7) Guarding food waste disposal equipment. "Garb-el" or equipment with similar configuration and operational characteristics, will have the worm screw conveyor completely covered by a properly designed and mounted trimboard cover in place during operation of the mechanism.

(8) Garbage disposal units with feed-openings or charging-throats, large enough to allow body parts to contact points of operation shall be guarded:

(a) WAC 296-24-20531, Table O-12 provides mesh size or crossed-metal strip opening and distance of installation from the points of operation which shall be used.

(b) The guard material shall be of sufficient strength that a downward thrust of a body part will not cause the guard to stretch or open larger than two inches.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-15001, filed 7/20/94, effective 9/20/94; 91-03-044 (Order 90-18), § 296-24-15001, filed 1/10/91, effective 2/12/91; 90-03-029 (Order 89-20), § 296-24-15001, filed 1/11/90, effective 2/26/90; 89-11-035 (Order 89-03), § 296-24-15001, filed 5/15/89, effective 6/30/89; Order 74-27, § 296-24-15001, filed 5/7/74; Order 73-5, § 296-24-15001, filed 5/9/73 and Order 73-4, § 296-24-15001, filed 5/7/73.]

WAC 296-24-15003 Anchoring fixed machinery. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

However, machines using rubber feet or other nonskid (high coefficient of friction) foot pads or similar vibration dampening materials (in lieu of anchoring fixed machinery to prevent walking) shall be acceptable provided the machines do not present a tipping or falling-over or walking hazard.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-15003, filed 1/10/91, effective 2/12/91; Order 73-5, § 296-24-15003, filed 5/9/73 and Order 73-4, § 296-24-15003, filed 5/7/73.]

WAC 296-24-15005 Means to prevent slipping. Operators of dangerous machinery, such as shapers, jointers, and circular saws, shall be safeguarded against slipping on smooth, oily or otherwise slippery floor, where they stand while at the point of operation of such dangerous machinery, by covering such portion of the floor with a rubber mat, cork, nonslip composition flooring, or some other effective means of preventing slipping.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-15005, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-15005, filed 5/9/73 and Order 73-4, § 296-24-15005, filed 5/7/73.]

WAC 296-24-15007 Machines shall be stopped when making repairs. All power-driven machinery shall be stopped and brought to a complete standstill before any repairs or adjustments are made or pieces of material or refuse removed, except where motion is necessary to make adjustment.

[Order 74-27, § 296-24-15007, filed 5/7/74.]

WAC 296-24-15009 Counterweights. All counterweights exposed to contact shall be guarded with standard safeguards.

[Order 74-27, § 296-24-15009, filed 5/7/74.]

WAC 296-24-165 Fixed and portable power tool requirements. Scope and application. All sections which include WAC 296-24-165 in the section number shall apply to the use of fixed and portable power tools for processing materials that generate chips or dust from wood, reconstituted wood products, or plastics in the processing of a wood piece.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-165, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-165, filed 7/13/83, effective 9/12/83; Order 76-6, § 296-24-165, filed 3/1/76; Order 73-5, § 296-24-165, filed 5/9/73 and Order 73-4, § 296-24-165, filed 5/7/73.]

WAC 296-24-16501 Definitions. (1) "Point of operations" means that point at which cutting, shaping, boring, or forming is accomplished upon the stock.

(2) "Push stick" means a narrow strip of wood or other soft material with a notch cut into one end and which is used to push short pieces of material through saws.

(3) "Block" means a short block of wood, provided with a handle similar to that of a plane and a shoulder at the rear end, which is used for pushing short stock over revolving cutters.

[Order 73-5, § 296-24-16501, filed 5/9/73 and Order 73-4, § 296-24-16501, filed 5/7/73.]

WAC 296-24-16503 Machine construction general. (1) Each machine shall be so constructed as to be free from sensible vibration when the largest size tool is mounted and run idle at full speed.

(2) Arbors and mandrels shall be constructed so as to have firm and secure bearing and be free from play.

(3) Any automatic cutoff saw that power strokes continuously without the operator being able to control each stroke shall not be used in work situations where employees are exposed to hazards during loading, clamping, cut-off, unloading operations, etc.

(4) Saw frames or tables shall be constructed with lugs cast on the frame or with an equivalent means to limit the size of the saw blade that can be mounted, so as to avoid overspeed caused by mounting a saw larger than intended.

(5) Circular saw fences shall be so constructed that they can be firmly secured to the table or table assembly without changing their alignment with the saw. For saws with tilting tables or tilting arbors the fence shall be so constructed that it will remain in a line parallel with the saw, regardless of the angle of the saw with the table.

(6) Circular saw gages shall be so constructed as to slide in grooves or tracks that are accurately machined, to insure exact alignment with the saw for all positions of the guide.

(7) Hinged saw tables shall be so constructed that the table can be firmly secured in any position and in true alignment with the saw.

(8) All belts, pulleys, gears, shafts, and moving parts shall be guarded in accordance with the specific requirements of WAC 296-24-20501 through 296-24-20533.

(9) It is recommended that each power-driven machine be provided with a disconnect switch that can be locked in the off position.

(10) The frames and all exposed, noncurrent-carrying metal parts of portable electric machinery operated at more than 90 volts to ground shall be grounded and other portable motors driving electric tools which are held in the hand while being operated shall be grounded if they operate at more than 90 volts to ground. The ground shall be provided through use of a separate ground wire and polarized plug and receptacle.

(11) For all circular saws where conditions are such that there is a possibility of contact with the portion of the saw either beneath or behind the table, that portion of the saw shall be covered with an exhaust hood, or, if no exhaust system is required, with a guard that shall be so arranged as to prevent accidental contact with the saw.

(12) Revolving double arbor saws shall be fully guarded in accordance with all the requirements for circular crosscut saws or with all the requirements for circular ripsaws, according to the kind of saws mounted on the arbors.

(13) No saw, cutter head, or tool collar shall be placed or mounted on a machine arbor unless the tool has been accurately machined to size and shape to fit the arbor.

(14) Combs (featherboards) or suitable jigs shall be provided at the workplace for use when a standard guard cannot be used, as in dadoing, grooving, jointing, moulding and rabbeting.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-16503, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16503, filed 7/13/83, effective 9/12/83; 82-13-045 (Order 82-22), § 296-24-16503, filed 6/11/82; Order 73-5, § 296-24-16503, filed 5/9/73 and Order 73-4, § 296-24-16503, filed 5/7/73.]

WAC 296-24-16505 Machine controls and equipment. (1) A mechanical or electrical power control shall be provided on each machine to make it possible for the operator to cut off the power from each machine without leaving the operating position.

(2) On machines driven by belts and shafting, a locking-type belt shifter or an equivalent positive device shall be used.

(3) On applications where injury to the operator might result if motors were to restart after power failures, provision shall be made to prevent machines from automatically restarting upon restoration of power.

(4) Power controls and operating controls should be located within easy reach of the operator while at the regular work location, making it unnecessary to reach over the cutter to make adjustments. This does not apply to constant pressure controls used only for setup purposes.

(5) On each machine operated by electric motors, positive means shall be provided for rendering such controls or devices inoperative while repairs or adjustments are being made to the machines they control.

(6) Each operating treadle shall be protected against unexpected or accidental tripping.

(7) Feeder attachments shall have the feed rolls or other moving parts so covered or guarded as to protect the operator from hazardous points.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-16505, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-16505, filed 5/9/73 and Order 73-4, § 296-24-16505, filed 5/7/73.]

WAC 296-24-16507 Hand-fed ripsaws. (1) Each circular hand-fed ripsaw shall be guarded by a hood which shall completely enclose that portion of the saw above the table and that portion of the saw above the material being cut. The hood and mounting shall be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut but it shall not offer any considerable resistance to insertion of material to saw or to passage of the material being sawed. The hood shall be made of adequate strength to resist blows and strains incidental to reasonable operation, adjusting, and handling, and shall be so designed as to protect the operator from flying splinters and broken saw teeth. It shall be made of material that is soft enough so that it will be unlikely to cause tooth breakage. The material should not shatter when broken, should be nonexplosive, and should be no more flammable than wood. The hood shall be so mounted as to insure that its operation will be positive, reliable, and in true alignment with the saw; and the mounting shall be adequate in strength to resist any reasonable side thrust or other force tending to throw it out of line.

(2) Circular hand-fed ripsaw blades may be guarded with a fixed enclosure, fixed barrier guard, or a manually adjusted guard when specific conditions prevent use of the standard automatic adjusting guard. In those instances where alternate fixed-type guards are used, they must provide protection equivalent to the protection afforded by automatically adjusting guards. The alternate guards must be used in accordance with manufacturer's instructions and under sufficient supervision to ensure consistent compliance with the intent of the standard.

(3) Each hand-fed circular ripsaw shall be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator. The spreader shall be made of hard tempered steel, or its equivalent, and shall be thinner than the saw kerf. It shall be of sufficient width to provide adequate stiffness or rigidity to resist any reasonable side thrust or blow tending to bend or throw it out of position. The spreader shall be attached so that it will remain in true alignment with the saw even when either the saw or table is tilted, and should be placed so that there is

not more than 1/2-inch space between the spreader and the back of the saw when the largest saw is mounted in the machine. The provision of a spreader in connection with grooving, dadoing, or rabbeting is not required. On the completion of such operations; the spreader shall be immediately replaced.

(4) Each hand-fed circular ripsaw shall be provided with nonkickback fingers or dogs so located as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator. They shall be designed to provide adequate holding power for all the thicknesses of materials being cut.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-16507, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-16507, filed 5/9/73 and Order 73-4, § 296-24-16507, filed 5/7/73.]

WAC 296-24-16509 Hand-fed crosscut table saws. (1) Each circular crosscut table saw shall be guarded by a hood which shall meet all the requirements of WAC 296-24-16507(1) for hoods for circular ripsaws.

(2) Each circular crosscut saw should also be provided with a spreader which should meet all the requirements of WAC 296-24-16507.

[Order 73-5, § 296-24-16509, filed 5/9/73 and Order 73-4, § 296-24-16509, filed 5/7/73.]

WAC 296-24-16511 Circular resaws. (1) Each circular resaw shall be guarded by a hood or shield of metal above the saw. This hood or shield shall be so designed as to guard against danger from flying splinters or broken saw teeth.

(2) Each circular resaw (other than self-feed saws with a roller or wheel at back of the saw) shall be provided with a spreader fastened securely behind the saw. The spreader shall be slightly thinner than the saw kerf and slightly thicker than the saw disk.

[Order 73-5, § 296-24-16511, filed 5/9/73 and Order 73-4, § 296-24-16511, filed 5/7/73.]

WAC 296-24-16513 Self-feed circular saws. (1) Feed rolls and saws shall be protected by a hood or guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material, preferably metal, and the bottom of the guard shall come down to within three-eighths inch of the plane formed by the bottom or working surfaces of the feed rolls. This distance (three-eighths inch) may be increased to three-fourths inch, provided the lead edge of the hood is extended to be not less than five and one-half inches in front of the nip point between the front roll and the work.

(2) Each self-feed circular ripsaw shall be provided with sectional nonkickback fingers for the full width of the feed rolls. They shall be located in front of the saw and so arranged as to be in continual contact with the material being fed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16513, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16513, filed 5/9/73 and Order 73-4, § 296-24-16513, filed 5/7/73.]

WAC 296-24-16515 Swing cutoff saws. The requirements of this section are also applicable to sliding cutoff saws mounted above the table.

(1) Each swing cutoff saw shall be provided with a hood that will completely enclose the upper half of the saw, the arbor end, and the point of operation at all positions of the saw. The hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters and broken saw teeth. Its hood shall be so designed that it will automatically cover the lower portion of the blade, so that when the saw is returned to the back of the table the hood will rise on top of the fence, and when the saw is moved forward the hood will drop on top of and remain in contact with the table or material being cut.

(2) Swing cutoff saws may be guarded with a fixed enclosure, fixed barrier guard, or a manually adjusted guard when specific conditions prevent use of the standard automatic adjusting guard. In those instances where alternate fixed-type guards are used, they must provide protection equivalent to the protection afforded by automatically adjusting guards. The alternate guards must be used in accordance with manufacturer's instructions and under sufficient supervision to ensure consistent compliance with the intent of the standard.

(3) Each swing cutoff saw shall be provided with an effective device to return the saw automatically to the back of the table when released at any point of its travel. Such a device shall not depend for its proper functioning upon any rope, cord, or spring. If there is a counterweight, the bolts supporting the bar and counterweight shall be provided with cotter pins; and the counterweight shall be prevented from dropping by either a bolt passing through both the bar and counterweight, or a bolt put through the extreme end of the bar, or, where the counterweight does not encircle the bar, a safety chain attached to it.

(4) Limit chains or other equally effective devices shall be provided to prevent the saw from swinging beyond the front or back edges of the table, or beyond a forward position where the gullets of the lowest saw teeth will rise above the table top.

(5) Inverted swing cutoff saws shall be provided with a hood that will cover the part of the saw that protrudes above the top of the table or above the material being cut. It shall automatically adjust itself to the thickness of and remain in contact with the material being cut.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-16515, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-16515, filed 5/9/73 and Order 73-4, § 296-24-16515, filed 5/7/73.]

WAC 296-24-16517 Radial saws. (1) The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters, broken saw teeth, etc., and will deflect sawdust away from the operator. The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection possible for the operation being performed.

(2) Each radial saw used for ripping shall be provided with nonkickback fingers or dogs located on both sides of the saw so as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator. They shall be designed to provide adequate holding power for all the thickness of material being cut.

(3) An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut.

(4) Installation shall be in such a manner that the front end of the unit will be slightly higher than the rear, so as to cause the cutting head to return to the starting position in the following manner when released by the operator:

(a) The cutting head or carriage shall return to the rest or starting position in a gentle motion;

(b) The cutting head or carriage shall not bounce or recoil when reaching the rest or starting position; and

(c) The cutting head or carriage will remain in the rest or starting position.

(5) Ripping and ploughing shall be against the direction in which the saw turns. The direction of the saw rotation shall be conspicuously marked on the hood. In addition, a permanent label not less than 1 1/2 inches by 3/4 inch with standard proportional lettering shall be affixed to the rear of the guard hood at approximately the level of the arbor, where the blade teeth exit the upper hood during the operation of the saw, reading as follows: "Danger: Do not rip or plough from this end." Such a label shall be colored standard danger red.

(6) Radial saws may be guarded with a fixed enclosure, fixed barrier guard, or a manually adjusted guard when specific conditions prevent use of the standard automatic adjusting guard. In those instances where alternate fixed-type guards are used, they must provide protection equivalent to the protection afforded by automatically adjusting guards. The alternate guards must be used in accordance with manufacturer's instruction and under sufficient supervision to ensure consistent compliance with the intent of the standard.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-16517, filed 1/11/90, effective 2/26/90; 89-11-035 (Order 89-03), § 296-24-16517, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-16517, filed 5/9/73 and Order 73-4, § 296-24-16517, filed 5/7/73.]

WAC 296-24-16519 Bandsaws and band resaws. (1) All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Bandsaw wheels shall be fully encased. The outside periphery of the enclosure shall be solid. The front and back of the band wheels shall be either enclosed by solid material or by wire mesh or perforated metal. Such mesh or perforated metal shall be not less than 0.037 inch (U.S. Gage No. 20), and the openings shall be not greater than three-eighths inch. Solid material used for this purpose shall be of an equivalent strength and firmness. The guard for the portion of the blade between the sliding guide and the upper-saw-wheel guard shall protect the saw blade at the front and outer side. This portion of the guard shall be self-adjusting to raise and lower with the guide. The upper-wheel guard shall be made to conform to the travel of the saw on the wheel, and the top member of the guard should have at least a 2-inch clearance outside the saw and be lined with smooth material, preferably metal. Effective brakes should be provided to stop the wheel in case of blade breakage.

(2) Each bandsaw machine shall be provided with a tension control device to indicate a proper tension for the standard saws used on the machine, in order to assist in the elimination of saw breakage due to improper tension.

(3) Feed rolls of band resaws shall be protected with a suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material, preferably metal, and the edge of the guard shall come to within three-eighths inch of the plane formed by the inside face of the feed roll in contact with the stock being cut.

[Order 73-5, § 296-24-16519, filed 5/9/73 and Order 73-4, § 296-24-16519, filed 5/7/73.]

WAC 296-24-16521 Jointers. (1) Each hand-fed planer and jointer with horizontal head shall be equipped with a cylindrical cutting head, the knife projection of which shall not exceed one-eighth inch beyond the cylindrical body of the head.

(2) The opening in the table shall be kept as small as possible. The clearance between the edge of the rear table and the cutter head shall be not more than one-eighth inch. The table throat opening shall be not more than two and one-half inches when tables are set or aligned with each other for zero cut.

(3) Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover all the section of the head on the working side of the fence or gage. The guard shall effectively keep the operator's hand from coming in contact with the revolving knives. The guard shall automatically adjust itself to cover the unused portion of the head and shall remain in contact with the material at all times.

(4) Each hand-fed jointer with horizontal cutting head shall have a guard which will cover the section of the head back of the gage or fence.

(5) Each jointer with vertical head shall have either an exhaust hood or other guard so arranged as to enclose completely the revolving head, except for a slot of such width as may be necessary and convenient for the application of the material to be jointed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16521, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16521, filed 5/9/73 and Order 73-4, § 296-24-16521, filed 5/7/73.]

WAC 296-24-16523 Tenoning machines. (1) Feed chains and sprockets of all double end tenoning machines shall be completely enclosed, except for that portion of chain used for conveying the stock.

(2) At the rear ends of frames over which feed conveyors run, sprockets and chains shall be guarded at the sides by plates projecting beyond the periphery of sprockets and the ends of lugs.

(3) Each tenoning machine shall have all cutting heads, and saws if used, covered by metal guards. These guards shall cover at least the unused part of the periphery of the cutting head. If such a guard is constructed of sheet metal, the material used shall be not less than one-sixteenth inch in

thickness, and if cast iron is used, it shall be not less than three-sixteenths inch in thickness.

(4) Where an exhaust system is used, the guard shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in subdivision (3) of this subsection.

[Order 76-6, § 296-24-16523, filed 3/1/76; Order 73-5, § 296-24-16523, filed 5/9/73 and Order 73-4, § 296-24-16523, filed 5/7/73.]

WAC 296-24-16525 Boring and mortising machines. (1) Safety-bit chucks with no projecting set screws shall be used.

(2) Boring bits should be provided with a guard that will enclose all portions of the bit and chuck above the material being worked.

(3) The top of the cutting chain and driving mechanism shall be enclosed.

(4) If there is a counterweight, one of the following or equivalent means shall be used to prevent its dropping:

(a) It shall be bolted to the bar by means of a bolt passing through both bar and counterweight;

(b) A bolt shall be put through the extreme end of the bar;

(c) Where the counterweight does not encircle the bar, a safety chain shall be attached to it;

(d) Other types of counterweights shall be suspended by chain or wire rope and shall travel in a pipe or other suitable enclosure wherever they might fall and cause injury.

(5) Universal joints on spindles of boring machines shall be completely enclosed in such a way as to prevent accidental contact by the operator.

(6) Each operating treadle shall be covered by an inverted U-shaped metal guard, fastened to the floor, and of adequate size to prevent accidental tripping.

[Order 73-5, § 296-24-16525, filed 5/9/73 and Order 73-4, § 296-24-16525, filed 5/7/73.]

WAC 296-24-16527 Shapers and similar equipment. (1) The cutting heads of each shaper, hand-fed panel raiser, or other similar machine not automatically fed, shall be enclosed with a cage or adjustable guard so designed as to keep the operator's hand away from the cutting edge. The diameter of circular shaper guards shall be not less than the greatest diameter of the cutter. In no case shall a warning device of leather or other material attached to the spindle be acceptable.

(2) All double-spindle shapers shall be provided with a spindle starting and stopping device for each spindle.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16527, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16527, filed 5/9/73 and Order 73-4, § 296-24-16527, filed 5/7/73.]

WAC 296-24-16529 Planing, molding, sticking, and matching machines. (1) Each planing, molding, sticking, and matching machine shall have all cutting heads, and saws if used, covered by a metal guard. If such guard is constructed of sheet metal, the material used shall be not less than 1/16 inch in thickness, and if cast iron is used, it shall be not less than three-sixteenths inch in thickness.

(2) Where an exhaust system is used, the guards shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in (1) of this section.

(3) Feed rolls shall be guarded by a hood or suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be fastened to the frame carrying the rolls so as to remain in adjustment for any thickness of stock.

(4) Surfacers or planers used in thicknessing multiple pieces of material simultaneously shall be provided with sectional infeed rolls having sufficient yield in the construction of the sections to provide feeding contact pressure on the stock, over the permissible range of variation in stock thickness specified or for which the machine is designed. In lieu of such yielding sectional rolls, suitable section kickback finger devices shall be provided at the infeed end.

[Order 73-5, § 296-24-16529, filed 5/9/73 and Order 73-4, § 296-24-16529, filed 5/7/73.]

WAC 296-24-16531 Profile and swing-head lathes and heel turning machine. (1) Each profile and swing-head lathe shall have all cutting heads covered by a metal guard. If such a guard is constructed of sheet metal, the material used shall be not less than one-sixteenth inch in thickness; and if cast iron is used, it shall not be less than three-sixteenths inch in thickness.

(2) Cutting heads on turning lathes, whether rotating or not, shall be covered as completely as possible by hoods or shields, which should be hinged to the machines so that they can be thrown back for making adjustments.

(3) Shoe last and spoke lathes, doweling machines, heel turning machines, and other automatic turning lathes of the rotating knife type shall be equipped with hoods enclosing the cutter blades completely except at the contact points while the stock is being cut.

(4) Lathes used for turning long pieces of stock held only between the two centers shall be equipped with long curved guards extending over the tops of the lathes in order to prevent the work pieces from being thrown out of the machines if they should become loose.

(5) Where an exhaust system is used, the guard shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in subsection (1) of this section.

(6) Wood turning lathes of the type found in school/vocational classrooms or woodshops are regulated by WAC 296-24-15001.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-16531, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16531, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16531, filed 5/9/73 and Order 73-4, § 296-24-16531, filed 5/7/73.]

WAC 296-24-16533 Sanding machines. (1) Feed rolls of self-feed sanding machines shall be protected with a semicylindrical guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material, preferably metal, and firmly secured to the frame carrying rolls so as to remain in adjustment for any thickness of stock. The bottom of the guard should come down to within three-eighths inch of a plane formed by the bottom or contact face of the feed roll where it touches the stock.

(2) Each drum sanding machine shall have an exhaust hood, or other guard if no exhaust system is required, so arranged as to enclose the revolving drum, except for that portion of the drum above the table, if a table is used, which may be necessary and convenient for the application of the material to be finished.

(3) Each disk sanding machine shall have the exhaust hood, or other guard if no exhaust system is required, so arranged as to enclose the revolving disk, except for that portion of the disk above the table, if a table is used, which may be necessary for the application of the material to be finished.

(4) Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs on to a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accidental contact.

[Order 73-5, § 296-24-16533, filed 5/9/73 and Order 73-4, § 296-24-16533, filed 5/7/73.]

WAC 296-24-16535 Veneer cutters and wringers. (1) Veneer slicer knives shall be guarded to prevent accidental contact with knife edge, at both front and rear.

(2) Veneer clippers shall have automatic feed or shall be provided with a guard which will make it impossible to place a finger or fingers under the knife while feeding or removing the stock.

(3) Sprockets on chain or slat-belt conveyors shall be enclosed.

(4) Where practicable, hand and foot-power guillotine veneer cutters shall be provided with rods or plates or other satisfactory means, so arranged on the feeding side that the hands cannot reach the cutting edge of the knife while feeding or holding the stock in place.

(5) Power-driven guillotine veneer cutters, except continuous feed trimmers, shall be equipped with:

(a) Starting devices which require the simultaneous action of both hands to start the cutting motion and of at least one hand on a control during the complete stroke of the knife; or

(b) An automatic guard which will remove the hands of the operator from the danger zone at every descent of the blade, used in conjunction with one-hand starting devices which require two distinct movements of the device to start the cutting motion, and so designed as to return positively to the nonstarting position after each complete cycle of the knife.

(6) Where two or more workers are employed at the same time on the same power-driven guillotine veneer cutter equipped with two-hand control, the device shall be so arranged that each worker shall be required to use both hands simultaneously on the controls to start the cutting motion, and at least one hand on a control to complete the cut.

(7) Power-driven guillotine veneer cutters, other than continuous trimmers, shall be provided, in addition to the brake or other stopping mechanism, with an emergency device which will prevent the machine from operating in the event of failure of the brake when the starting mechanism is in the nonstarting position.

[Order 73-5, § 296-24-16535, filed 5/9/73 and Order 73-4, § 296-24-16535, filed 5/7/73.]

WAC 296-24-16537 Miscellaneous machines. (1) The feed rolls of roll type glue spreaders shall be guarded by a semicylindrical guard. The bottom of the guard shall come to within three-eighths inch of a plane formed by bottom or contact face of the feed roll where it touches the stock.

(2) Drag saws shall be so located as to give at least a four-foot clearance for passage when the saw is at the extreme end of the stroke; or if such clearance is not obtainable, the saw and its driving mechanism shall be provided with a standard enclosure.

(3) For combination or universal machines each point of operation of any tool shall be guarded as required for such a tool in a separate machine.

(4) The mention of specific machines in WAC 296-24-16503 through 296-24-16535, inclusive, is not intended to exclude other machines from the requirement that suitable guards and exhaust hoods be provided to reduce to a minimum the hazard due to the point of operation of such machines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16537, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16537, filed 5/9/73 and Order 73-4, § 296-24-16537, filed 5/7/73.]

WAC 296-24-16539 Inspection and maintenance of machinery. (1) Dull, badly set, improperly filed, or improperly tensioned saws shall be immediately removed from service, before they begin to cause the material to stick, jam, or kick back when it is fed to the saw at normal speed. Saws to which gum has adhered on the sides shall be immediately cleaned.

(2) All knives and cutting heads of machines shall be kept sharp, properly adjusted, and firmly secured. Where two or more knives are used in one head, they shall be properly balanced.

(3) Bearings shall be kept free from lost motion and shall be well lubricated.

(4) Arbors of all circular saws shall be free from play.

(5) Sharpening or tensioning of saw blades or cutters shall be done only by persons of demonstrated skill in this kind of work.

(6) Emphasis is placed upon the importance of maintaining cleanliness around machinery, particularly as regards the effective functioning of guards and the prevention of fire hazards in switch enclosures, bearings, and motors.

(7) All cracked saws shall be removed from service.

(8) The practice of inserting wedges between the saw disk and the collar to form what is commonly known as a "wobble saw" shall not be permitted.

(9) Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

(10) The knife blade of jointers shall be so installed and adjusted that it does not protrude more than one-eighth inch beyond the cylindrical body of the head. Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

(11) Whenever veneer slicers or rotary veneer-cutting-machines have been shutdown for the purpose of inserting logs or to make adjustments, operators shall make sure that

machine is clear and other workers are not in a hazardous position before starting the machine.

(12) Operators shall not ride the carriage of a veneer slicer.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-16539, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16539, filed 7/13/83, effective 9/12/83; 82-13-045 (Order 82-22), § 296-24-16539, filed 6/11/82; Order 73-5, § 296-24-16539, filed 5/9/73 and Order 73-4, § 296-24-16539, filed 5/7/73.]

WAC 296-24-180 Abrasive wheel machinery.

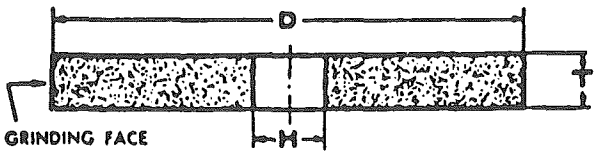
[Order 73-5, § 296-24-180, filed 5/9/73 and Order 73-4, § 296-24-180, filed 5/7/73.]

WAC 296-24-18001 Definitions. (1) "Type 1 straight wheels" means wheels having diameter, thickness, and hole size dimensions, and they should be used only on the periphery. Type 1 wheels shall be mounted between flanges. See Figure No. O-1.

(a) Limitation: Hole dimension (H) should not be greater than two-thirds of wheel diameter dimension (D) for precision, cylindrical, centerless, or surface grinding applications. Maximum hole size for all other applications should not exceed one-half wheel diameter.

Figure No. O-1

Type 1—Straight Wheels.



Type 1—Straight Wheel.

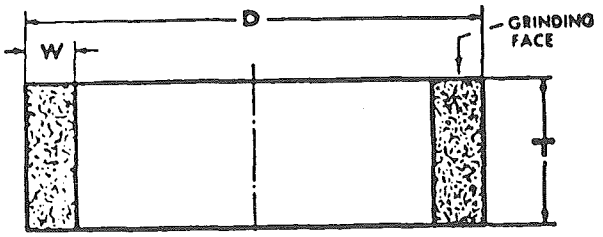
Peripheral grinding wheel having a diameter, thickness and hole.

(2) "Type 2 cylinder wheels" means wheels having diameter, wheel thickness, and rim thickness dimensions. Grinding is performed on the rim face only, dimension W. Cylinder wheels may be plain, plate mounted, inserted nut, or of the projecting stud type. See Figure No. O-2.

(a) Limitation: Rim height, T dimension, is generally equal to or greater than rim thickness, W dimension.

Figure No. O-2

(Type 2—Cylinder Wheel)



Type 2—Cylinder Wheel

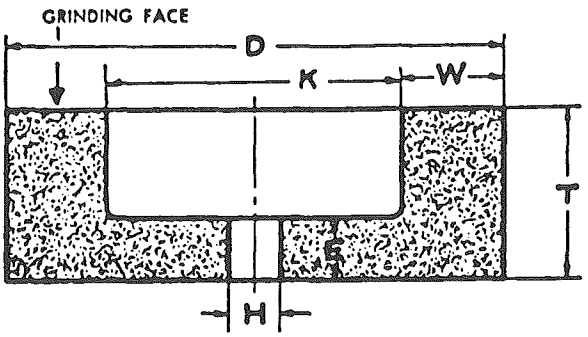
Side grinding wheel having a diameter, thickness and wall—wheel is mounted on the diameter.

(3) "Type 6 straight cup wheels" means wheels having diameter, thickness, hole size, rim thickness, and back thickness dimensions. Grinding is always performed on rim face, W dimension. See Figure No. O-3.

(a) Limitation: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition, when unthreaded hole wheels are specified, the inside flat, K dimension, must be large enough to accommodate a suitable flange.

Figure No. O-3

(Type 6—Straight Cup Wheels)



Type 6—Straight Cup Wheel

Side grinding wheel having a diameter, thickness and hole with one side straight or flat and the opposite side recessed. This type, however, differs from Type 5 in that the grinding is performed on the wall of the abrasive created by the difference between the diameter of the recess and the outside diameter of the wheel. Therefore, the wall dimension "W" takes precedence over the diameter of the recess as an essential intermediate dimension to describe this shape type.

(4) "Type 11 flaring cup wheels" mean wheels having double diameter dimensions D and J and in addition have thickness, hole size, rim and back thickness dimensions. Grinding is always performed on rim face, W dimension. Type 11 wheels are subject to all limitations of use and mounting listed for type 6 straight sided cup wheels definition. See Figure No. O-4.

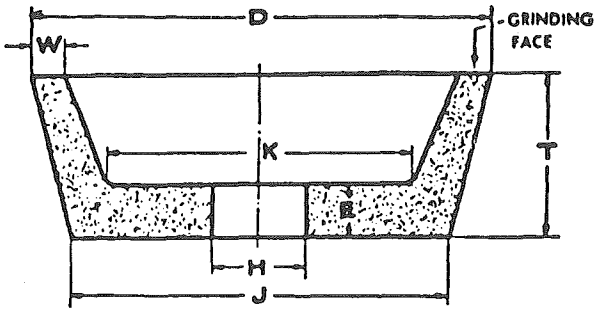
(a) Limitation: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition when unthreaded hole wheels are specified the inside flat, K dimension, shall be large enough to accommodate a suitable flange.

(5) "Modified types 6 and 11 wheels (terrazzo)" mean some type 6 and 11 cup wheels used in the terrazzo trade having tapered K dimensions to match a special tapered flange furnished by the machine builder. See Figure No. O-5.

(a) Limitation: These wheels shall be mounted only with a special tapered flange.

Figure No. O-4

Type 11—Flaring Cup Wheels

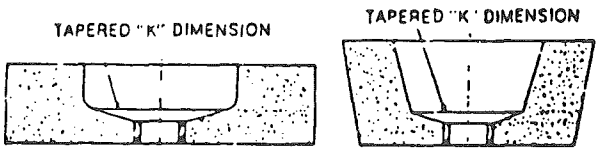


Type 11—Flaring Cup Wheel

Side grinding wheel having a wall flared or tapered outward from the back. Wall thickness at the back is normally greater than at the grinding face (W).

Figure No. O-5

Type 6 & 11—Wheels (Terrazzo)



Type 6 (Terrazzo) Type 11 (Terrazzo)

Typical examples of modified types 6 and 11 wheels (terrazzo) showing tapered K dimensions.

(6) "Types 27 and 28 depressed center wheels" mean wheels having diameter, thickness, and hole size dimensions. Both types are reinforced, organic bonded wheels having offset hubs which permit side and peripheral grinding operations without interference with the mounting. Type 27 wheels are manufactured with flat grinding rims permitting notching and cutting operations. Type 28 wheels have saucer shaped grinding rims.

(a) Limitations: Special supporting, back adapter and inside flange nuts are required for the proper mounting of these types of wheels subject to limitations of WAC 296-24-18007 (4)(a) and (b).

(b) Mounts which are affixed to the wheel by the manufacturer may not require an inside nut and shall not be reused.

(7) "Type 27A depressed center, cutting-off wheels" mean wheels having diameter, thickness, and hole size dimensions. They are reinforced, organic bonded, offset hub type wheels, usually 16 inches diameter and larger, specially designed for use on cutting-off machines where mounting nut or outer flange interference cannot be tolerated.

(a) Limitations: See WAC 296-24-18007.

(8) "Surface feet per minute" (s.f.p.m.) means the distance in feet any one abrasive grain on the peripheral surface of a grinding wheel travels in 1 minute.

Surface Feet Per Minute =

$$\frac{3.1416 \times \text{diameter in inches} \times \text{r.p.m.}}{12}$$

or

$$.262 \times \text{diameter in inches} \times \text{r.p.m.}$$

Examples: (a) 24-inch diameter wheel, 1,000 revolutions per minute. Surface Feet per minute .262 X 24 X 1,000 = 6,288 s.f.p.m.

(b) 12-inch diameter wheel, 1,000 revolutions per minute. Surface Feet per minute .262 X 12 X 1,000 = 3,144 s.f.p.m.

(9) "Flanges" means collars, discs or plates between which wheels are mounted and are referred to as adaptor, sleeve, or back up type. See WAC 296-24-18007 for full description.

(10) "Snagging" means grinding which removes relatively large amounts of material without regard to close tolerances or surface finish requirements.

(11) "Off-hand grinding" means the grinding of any material or part which is held in the operator's hand.

(12) "Safety guard" means an enclosure designed to restrain the pieces of the grinding wheel and furnish all possible protection in the event that the wheel is broken in operation. See WAC 296-24-18005.

(13) "Cutting off wheels" mean wheels having diameter, thickness and hole size dimensions and are subject to all limitations of mounting and use listed for type 1 wheels, the definition in WAC 296-24-18001(1) and 296-24-18009. They may be steel centered, diamond abrasive or organic bonded abrasive of the plain or reinforced type.

(a) Limitation: Cutting off wheels are recommended only for use on specially designed and fully guarded ma-

chines and are subject to the following maximum thickness and hole size limitations.

Wheel diameter:	Max. thickness (inch)
6 inch and smaller	3/16
Larger than 6 inches to 12 inches	1/4
Larger than 12 inches to 23 inches	3/8
Larger than 23 inches	1/2

(b) Maximum hole size for cutting-off wheels should not be larger than 1/4-wheel diameter.

(14) "Abrasive wheel" means a cutting tool consisting of abrasive grains held together by organic or inorganic bonds. Diamond and reinforced wheels are included.

(15) "Organic wheels" means wheels which are bonded by means of an organic material such as resin, rubber, shellac, or other similar bonding agent.

(16) "Inorganic wheels" means wheels which are bonded by means of inorganic material such as clay, glass, porcelain, sodium silicate, magnesium oxychloride, or metal. Wheels bonded with clay, glass, porcelain or related ceramic materials are characterized as "vitrified bonded wheels."

[Order 73-5, § 296-24-18001, filed 5/9/73 and Order 73-4, § 296-24-18001, filed 5/7/73.]

WAC 296-24-18003 General requirements. (1) Machine guarding. Abrasive wheels shall be used only on machines provided with safety guards as defined in WAC 296-24-18005, except:

(a) Wheels used for internal work while within the work being ground;

(b) Mounted wheels used in portable operations 2 inches and smaller in diameter; and

(c) Types 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pot balls where the work offers protection.

(2) Guard design. The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard, except:

(a) Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted; and

(b) The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

(3) Flanges. Grinding machines shall be equipped with flanges in accordance with WAC 296-24-18007.

(4) Work rests. On offhand grinding machines, work rests shall be used to support the work. They shall be of rigid construction and designed to be adjustable to compensate for wheel wear. Work rests shall be kept adjusted closely to the wheel with a maximum opening of one-eighth inch to prevent the work from being jammed between the wheel and the rest, which may cause wheel breakage. The work rest shall be securely clamped after each adjustment. The adjustment shall not be made with the wheel in motion.

(5) Excluded machinery. Natural sandstone wheels and metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface are not covered by WAC 296-24-18003.

[Order 73-5, § 296-24-18003, filed 5/9/73; Order 73-4, § 296-24-18003, filed 5/7/73.]

WAC 296-24-18005 Guarding of abrasive wheel machinery. (1) Cup wheels. Cup wheels (types 6 and 11) shall be protected by:

(a) Safety guards as specified in (1) through (10) of this section.

(b) Band type guards as specified in (11) of this section; and

(c) Special "revolving cup guards" which mount behind the wheel and turn with it. They shall be made of steel or other material with adequate strength and shall enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform with all requirements of this section. It is necessary to maintain clearance between the wheel side and the guard. This clearance shall not exceed one-sixteenth inch.

(2) Guard exposure angles. The maximum exposure angles specified in (3) through (8) of this section shall not be exceeded. Visors or other accessory equipment shall not be included as a part of the guard when measuring the guard opening, unless such equipment has strength equal to that of the guard.

(3) Bench and floor stands. The angular exposure of the grinding wheel periphery and sides for safety guards used on machines known as bench and floor stands should not exceed 90° or one-fourth of the periphery. This exposure shall begin at a point not more than 65° above the horizontal plane of the wheel spindle. (See Figures O-6 and O-7 and (9) of this section.)

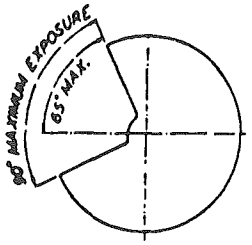


Figure No. O-6

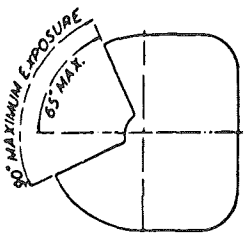


Figure No. O-7

Wherever the nature of the work requires contact with the wheel below the horizontal plane of the spindle, the exposure shall not exceed 125°. (See Figures O-8 and O-9.)

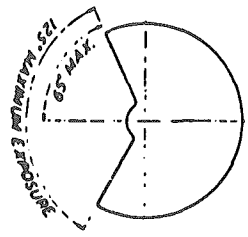


Figure No. O-8

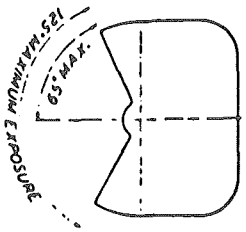


Figure No. O-9

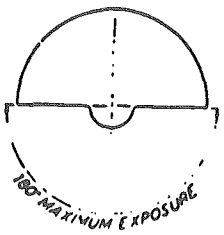


Figure No. O-14

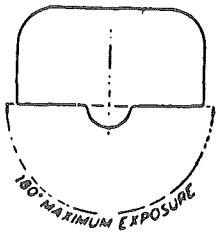


Figure No. O-15

(4) Cylindrical grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on cylindrical grinding machines shall not exceed 180°. This exposure shall begin at a point not more than 65° above the horizontal plane of the wheel spindle. (See Figures O-10 and O-11 and (9) of this section.)

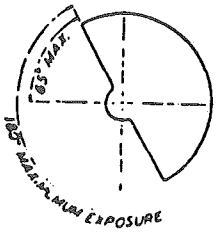


Figure No. O-10

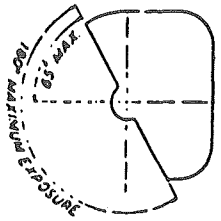


Figure No. O-11

(5) Surface grinders and cutting-off machines. The maximum angular exposure of the grinding wheels periphery and sides for safety guards used on cutting-off machines and on surface grinding machines which employ the wheel periphery shall not exceed 150°. This exposure shall begin at a point not less than 15° below the horizontal plane of the wheel spindle. (See Figures O-12 and O-13.)

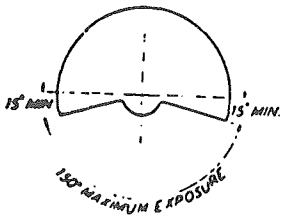


Figure No. O-12

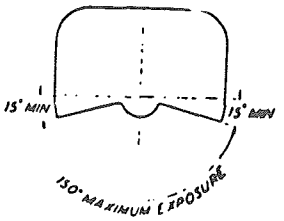


Figure No. O-13

(6) Swing frame grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on machines known as swing frame grinding machines shall not exceed 180°, and the top half of the wheel shall be enclosed at all times. (See Figures O-14 and O-15.)

(7) Automatic snagging machines. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on grinders known as automatic snagging machines shall not exceed 180° and the top half of the wheel shall be enclosed at all times. (See Figures O-14 and O-15.)

(8) Top grinding. Where the work is applied to the wheel above the horizontal centerline, the exposure of the grinding wheel periphery shall be as small as possible and shall not exceed 60°. (See Figures O-16 and O-17.)

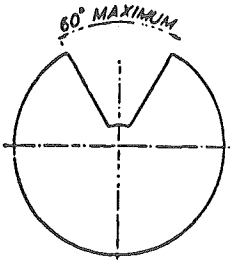


Figure No. O-16

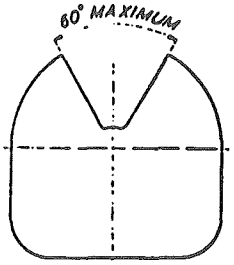


Figure No. O-17

(9) Exposure adjustment. Safety guards of the types described in (3) and (4) of this section, where the operator stands in front of the opening, shall be constructed so that the peripheral protecting member can be adjusted to the constantly decreasing diameter of the wheel. The maximum angular exposure above the horizontal plane of the wheel spindle as specified in (3) and (4) of this section shall never be exceeded, and the distance between the wheel periphery and the adjustable tongue or the end of the peripheral member at the top shall never exceed one-fourth inch. (See Figures O-18, O-19, O-20, O-21, O-22, and O-23.)

(10) Material requirements and minimum dimensions. (a) See Figures O-36 and O-37 and Table O-9 for minimum basic thickness of peripheral and side members for various types of safety guards and classes of service.

(b) If operating speed does not exceed 8,000 surface feet per minute cast iron safety guards, malleable iron guards or other guards as described in item (10)(c) of this subsection.

(c) Cast steel, or structural steel, safety guards as specified in Figures O-36 and O-37 and Table O-9 shall be used where operating speeds of wheels are faster than 8,000 surface feet per minute up to a maximum of 16,000 surface feet per minute.

(d) For cutting-off wheels 16 inches diameter and smaller and where speed does not exceed 16,000 surface feet

per minute, cast iron or malleable iron safety guards as specified in Figures O-36 and O-37 and in Table O-9 shall be used.

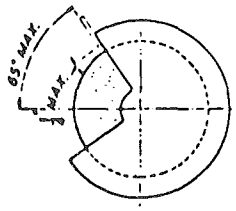


Figure No. O-18

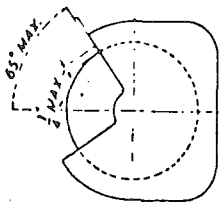


Figure No. O-19

CORRECT

Showing adjustable tongue giving required angular protection for all sizes of wheel used.

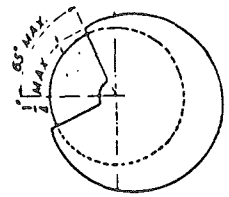


Figure No. O-20

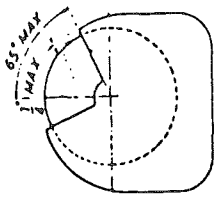


Figure No. O-21

CORRECT

Showing movable guard with opening small enough to give required protection for smallest size wheel used.

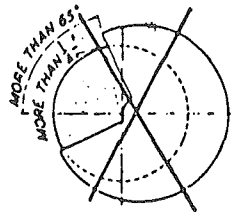


Figure No. O-22

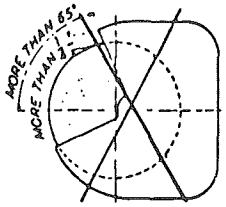


Figure No. O-23

INCORRECT

Showing movable guard with size of opening correct for full size wheel but too large for smaller wheels.

(e) For cutting-off wheels larger than 16 inches diameter and where speed does not exceed 14,200 surface feet per minute, safety guards as specified in Figures O-27 and O-28, and in Table O-1 shall be used.

(f) For thread grinding wheels not exceeding 1 inch in thickness cast iron or malleable iron safety guards as specified in Figures O-36 and O-37, and in Table O-9 shall be used.

(11) Band type guards—General specifications. Band type guards shall conform to the following general specifications:

(a) The bands shall be of steel plate or other material of equal or greater strength. They shall be continuous, the ends being either riveted, bolted, or welded together in such a manner as to leave the inside free from projections.

(b) The inside diameter of the band shall not be more than 1 inch larger than the outside diameter of the wheel, and shall be mounted as nearly concentric with the wheel as practicable.

(c) The band shall be of sufficient width and its position kept so adjusted that at no time will the wheel protrude beyond the edge of the band a distance greater than that indicated in Figure O-29 and in Table O-2 or the wall thickness (W), whichever is smaller.

(12) Guard design specifications. Abrasive wheel machinery guards shall meet the design specifications of the American National Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, ANSI B7.1-1970. This requirement shall not apply to natural sandstone wheels or metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface.

[Order 76-6, § 296-24-18005, filed 3/1/76; Order 73-5, § 296-24-18005, filed 5/9/73 and Order 73-4, § 296-24-18005, filed 5/7/73.]

WAC 296-24-18007 Flanges. (1) General requirements. All abrasive wheels shall be mounted between flanges which shall not be less than one-third the diameter of the wheel.

(a) Exceptions:

(i) Mounted wheels.

(ii) Portable wheels with threaded inserts or projecting studs.

(iii) Abrasive discs (inserted nut, inserted washer and projecting stud type).

(iv) Plate mounted wheels.

(v) Cylinders, cup, or segmental wheels that are mounted in chucks.

(vi) Types 27 and 28 wheels.

(vii) Certain internal wheels.

(viii) Modified types 6 and 11 wheels (terrazzo).

(ix) Cutting-off wheels, Types 1 and 27A (see (b) and (c) of this section).

(b) Type 1 cutting-off wheels are to be mounted between properly relieved flanges which have matching bearing surfaces. Such flanges shall be at least one-fourth the wheel diameter.

(c) Type 27A cutting-off wheels are designed to be mounted by means of flat, not relieved, flanges having matching bearing surfaces and which may be less than one-third but shall not be less than one-fourth the wheel diameter. (See Figure O-24 for one such type of mounting.)

(d) There are three general types of flanges:

(i) Straight relieved flanges (see Figure O-32);

(ii) Straight unrelieved flanges (see Figure O-30);

(iii) Adaptor flanges (see Figures O-33 and O-34).

(e) Regardless of flange type used, the wheel shall always be guarded. Blotters shall be used in accordance with (6) of this section.

(2) Design and material.

(a) Flanges shall be of such design as to satisfactorily transmit the driving torque from the spindle to the grinding wheel.

(b) Flanges may be made of steel, cast iron, or other material of equal or greater strength and rigidity.

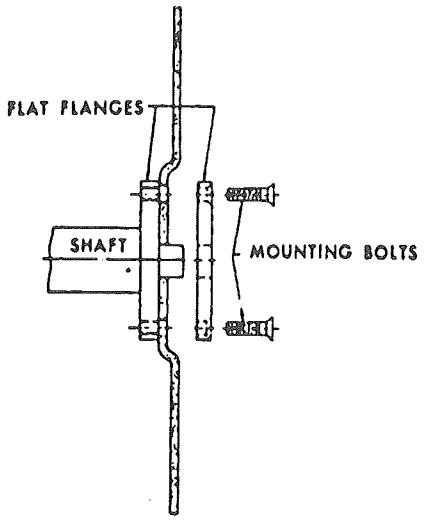


Figure No. O-24

The type 27A wheel is mounted between flat nonrelieved flanges of equal bearing surfaces.

(c) Flanges shall be designed with respect to rigidity so that when tightened, the radial width of bearing surface of contact on the wheel is maintained. (See Table O-6 and Figure O-32.)

(3) Finish and balance. Flanges shall be dimensionally accurate and in good balance. There shall be no rough surfaces or sharp edges.

(4) Uniformity of diameter.

(a) Both flanges, of any type, between which a wheel is mounted, shall be of the same diameter and have equal bearing surface. Exceptions are set forth in (4)(b) and (c).

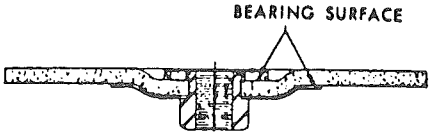
(b) Type 27 and Type 28 wheels, because of their shape and usage, require specially designed adaptors. The back flange shall extend beyond the central hub or raised portion and contact the wheel to counteract the side pressure on the wheel in use. The adaptor nut which is less than the minimum one-third diameter of wheel fits in the depressed side of wheel to prevent interference in side grinding and serves to drive the wheel by its clamping force against the depressed portion of the back flange. The variance in flange diameters, the adaptor nut being less than one-third wheel diameter, and the use of side pressure in wheel operation limit the use to reinforced organic bonded wheels. Mounts which are affixed to the wheel by the manufacturer shall not be reused. Type 27 and Type 28 wheels shall be used only with a safety guard located between wheel and operator during use. (See Figure O-24-A.)

(c) Modified Types 6 and 11 wheels (terrazzo) with tapered K dimension.

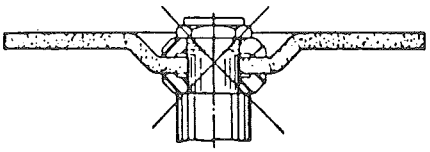
(5) Recess and undercut. (a) Straight relieved flanges made according to Table O-6 and Figure O-32 shall be recessed at least one-sixteenth inch on the side next to the wheel for a distance as specified in Table O-6.

(b) Straight flanges of the adaptor or sleeve type (Table O-7 and Figures O-33 and O-34) shall be undercut so that there will be no bearing on the sides of the wheel within one-eighth inch of the arbor hole.

Figure No. O-24-A



CORRECT
PROPERLY MOUNTED
TYPE 27 WHEEL



INCORRECT
IMPROPERLY MOUNTED
TYPE 27 WHEEL

Types 27 and 28 wheels, because of their shape, require specially designed adaptors.

(6) Blotters.

(a) Blotters (compressible washers) shall always be used between flanges and abrasive wheel surfaces to insure uniform distribution of flange pressure. (See WAC 296-24-18009.)

(b) Exception:

(i) Mounted wheels.

(ii) Abrasive discs (inserted nut, inserted washer, and projecting stud type).

(iii) Plate mounted wheels.

(iv) Cylinders, cups, or segmental wheels that are mounted in chucks.

(v) Types 27 and 28 wheels.

(vi) Certain Type 1 and Type 27A cutting-off wheels.

(vii) Certain internal wheels.

(viii) Type 4 tapered wheels.

(ix) Diamond wheels, except certain vitrified diamond wheels.

(x) Modified types 6 and 11 wheel (terrazzo)—blotters applied flat side of wheel only.

(7) Driving flange. The driving flange shall be securely fastened to the spindle and the bearing surface shall run true. When more than one wheel is mounted between a single set of flanges, wheels may be cemented together or separated by specially designed spacers. Spacers shall be equal in faces. (See WAC 296-24-18009(6).)

(8) Dimensions.

(a) Tables O-4 and O-6 and Figures O-30 and O-32 show minimum dimensions for straight relieved and unre-

lieved flanges for use with wheels with small holes that fit directly on the machine spindle. Dimensions of such flanges shall never be less than indicated and should be greater where practicable.

(b) Table O-5, and Table O-7 and Figures O-31, O-33, O-34 show minimum dimensions for straight adaptor flanges for use with wheels having holes larger than the spindle. Dimensions of such adaptor flanges shall never be less than indicated and should be greater where practicable.

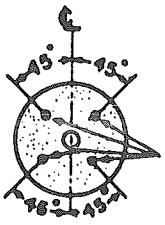
(c) Table O-8 and Figure O-35 show minimum dimensions for straight flanges that are an integral part of wheel sleeves which are frequently used on precision grinding machines. Dimensions of such flanges shall never be less than indicated and should be greater where practicable.

(9) Repairs and maintenance. All flanges shall be maintained in good condition. When the bearing surfaces become worn, warped, sprung, or damaged they should be trued or refaced. When refacing or truing, care shall be exercised to make sure that proper relief and rigidity is maintained as specified in (2) and (5) of this section and they shall be replaced when they do not conform to these requirements and Table O-4, Figure O-30, Table O-5, Figure O-31, Table O-6, Figure O-32, and Table O-35. Failure to observe these rules might cause excessive flange pressure around the hole of the wheel. This is especially true of wheel-sleeve or adaptor flanges.

[Order 73-5, § 296-24-18007, filed 5/9/73 and Order 73-4, § 296-24-18007, filed 5/7/73.]

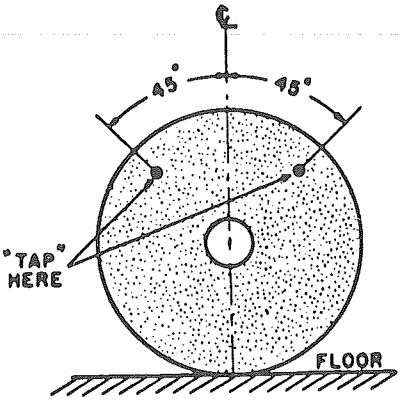
WAC 296-24-18009 Mounting. (1) Inspection. Immediately before mounting, all wheels shall be closely inspected and sounded by the user (ring test) to make sure they have not been damaged in transit, storage, or otherwise. The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel. Wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels. If they sound cracked (dead), they shall not be used. This is known as the "ring test."

(a) Wheels must be dry and free from sawdust when applying the ring test, otherwise the sound will be deadened. It should also be noted that organic bonded wheels do not emit the same clear metallic ring as do vitrified and silicate wheels.



Light Wheels
Suspend from hole by
small pin or flanger

Figure No. O-25



Heavy Wheels
Support on clean hard floor

Figure No. O-26

(b) "Tap" wheels about 45° each side of the vertical centerline and about 1 or 2 inches from the periphery as indicated by the spots in Figure O-25 and Figure O-26. Then rotate the wheel 45° and repeat the test. A sound and undamaged wheel will give a clear metallic tone. If cracked, there will be a dead sound and not a clear "ring."

(2) Arbor size. Grinding wheels shall fit freely on the spindle and remain free under all grinding conditions. A controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) is essential to avoid excessive pressure from mounting and spindle expansion. To accomplish this, the machine spindle shall be made to nominal (standard) size plus zero minus .002 inch, and the wheel hole shall be made suitably oversize to assure safety clearance under the conditions of operating heat and pressure.

(3) Surface condition. All contact surfaces of wheels, blotters and flanges shall be flat and free of foreign matter.

(4) Bushing. When a bushing is used in the wheel hole it shall not exceed the width of the wheel and shall not contact the flanges.

(5) Blotters. When blotters or flange facings of compressible material are required, they shall cover entire contact area of wheel flanges. Highly compressible material such as blotting paper as normally used should not exceed .025 inch in thickness. If material of lower compressibility is used, greater thickness may be necessary. Blotters need not be used with the following types of wheels:

(a) Mounted wheels.

(b) Abrasive discs (inserted nut, inserted washer, and projecting-stud type).

(c) Plate mounted wheels.

(d) Cylinders, cups, or segmental wheels that are mounted in chucks.

(e) Types 27 and 28 wheels.

(f) Certain Type 1 and Type 27A cutting-off wheels.

(g) Certain internal wheels.

(h) Type 4 tapered wheels.

(i) Diamond wheels, except certain vitrified diamond wheels.

(6) Multiple wheel mounting. When more than one wheel is mounted between a single set of flanges, wheels may be cemented together or separated by specially designed

spacers. Spacers shall be equal in diameter to the mounting flanges and have equal bearing surfaces. When mounting wheels which have not been cemented together, or ones which do not utilize separating spacers, care must be exercised to use wheels specially manufactured for that purpose.

(7) Replacing safety guard. After mounting a wheel, care should be taken to see that the safety guard is properly positioned before starting the wheel.

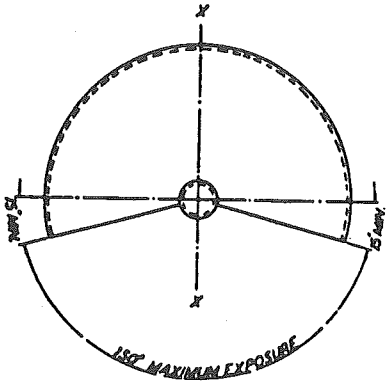
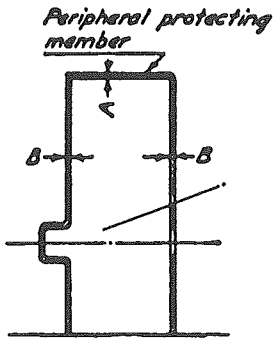


Figure No. O-27



Section X-X

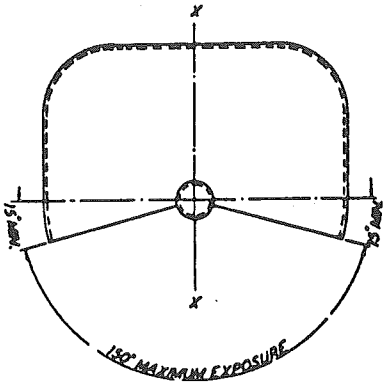


Figure No. O-28

TABLE O-1

MINIMUM BASIC THICKNESS FOR PERIPHERAL AND SIDE MEMBERS FOR SAFETY GUARDS USED WITH CUTTING-OFF WHEELS

(TABLE O-1: Part 1— 6" through 30")

Material used in construction of guard	Maximum thickness of cutting off wheel	Speed not to exceed	Cutting off wheel diameters					
			6 to 11 inches		Over 11 to 20 in.		Over 20 to 30 in.	
			A	B	A	B	A	B
Structural steel min. tensile strength 60,000 p.s.i.)	1/2 inch or less	14,200 SFPM	1/16	1/16	3/32	3/32	1/8	1/8
	1/2 inch or less	16,000 SFPM	3/32	1/8	1/8	1/8	3/16	1/8

(TABLE O-1:Part 2—Over 30" through 72")

Material used in construction of guard	thickness of cutting off wheel	Maximum Speed not to exceed	Cutting off wheel diameters			
			Over 30 to 48 in.		Over 48 to 72 in.	
			A	B	A	B
Structural steel min. tensile strength 60,000 p.s.i.)	1/2 inch or less	14,200 SFPM	3/16	3/16	1/4	1/4
	1/2 inch or less	16,000 SFPM	1/4	3/16	5/16	1/4

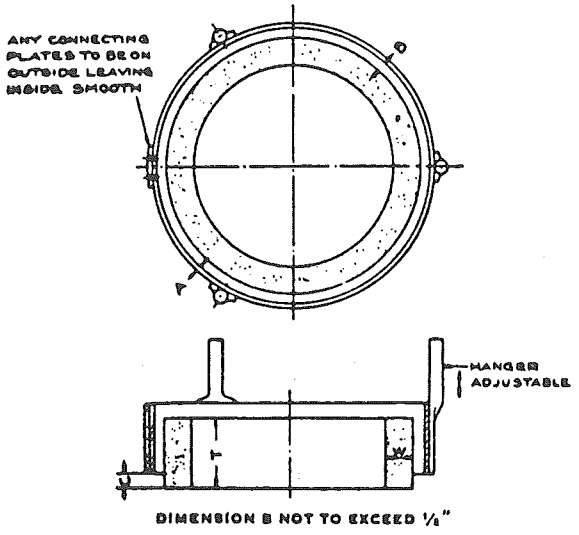


Figure No. O-29

TABLE O-2

EXPOSURE VERSUS WHEEL THICKNESS

Overall thickness of wheel (T) (inches)	Maximum exposure of wheel (C) (inches)
1/2	1/4
1	1/2
2	3/4
3	1
4	1 1/2
5 and over	2

TABLE O-3

GUIDE FOR CONSTRUCTION OF BAND TYPE
(Maximum Wheel Speed 7,000 SFPM)

Minimum material specifications	Diameter of wheel	Minimum thickness of band A	Minimum diameter of rivets	Maximum distance between centers of rivets
	Inches	Inches	Inches	Inches
Hot rolled steel SAE 1008	Under 8	1/16	3/16	3/4
	8 to 24	1/8	1/4	1
	Over 24 to 30	1/4	3/8	1 1/4

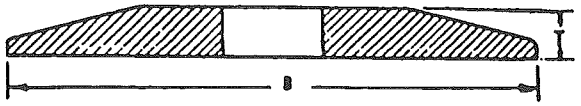


Figure No. O-30

Driving flange secured to spindle for use only on portable wheels with threaded inserts or projecting studs.

TABLE O-4

MINIMUM DIMENSIONS FOR STRAIGHT UNRELIEVED FLANGES FOR WHEELS WITH THREADED INSERTS OR PROJECTING STUDS

A Diameter of wheel	B[1] Minimum outside diameter of flange	T Minimum thickness of flange
Inches	Inches	Inches
1	5/8	1/8
2	1	1/8
3	1	3/16
4	1 3/8	3/16
5	1 3/4	1/4
6	2	3/8

[1]Note: Must be large enough to extend beyond the bushing. Where prong anchor or cupback bushing are used, this footnote does not apply.

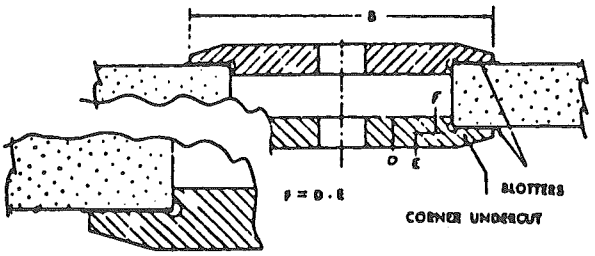


Figure No. O-31

TABLE O-5

MINIMUM DIMENSIONS FOR STRAIGHT ADAPTOR FLANGE FOR ORGANIC BONDED WHEELS OVER 1 1/4 INCHES THICK[1]

Wheel diameter	Wheel hole diameter	B Minimum flange diameter	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of undercut	F[1] (D-E) Minimum thickness
Inches	Inches	Inches	Inches	Inches	Inches
12 to 14	4	6	7/8	3/8	1/2
	5	7	7/8	3/8	1/2
	6	8	7/8	3/8	1/2
Larger than 14 to 18	4	6	7/8	3/8	1/2
	5	7	7/8	3/8	1/2
	6	8	7/8	3/8	1/2
	7	9	7/8	3/8	1/2
	8	10	7/8	3/8	1/2
Larger than 18 to 24	6	8	1	1/2	1/2
	7	9	1	1/2	1/2
	8	10	1	1/2	1/2
	10	12	1	1/2	1/2
	12	14	1	1/2	1/2
Larger than 24 to 30	12	15	1	1/2	1/2
Larger than 30 to 36	12	15	1 3/8	7/8	1/2

[1]For wheels under 1/4 inches thick F dimension shall not exceed 40 percent of wheel thickness.

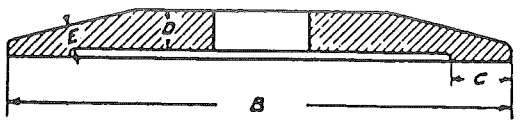


Figure No. O-32

Driving flange secured to spindle.

TABLE O-6

MINIMUM DIMENSIONS FOR STRAIGHT RELIEVED FLANGES

A[1] Diameter of wheel	B Minimum outside diameter of flanges	C Radial width of bearing surface Minimum	C Radial width of bearing surface Maximum	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of recess
Inches	Inches	Inches	Inches	Inches	Inches
1	3/6	1/16	1/8	1/16	1/16
2	3/4	1/8	3/16	1/8	3/32
3	1	1/8	3/16	3/16	3/32
4	1 3/8	1/8	3/16	3/16	1/8
5	1 3/4	3/16	1/4	1/4	1/8
6	2	1/4	1/2	3/8	3/16
7	2 1/2	1/4	1/2	3/8	3/16
8	3	1/4	1/2	3/8	3/16
10	3 1/2	5/16	5/8	3/8	1/4
12	4	5/16	5/8	1/2	5/16
14	4 1/2	3/8	3/4	1/2	5/16
16	5 1/2	1/2	1	1/2	5/16
18	6	1/2	1	5/8	3/8
20	7	5/8	1 1/4	5/8	3/8
22	7 1/2	5/8	1 1/4	5/8	7/16
24	8	3/4	1 1/4	5/8	7/16
26	8 1/2	3/4	1 1/4	5/8	1/2
28	10	7/8	1 1/2	3/4	1/2
30	10	7/8	1 1/2	3/4	5/8
36	12	1	2	7/8	3/4
42	14	1	2	7/8	3/4
48	16	1 1/4	2	1 1/8	1
60	20	1 1/4	2	1 1/4	1 1/8
72	24	1 1/2	2 1/2	1 3/8	1 1/4

[1]Flanges for wheels under 2 inches diameter may be unrelieved and shall be maintained flat and true.

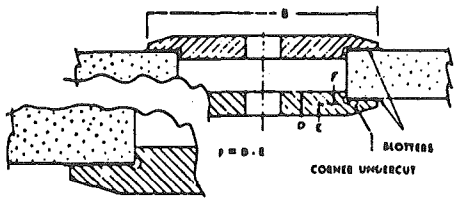


Figure No. O-33

Central Nut Mounting

Driving flange secured to spindle.

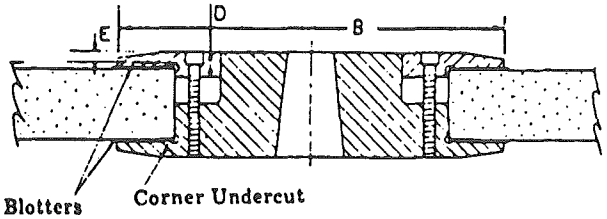


Figure No. O-34

Multiple Screw Mounting

Driving flange secured to spindle.

TABLE O-7

MINIMUM DIMENSIONS FOR STRAIGHT FLANGES FOR MECHANICAL GRINDERS 12,500 S.F.P.M. TO 16,500 S.F.P.M.[1]

Wheel diameter	Wheel hole diameter	B Minimum flange diameter	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of undercut	F[2](D-E) minimum thickness
20	6	8	1	1/2	1/2
20	8	10	1 1/2	3/4	3/4
24	12	15	2	1	1
30	12	15	2	1	1
36	12	15	2	1	1

[1] Flange shall be of steel, quality SAE 1040 or equivalent, annealed plate, heat treated to R_c 25-30.

[2] For wheels under 1 1/4 inch thick F dimension shall not exceed 40 percent of wheel thickness.

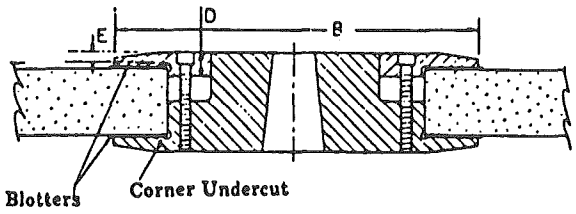


Figure No. O-35

Driving flange secured to spindle.

TABLE O-8

MINIMUM DIMENSIONS FOR STRAIGHT FLANGES USED AS WHEEL SLEEVES FOR PRECISION GRINDING ONLY

Wheel diameter	Wheel hole diameter	B Minimum outside diameter of flange	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of undercut
Inches	Inches	Inches	Inches	Inches
12 to 14	5	7	1/2	7/16
	5	7	5/8	7/16
	6	8	5/8	7/16
Larger than	8	10	5/8	7/16
14 to 20	10	11 1/2	5/8	7/16
	12	13 1/2	5/8	7/16
Larger than	8	10	3/4	1/2
20 to 30	10	11 1/2	3/4	1/2
	12	13 1/2	3/4	1/2
	16	17 1/2	3/4	1/2
Larger than	12	13 1/2	3/4	1/2
30 to 42	16	17 1/2	3/4	1/2
	18	19 1/2	3/4	1/2
	20	21 1/2	3/4	1/2
Larger than	16	20	1	3/4
42 to 60	20	24	1	3/4
	24	29	1 1/8	7/8

Note: These flanges may be clamped together by means of a central nut, or by a series of bolts or some other equivalent means of fastening. For hole sizes smaller than shown in this table, use table 12.

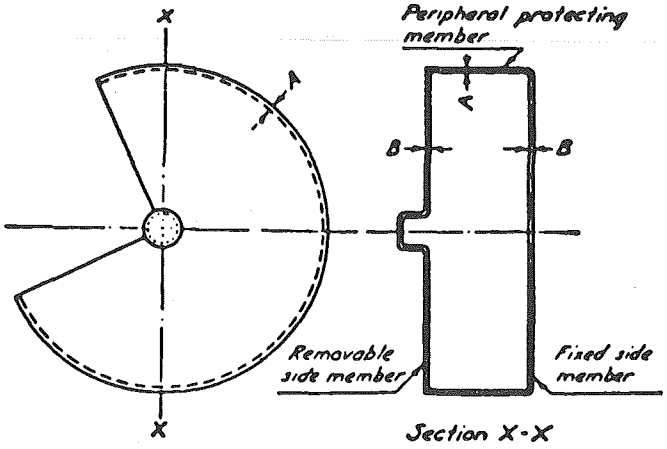


Figure No. O-36

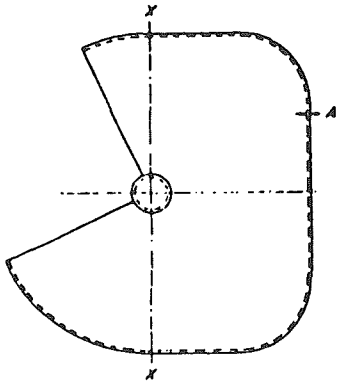


Figure No. O-37

TABLE O-9

MINIMUM BASIC THICKNESSES OF PERIPHERAL AND SIDE MEMBERS FOR SAFETY GUARDS

(TABLE O-9: Part 1—Diameters 3" to 12")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: 3 to 6 inches A	3 to 6 inches B	Over 6 to 12 inches A	Over 6 to 12 inches B
	Inches	Inches		Inches	
Material satisfactory[1] for speeds up to 8,000 SFPM. Cast iron (min. tensile strength 20,000 p.s.i.) Class 20.	2	1/4	1/4	3/8	5/16
	4	5/16	5/16	3/8	5/16
	6	3/8	5/16	1/2	7/16
	8			5/8	9/16
	10			3/4	11/16
	16				
	20				
Material satisfactory[1] for speeds up to 9,000 SFPM. Malleable iron (min. tensile strength 50,000 p.s.i.) Grade 32510.	2	1/4	1/4	3/8	5/16
	4	5/16	5/16	3/8	5/16
	6	3/8	5/16	1/2	7/16
	8			1/2	7/16
	10			1/2	7/16
	16				
	20				
Materials satisfactory[1] for speeds up to 16,000 SFPM. Steel castings (min. tensile strength 60,000 p.s.i.) Grade V60-30.	2	1/4	1/4	5/16	5/16
	4	1/4	1/4	1/2	1/2
	6	3/8	1/4	3/4	5/8
	8			7/8	3/4
	10			1	7/8
	16				
	20				
Structural steel (min. tensile strength 60,000 p.s.i.).	2	1/8	1/16	5/16	1/4
	4	1/8	1/16	3/8	5/16
	6	3/16	1/16	1/2	3/8
	8			1/2	3/8
	10			9/16	7/16
	16				
	20				

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

(TABLE O-9: Part 2—Diameters Over 12" to 20")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 12 to 16 inches A	Over 12 to 16 inches B	Over 16 to 20 inches A	Over 16 to 20 inches B
	Inches	Inches		Inches	
Material satisfactory[1] for speeds up to 8,000 SFPM. Cast iron (min. tensile strength 20,000 p.s.i.) Class 20.	2	1/2	3/8	5/8	1/2
	4	1/2	3/8	3/4	5/8
	6	5/8	1/2	1	5/8
	8	7/8	3/4	1	3/4
	10	7/8	3/4	1	3/4
	16	1-1/8	1	1-1/4	1
	20			1-3/8	1-1/8
Material satisfactory[1] for speeds up to 9,000 SFPM. Malleable iron (min. tensile strength 50,000 p.s.i.) Grade 32510.	2	1/2	3/8	5/8	1/2
	4	1/2	3/8	5/8	1/2
	6	5/8	1/2	3/4	5/8
	8	5/8	1/2	3/4	5/8
	10	5/8	1/2	3/4	5/8
	16	13/16	11/16	13/16	11/16
	20			7/8	3/4
Materials satisfactory[1] for speeds up to 16,000 SFPM. Steel castings (min. tensile strength 60,000 p.s.i.) Grade V60-30.	2	3/8	3/8	1/2	7/16
	4	1/2	1/2	9/16	1/2
	6	3/4	5/8	3/4	5/8
	8	7/8	3/4	7/8	3/4
	10	1	7/8	1	7/8
	16	1-1/4	1-1/8	1-1/4	1-1/8
	20			1-3/8	1-1/4

Structural	2	5/16	1/4	5/16	1/4
steel (min.	4	3/8	5/16	3/8	5/16
tensile	6	7/16	3/8	7/16	3/8
strength	8	9/16	7/16	9/16	7/16
60,000 p.s.i.).	10	5/8	1/2	5/8	1/2
	16	5/8	9/16	3/4	5/8
	20			13/16	11/16

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

(TABLE O-9: Part 3—Diameters Over 20" to 40")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters			
		Over 20 to 24 inches		Over 24 to 40 inches	
		A	B	A	B
	Inches	Inches		Inches	
Material satis-	2	7/8	5/8	1	3/4
factory[1] for	4	1	5/8	1-1/8	3/4
speeds up to	6	1-1/8	3/4	1-1/4	7/8
8,000 SFPM.	8	1-1/8	3/4	1-1/4	7/8
Cast iron	10	1-1/8	3/4	1-1/4	7/8
(min. tensile	16	1-5/16	1	1-7/16	1-1/16
strength	20	1-3/8	1-1/8	1-1/2	1-3/8
20,000 p.s.i.)					
Class 20.					
Material satis-	2	3/4	5/8	7/8	3/4
factory[1] for	4	3/4	5/8	7/8	3/4
speeds up to	6	7/8	5/8	1	3/4
9,000 SFPM.	8	7/8	5/8	1	3/4
Malleable iron	10	7/8	5/8	1	3/4
(min. tensile	16	1	3/4	1-1/8	7/8
strength	20	1	3/4	1-1/8	7/8
50,000 p.s.i.)					
Grade 32510.					
Materials satis-	2	5/8	1/2	3/4	5/8
factory[1] for	4	5/8	1/2	3/4	5/8
speeds up to	6	13/16	11/16	13/16	11/16
16,000 SFPM.	8	7/8	3/4	15/16	13/16
Steel castings	10	1-1/8	15/16	1-1/8	1
(min. tensile	16	1-1/4	1-1/8	1-1/4	1-1/8
strength	20	1-3/8	1-1/4	1-7/16	1-5/16
60,000 p.s.i.)					
Grade V60-30.					
Structural	2	5/16	1/4	3/8	5/16
steel (min.	4	3/8	5/16	3/8	5/16
tensile	6	7/16	3/8	7/16	3/8
strength	8	9/16	7/16	5/8	1/2
60,000 p.s.i.).	10	5/8	1/2	5/8	1/2
	16	3/4	5/8	13/16	11/16
	20	13/16	11/16	7/8	3/4

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

(TABLE O-9: Part 4—Diameters Over 40" to 48")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters	
		Over 40 to 48 inches	
		A	B
	Inches	Inches	
Material satis-	2	1-1/4	1
factory[1] for	4	1-3/8	1
speeds up to	6	1-1/2	1-1/8
8,000 SFPM.	8	1-1/2	1-1/8
Cast iron	10	1-1/2	1-1/8
(min. tensile	16	1-3/4	1-3/8
strength	20	2	1-5/8
20,000 p.s.i.)			
Class 20.			
Material satis-	2	1	7/8
factory[1] for	4	1-1/8	7/8
speeds up to	6	1-1/4	7/8
9,000 SFPM.	8	1-1/4	7/8
Malleable iron	10	1-1/4	7/8
(min. tensile	16	1-3/8	1
strength	20	1-1/2	1-1/8
50,000 p.s.i.)			
Grade 32510.			
Material satis-	2	7/8	3/4
factory[1] for	4	1	3/4
speeds up to	6	1- 1/8	3/4
16,000 SFPM.	8	1- 3/8	1
Steel castings	10	1- 7/16	1- 1/16
(min. tensile	16	1-13/16	1- 7/16
strength	20	2- 1/16	1-11/16
60,000 p.s.i.)			
Grade V60-30.			
Structural	2	1/2	3/8
steel (min.	4	1/2	3/8
tensile	6	3/4	1/2
strength	8	3/4	1/2
60,000 p.s.i.).	10	7/8	5/8
	16	1-1/16	13/16
	20	1-3/16	15/16

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

[Order 73-5, § 296-24-18009, filed 5/9/73 and Order 73-4, § 296-24-18009, filed 5/7/73.]

WAC 296-24-190 Mills and calenders in the rubber and plastics industries.

[Order 73-5, § 296-24-190, filed 5/9/73 and Order 73-4, § 296-24-190, filed 5/7/73.]

WAC 296-24-19001 Definitions. (1) "Bite" means the nip point between any two inrunning rolls.

(2) "Calender" means a machine equipped with two or more metal rolls revolving in opposite directions and used for continuously sheeting or plying up rubber and plastics compounds and for frictioning or coating materials with rubber and plastics compounds.

(3) "Mill" means a machine consisting of two adjacent metal rolls, set horizontally, which revolve in opposite directions (i.e. toward each other as viewed from above) used for the mechanical working of rubber and plastics compounds.

[Order 73-5, § 296-24-19001, filed 5/9/73 and Order 73-4, § 296-24-19001, filed 5/7/73.]

WAC 296-24-19003 General requirements. (1) New installations. All new installations after August 27, 1971, shall be in conformity with WAC 296-24-190 through 296-24-19015.

(2) Existing installations. All existing plant installations or equipment contracted for prior to the effective date of these standards, shall comply with WAC 296-24-190 through 296-24-19015.

(3) Auxiliary equipment. Mechanical and electrical equipment and auxiliaries shall be installed according to with this section and the state of Washington safety standards for installing electric wires and equipment, chapter 296-24 WAC Part L.

(4) Mill roll heights. All new mill installations shall be installed so that the top of the operating rolls is not less than 50 inches above the level on which the operator stands, irrespective of the size of the mill. This distance shall apply to the actual working level, whether it be at the general floor level, in a pit, or on a platform.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-19003, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-19003, filed 4/19/85; Order 76-6, § 296-24-19003, filed 3/1/76; Order 73-5, § 296-24-19003, filed 5/9/73 and Order 73-4, § 296-24-19003, filed 5/7/73.]

WAC 296-24-19005 Mill safety controls. (1) Safety trip control. A safety trip control shall be provided in front and in back of each mill. It shall be accessible and shall operate readily on contact. The safety trip control shall be one of the following types or a combination thereof.

(a) Pressure-sensitive body bars. Installed at front and back of each mill having a 46-inch roll height or over. These bars shall operate readily by pressure of the mill operator's body. Pressure-sensitive body bars should be installed on new equipment.

(b) Safety triprod. Installed in the front and in the back of each mill and located with 2 inches of a vertical plane tangent to the front and rear rolls. The top rods shall be not more than 72 inches above the level on which the operator stands. The triprods shall be accessible and shall operate readily whether the rods are pushed or pulled.

(c) Safety tripwire cable or wire center cord. Installed in the front and in the back of each mill and located within 2 inches of a vertical plane tangent to the front and rear rolls. The cables shall not be more than 72 inches above the level on which the operator stands. The tripwire cable or wire center cord shall operate readily whether cable or cord is pushed or pulled.

(2) Fixed guards. A fixed bar across the front and one across the back of the mill approximately 40 inches vertically above the working level and 20 inches horizontally from the crown face of the roll should be used where they are applicable.

(3) Auxiliary equipment. All auxiliary equipment such as mill divider, support bars, spray pipes, feed conveyors, strip knives, etc., shall be located in such a manner as to avoid interference with access to and operation of safety devices.

[Order 73-5, § 296-24-19005, filed 5/9/73 and Order 73-4, § 296-24-19005, filed 5/7/73.]

WAC 296-24-19007 Calender safety controls. (1) Safety trip, face. A-safety triprod, cable, or wire center cord shall be provided across each pair of in-running rolls extending the length of the face of the rolls. It shall be readily accessible and operate whether pushed or pulled. The safety tripping devices shall be located within reach of the operator and the bite.

(2) Safety trip, side. On both sides of the calender and near each end of the face of the roll, there shall be a cable or wire center cord connected to the safety trip. These lines should be not more than 12 inches from the faces of the respective rolls and not less than 2 inches from the calender frame. They should be anchored to the frame not more than 6 inches from the floor or operator's platform. They shall operate readily when pushed or pulled.

[Order 73-5, § 296-24-19007, filed 5/9/73 and Order 73-4, § 296-24-19007, filed 5/7/73.]

WAC 296-24-19009 Protection by location. (1) Mills. Where a mill is so installed that persons cannot normally reach through, over, under or around to come in contact with the roll bite or be caught between a roll and an adjacent object, then, provided such elements are made a fixed part of a mill, safety control devices listed in WAC 296-24-19005 shall not apply.

(2) Calenders. Where a calender is so installed that persons cannot normally reach through, over, under, or around to come in contact with the roll bite or be caught between a roll and an adjacent object, then, provided such elements are made a fixed part of a calender, safety control devices listed in WAC 296-24-19007 shall not apply.

[Order 73-5, § 296-24-19009, filed 5/9/73 and Order 73-4, § 296-24-19009, filed 5/7/73.]

WAC 296-24-19011 Trip and emergency switches. All trip and emergency switches shall not be of the automatically resetting type, but shall require manual resetting.

[Order 73-5, § 296-24-19011, filed 5/9/73 and Order 73-4, § 296-24-19011, filed 5/7/73.]

WAC 296-24-19013 Stopping limits. (1) Determination of distance of travel. All measurements on mills and calenders shall be taken with the rolls running empty at maximum operating speed. Stopping distances shall be expressed in inches of surface travel of the roll from the instant the emergency stopping device is actuated.

(2) Stopping limits for mills. All mills irrespective of the size of the rolls or their arrangement (individually or group-driven) shall be stopped within a distance, as measured in inches of surface travel, not greater than 1 1/2 percent of the peripheral no-load surface speeds of the respective rolls as determined in feet per minute.

(3) Stopping limits for calenders.

(a) All calenders, irrespective of size of the rolls or their configuration, shall be stopped within a distance, as measured in inches of surface travel, not greater than 1 3/4 percent of the peripheral no-load surface speeds of the respective calender rolls as determined in feet per minute.

(b) Where speeds above 250 feet per minute as measured on the surface of the drive roll are used, stopping distances of more than 1 3/4 percent are permissible. Such stopping distances shall be subject to engineering determination.

[Order 73-5, § 296-24-19013, filed 5/9/73 and Order 73-4, § 296-24-19013, filed 5/7/73.]

WAC 296-24-19015 Alarm. Where an exposure is created by the operation, and the operators are not within sight or hearing of other employees, a suitable alarm device should be provided so that assistance will be available in case of accidents.

[Order 73-5, § 296-24-19015, filed 5/9/73 and Order 73-4, § 296-24-19015, filed 5/7/73.]

WAC 296-24-195 Mechanical power presses. (1) Mechanical powered machines that shear, punch, form, or assemble metal or material by means of tools or dies attached to slides, and are identified by their respective manufacturers as "mechanical power presses" are regulated by sections which include WAC 296-24-195 in the subsection number.

(2) Combination, multipurpose powered machines, commonly referred to as "iron workers," that punch, shear, notch, cope, and form metals or other materials, single-end punches, double-end punches, structured shearing machines, notching machines, coping machines, beam punches, detail punches, and spacing punches, machines similar in construction and function to mechanical power presses, but which are specifically identified by the respective manufacturers as "iron workers," and machines whose distinguishing feature is the multiple work stations at which various operations may be performed singly or simultaneously, including, but not limited to, punching, shearing, notching, coping, and forming shall be regulated by subsections which include WAC 296-24-150 in the subsection number.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-195, filed 5/15/89, effective 6/30/89; Order 76-6, § 296-24-195, filed 3/1/76; Order 73-5, § 296-24-195, filed 5/9/73 and Order 73-4, § 296-24-195, filed 5/7/73.]

WAC 296-24-19501 Definitions. (1) "Antirepeat" means the part of the clutch/brake control system designed to limit the press to a single stroke if the tripping means is held operated. Antirepeat requires release of all tripping mechanisms before another stroke can be initiated. "Antirepeat" is also called single stroke reset or reset circuit.

(2) "Brake" means the mechanism used on a mechanical power press to stop and/or hold the crankshaft, either directly or through a gear train, when the clutch is disengaged.

(3) "Bolster plate" means the plate attached to the top of the bed of the press having drilled holes or T-slots for attaching the lower die or die shoe.

(4) "Clutch" means the coupling mechanism used on a mechanical power press to couple the flywheel to the crankshaft, either directly or through a gear train.

(5) "Full revolution clutch" means a type of clutch that, when tripped, cannot be disengaged until the crankshaft has completed a full revolution and the press slide a full stroke.

(6) "Part revolution clutch" means a type of clutch that can be disengaged at any point before the crankshaft has completed a full revolution and the press slide a full stroke.

(7) "Direct drive" means the type of driving arrangement wherein no clutch is used; coupling and decoupling of the driving torque is accomplished by energization and deenergization of a motor. Even though not employing a clutch, direct drives match the operational characteristics of "part revolution clutches" because the driving power may be disengaged during the stroke of the press.

(8) "Concurrent" means acting in conjunction, and is used to describe a situation wherein two or more controls exist in an operated condition at the same time.

(9) "Continuous" means uninterrupted multiple strokes of the slide without intervening stops (or other clutch control action) at the end of individual strokes.

(10) "Counterbalance" means the mechanism that is used to balance or support the weight of the connecting rods, slide, and slide attachments.

(11) "Device" means a press control or attachment that:

(a) Restrains the operator from inadvertently reaching into the point of operation, or

(b) Prevents normal press operation if the operator's hands are inadvertently within the point of operation, or

(c) Automatically withdraws the operator's hands if the operator's hands are inadvertently within the point of operation as the dies close, or

(d) Prevents the initiation of a stroke, or stops the stroke in progress, when there is an intrusion through the sensing field by any part of the operator's body or by any other object.

(12) "Presence sensing device" means a device designed, constructed and arranged to create a sensing field or area that signals the clutch/brake control to deactivate the clutch and activate the brake of the press when any part of the operator's body or a hand tool is within such field or area.

(13) "Gate or movable barrier device" means a movable barrier arranged to enclose the point of operation before the press stroke can be started.

(14) "Holdout or restraint device" means a mechanism, including attachments for operator's hands, that when anchored and adjusted prevent the operator's hands from entering the point of operation.

(15) "Pull-out device" means a mechanism attached to the operator's hands and connected to the upper die or slide of the press, that is designed, when properly adjusted, to withdraw the operator's hands as the dies close, if the operator's hands are inadvertently within the point of operation.

(16) "Sweep device" means a single or double arm (rod) attached to the upper die or slide of the press and designed to move the operator's hands to a safe position as the dies close, if the operator's hands are inadvertently within the point of operation.

(17) "Two hand control device" means a two hand trip that further requires concurrent pressure from both hands of

the operator during a substantial part of the die-closing portion of the stroke of the press.

(18) "Die" means the tooling used in a press for cutting or forming material. An upper and a lower die make a complete set.

(19) "Die builder" means any person who builds dies for power presses.

(20) "Die set" means a tool holder held in alignment by guide posts and bushings and consisting of a lower shoe, an upper shoe or punch holder, and guide posts and bushings.

(21) "Die setter" means an individual who places or removes dies in or from mechanical power presses, and who, as a part of their duties, makes the necessary adjustments to cause the tooling to function properly and safely.

(22) "Die setting" means the process of placing or removing dies in or from a mechanical power press, and the process of adjusting the dies, other tooling and safeguarding means to cause them to function properly and safely.

(23) "Die shoe" means a plate or block upon which a die holder is mounted. A die shoe functions primarily as a base for the complete die assembly, and, when used, is bolted or clamped to the bolster plate or the face of slide.

(24) "Ejector" means a mechanism for removing work or material from between the dies.

(25) "Face of slide" means the bottom surface of the slide to which the punch or upper die is generally attached.

(26) "Feeding" means the process of placing or removing material within or from the point of operation.

(27) "Automatic feeding" means feeding wherein the material or part being processed is placed within or removed from the point of operation by a method or means not requiring action by an operator on each stroke of the press.

(28) "Semiautomatic feeding" means feeding wherein the material or part being processed is placed within or removed from the point of operation by an auxiliary means controlled by operator on each stroke of the press.

(29) "Manual feeding" means feeding wherein the material or part being processed is handled by the operator on each stroke of the press.

(30) "Foot control" means the foot operated control mechanism designed to be used with a clutch or clutch/brake control system.

(31) "Foot pedal" means the foot operated lever designed to operate the mechanical linkage that trips a full revolution clutch.

(32) "Guard" means a barrier that prevents entry of the operator's hands or fingers into the point of operation.

(33) "Die enclosure guard" means an enclosure attached to the die shoe or stripper, or both, in a fixed position.

(34) "Fixed barrier guard" means a die space barrier attached to the press frame.

(35) "Interlocked press barrier guard" means a barrier attached to the press frame and interlocked so that the press stroke cannot be started normally unless the guard itself, or its hinged or movable sections, enclose the point of operation.

(36) "Adjustable barrier guard" means a barrier requiring adjustment for each job or die setup.

(37) "Guide post" means the pin attached to the upper or lower die shoe, operating within the bushing on the opposing die shoe, to maintain the alignment of the upper and lower dies.

(38) "Hand feeding tool" means any hand held tool designed for placing or removing material or parts to be processed within or from the point of operation.

(39) "Inch" means an intermittent motion imparted to the slide (on machines using part revolution clutches) by momentary operation of the "inch" operating means. Operation of the "inch" operating means engages the driving clutch so that a small portion of one stroke or indefinite stroking can occur, depending upon the length of time the "inch" operating means is held operated. "Inch" is a function used by the die setter for setup of dies and tooling, but is not intended for use during production operations by the operator.

(40) "Jog" means an intermittent motion imparted to the slide by momentary operation of the drive motor, after the clutch is engaged with the flywheel at rest.

(41) "Knockout" means a mechanism for releasing material from either die.

(42) "Liftout" means the mechanism also known as knockout.

(43) "Operator's station" means the complete complement of controls used by or available to an operator on a given operation for stroking the press.

(44) "Pinch point" means any point other than the point of operation at which it is possible for a part of the body to be caught between the moving parts of a press or auxiliary equipment, or between moving and stationary parts of a press or auxiliary equipment or between the material and moving part or parts of the press or auxiliary equipment.

(45) "Point of operation" means the area of the press where material is actually positioned and work is being performed during any process such as shearing, punching, forming, or assembling.

(46) "Press" means a mechanically powered machine that shears, punches, forms or assembles metal or other material by means of cutting, shaping, or combination dies attached to slides. A press consists of a stationary bed or anvil, and a slide (or slides) having a controlled reciprocating motion toward and away from the bed surface, the slide being guided in a definite path by the frame of the press.

(47) "Repeat" means an unintended or unexpected successive stroke of the press resulting from a malfunction.

(48) "Safety block" means a prop that, when inserted between the upper and lower dies or between the bolster plate and the face of the slide, prevents the slide from falling of its own deadweight.

(49) "Single stroke" means one complete stroke of the slide, usually initiated from a full open (or up) position, followed by closing, (or down), and then a return to the full open position.

(50) "Single stroke mechanism" means an arrangement used on a full revolution clutch to limit the travel of the slide to one complete stroke at each engagement of the clutch.

(51) "Slide" means the main reciprocating press member. A slide is also called a ram, plunger, or platen.

(52) "Stop control" means an operator control designed to immediately deactivate the clutch control and activate the brake to stop slide motion.

(53) "Stripper" means a mechanism or die part for removing the parts or material from the punch.

(54) "Stroking selector" means the part of the clutch/brake control that determines the type of stroking when the operating means is actuated. The stroking selector generally includes positions for "off" (clutch control), "inch," "single stroke," and "continuous" (when continuous is furnished).

(55) "Trip or (tripping)" means activation of the clutch to "run" the press.

(56) "Turnover bar" means a bar used in die setting to manually turn the crankshaft of the press.

(57) "Two-hand trip" means a clutch actuating means requiring the concurrent use of both hands of the operator to trip the press.

(58) "Unitized tooling" means a type of die in which the upper and lower members are incorporated into a selfcontained unit so arranged as to hold the die members in alignment.

(59) "Control system" means sensors, manual input and mode selection elements, interlocking and decision-making circuitry, and output elements to the press operating mechanism.

(60) "Brake monitor" means a sensor designed, constructed, and arranged to monitor the effectiveness of the press braking system.

(61) "Presence sensing device initiation" means an operating mode of indirect manual initiation of a single stroke by a presence sensing device when it senses that work motions of the operator, related to feeding and/or removing parts, are completed and all parts of the operator's body or hand tools are safely clear of the point of operation.

(62) "Safety system" means the integrated total system, including the pertinent elements of the press, the controls, the safeguarding and any required supplemental safeguarding, and their interfaces with the operator, and the environment, designed, constructed, and arranged to operate together as a unit, such that a single failure or single operating error will not cause injury to personnel due to point of operation hazards.

(63) "Authorized person" means one to whom the authority and responsibility to perform a specific assignment has been given by the employer.

(64) "Certification" or "certify" means, in the case of design certification/validation, that the manufacturer has reviewed and tested the design and manufacture, and in the case of installation certification/validation and annual recertification/revalidation, that the employer has reviewed and tested the installation, and concludes in both cases that the requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 have been met. The certifications are made to the validation organization.

(65) "Validation" or "validate" means for PSDI safety systems that a WISHA recognized third-party validation organization:

(a) For design certification/validation has reviewed the manufacturer's certification that the PSDI safety system meets the requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 and the underlying tests and analyses performed by the manufacturer, has performed additional tests and analyses which may be required by WAC 296-24-19503 through 296-24-19513 and 296-24-20700, and concludes that the requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 have been met; and

(b) For installation certification/validation and annual recertification/revalidation has reviewed the employer's certification that the PSDI safety system meets the requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 and the underlying tests performed by the employer, has performed additional tests and analyses which may be required by WAC 296-24-19503 through 296-24-19513 and 296-24-20700, and concludes that the requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 have been met.

(66) "Certification/validation" and "certify/validate" means the combined process of certification and validation.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-19501, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-19501, filed 11/14/88; Order 76-6, § 296-24-19501, filed 3/1/76; Order 73-5, § 296-24-19501, filed 5/9/73 and Order 73-4, § 296-24-19501, filed 5/7/73.]

WAC 296-24-19503 General requirements. (1) New installations. The requirements of this section shall apply to all mechanical power presses installed on or after August 31, 1971, except that the requirements of subsections 19505 (13), (14) and 19507(5) of WAC 296-24-195 shall be complied with by November 1, 1975.

(2) Former installations. The requirements of this section shall apply to all mechanical power presses installed prior to August 31, 1971, except that the requirements of section 19505 and 19507 of WAC 296-24-195 shall be complied with by November 1, 1975.

(3) All installations. The requirements of this section pertaining to the care and use of mechanical power presses shall apply to all mechanical power press operations as of February 15, 1972.

(4) Reconstruction and modification. It shall be the responsibility of any person reconstructing, or modifying a mechanical power press to do so in accordance with WAC 296-24-19505.

(5) Excluded machines. Press brakes, hydraulic and pneumatic power presses, bulldozers, hot bending and hot metal presses, forging presses and hammers, riveting machines and similar types of fastener applicators are excluded from the requirements of this section.

[Order 76-6, § 296-24-19503, filed 3/1/76; Order 73-5, § 296-24-19503, filed 5/9/73 and Order 73-4, § 296-24-19503, filed 5/7/73.]

WAC 296-24-19505 Mechanical power press guarding and construction, general. (1) Hazards to personnel associated with broken or falling machine components. Machine components shall be designed, secured, or covered to minimize hazards caused by breakage, or loosening and falling or release of mechanical energy (i.e. broken springs).

(2) Brakes. Friction brakes provided for stopping or holding a slide movement shall be inherently self-engaging by requiring power or force from an external source to cause disengagement; brake capacity shall be sufficient to stop the motion of the slide quickly and capable of holding the slide and its attachments at any point in its travel.

(3) Machines using full revolution positive clutches.

(a) Machines using full revolution clutches shall incorporate a single-stroke mechanism. Single-stroke mechanism will not be required where full revolution-type

presses are used for production-type work, with automatic feeding and injection on a continuous operation and the points of operation are fully enclosed by a fixed barrier guard with no employee exposure.

(b) If the single-stroke mechanism is dependent upon spring action, the spring(s) shall be of the compression type, operating on a rod or guided within a hole or tube, and designed to prevent interleaving of the spring coils in event of breakage.

(c) During diesetting operations, when guards are not applicable and for presses provided with barring holes in the flywheel, the diesetters shall be protected by:

(i) Deenergizing the press and the flywheel at rest; and

(ii) The prime mover power to the press is locked-out; and

(iii) The slide is moved by manually turning the crankshaft with the aid of a turnover bar (a lever) inserted through the barring hole in the flywheel.

Note: Two methods of ensuring removal of the turnover bar from the barring hole, per ANSI B11.1-1971, Section 2.51 are:
1. Use of spring action on the end of the bar, or
2. Use of storage pockets for the bar, incorporating an interlocking switch.

(d) During diesetting operations, when guards are not applicable on presses over 60 tons in size where the slide cannot be moved manually, safeguarding will be provided if the press is equipped with a "jog" mode of operation, and:

(i) The flywheel is brought to rest and the clutch is engaged before the drive motor is jogged; and

(ii) The "jog" control requires two-handed operations; or

(iii) The "jog" control is a single control protected against accidental actuation and so located that the worker cannot reach into the point-of-operation while operating the single control.

(e) Safeguarding of the diesetter, as set forth in subdivisions (c) and (d) of this section, constitutes a "device" as defined in WAC 296-24-19501.

(4) Foot pedals (treadle).

(a) The pedal mechanism shall be protected to prevent unintended operation from falling or moving objects or by accidental stepping onto the pedal.

(b) A pad with a nonslip contact area shall be firmly attached to the pedal.

(c) The pedal return spring(s) shall be of the compression type, operating on a rod or guided within a hole or tube, or designed to prevent interleaving of spring coils in event of breakage.

(d) If pedal counterweights are provided, the path of the travel of the weight shall be enclosed.

(5) Hand operated levers.

(a) Hand-lever-operated power presses shall be equipped with a spring latch on the operating lever to prevent premature or accidental tripping.

(b) The operating levers on hand-tripped presses having more than one operating station shall be interlocked to prevent the tripping of the press except by the "concurrent" use of all levers.

(6) Two-hand trip.

(a) A two-hand trip shall have the individual operator's hand controls protected against unintentional operation and have the individual operator's hand controls arranged by design and construction and/or separation to require the use of both hands to trip the press and use a control arrangement requiring concurrent operation of the individual operator's hand controls.

(b) Two-hand trip systems on full revolution clutch machines shall incorporate an antirepeat feature.

(c) If two-hand trip systems are used on multiple operator presses, each operator shall have a separate set of controls.

(7) Machines using part revolution clutches.

(a) The clutch shall release and the brake shall be applied when the external clutch engaging means is removed, deactivated, or deenergized.

(b) A red color stop control shall be provided with the clutch/brake control system. Momentary operation of the stop control shall immediately deactivate the clutch and apply the brake. The stop control shall override any other control, and reactuation of the clutch shall require use of the operating (tripping) means which has been selected.

(c) A means of selecting off, "inch" single stroke, and "continuous" (when the continuous function is furnished) shall be supplied with the clutch/brake control to select type of operation of the press. Fixing of selection shall be by means capable of supervision by the employer.

(d) Use of the "inch" mode constitutes use of a "device" within the meaning of WAC 296-24-19501. Installed "inch" mode provides point-of-operation safeguarding for diesetters. The "inch" operating means shall be designed to prevent exposure of the workers hands within the point of operation by:

(i) Requiring the concurrent use of both hands to actuate the clutch, or

(ii) Being a single control protected against accidental actuation and so located that the worker cannot reach into the point of operation while operating the single control.

(e) Two-hand controls for single stroke shall conform to the following requirements:

(i) Each hand control shall be protected against unintended operation and arranged by design, construction, and/or separation so that the concurrent use of both hands is required to trip the press.

(ii) The control system shall be designed to permit an adjustment which will require concurrent pressure from both hands during the die closing portion of the stroke.

(iii) The control system shall incorporate an antirepeat feature.

(iv) The control system shall be designed to require release of all operator's hand controls before an interrupted stroke can be resumed. This requirement pertains only to those single stroke two-hand controls manufactured and installed on or after August 31, 1971.

(f) (Reserved.)

(g) Controls for more than one operating station shall be designed to be activated and deactivated in complete sets of two operator's hand controls per operating station by means capable of being supervised by the employer. The clutch/brake control system shall be designed and constructed to prevent actuation of the clutch if all operating stations are bypassed.

(h) Those clutch/brake control systems which contain both single and continuous functions shall be designed so that completion of continuous circuits may be supervised by the employer. The initiation of continuous run shall require

a prior action or decision by the operator in addition to the selection of "continuous" on the stroking selector, before actuation of the operating means will result in continuous stroking.

(i) If foot control is provided, the selection method between hand and foot control shall be separate from the stroking selector and shall be designed so that the selection may be supervised by the employer.

(j) Foot operated tripping controls, if used, shall be protected so as to prevent operation from falling or moving objects, or from unintended operation by accidental stepping onto the foot control.

(k) The control of air-clutch machines shall be designed to prevent a significant increase in the normal stopping time due to failure within the operating valve mechanism, and to inhibit further operation if such failure does occur. These requirements shall apply only to those clutch/brake air-valve controls manufactured and installed on or after August 31, 1971, but shall not apply to machines intended only for continuous automatic feeding applications.

(l) The clutch/brake control shall incorporate an automatic means to prevent initiation or continued activation of the single stroke or continuous functions unless the press drive motor is energized and in the forward direction.

(m) The clutch/brake control shall automatically deactivate in event of failure of the power or pressure supply for the clutch engaging means. Reactivation of clutch shall require restoration of normal supply and the use of the tripping mechanism(s).

(n) The clutch/brake control shall automatically deactivate in event of failure of the counterbalance(s) air supply. Reactivation of the clutch shall require restoration of normal air supply and use of the tripping mechanism(s).

(o) Selection of bar operation shall be by means capable of being supervised by the employer. A separate pushbutton shall be employed to activate the clutch, and the clutch shall be activated only if the driver motor is deenergized.

(8) Electrical.

(a) A main power disconnect switch capable of being locked only in the Off position shall be provided with every power press control system.

(b) The motor start button shall be protected against accidental operation.

(c) All mechanical power press controls shall incorporate a type of drive motor starter that will disconnect the drive motor from the power source in event of control voltage or power source failure, and require operation of the motor start button to restart the motor when voltage conditions are restored to normal.

(d) All a.c. control circuits and solenoid valve coils shall be powered by not more than a nominal 120-volt a.c. supply obtained from a transformer with an isolated secondary. Higher voltages that may be necessary for operation of machine or control mechanisms shall be isolated from any control mechanism handled by the operator, but motor starters with integral start-stop buttons may utilize line voltage cont [control]. All d.c. control circuits shall be powered by not more than nominal 240-volt d.c. supply isolated from any higher voltages.

(e) All clutch/brake control electrical circuits shall be protected against the possibility of an accidental ground in the control circuit causing false operation of the press.

(f) Electrical clutch/brake control circuits shall incorporate features to minimize the possibility of an unintended stroke in event of the failure of a control component to function properly, including relays, limit switches, and static output circuits.

(9) Slide counterbalance systems.

(a) Spring counterbalance systems when used shall incorporate means to retain system parts in event of breakage.

(b) Spring counterbalances when used shall have the capability to hold the slide and its attachments at midstroke, without brake applied.

(c) Air counterbalance cylinders shall incorporate means to retain the piston and rod in case of breakage or loosening.

(d) Air counterbalance cylinders shall have adequate capability to hold the slide and its attachments at any point in stroke, without brake applied.

(e) Air counterbalance cylinders shall incorporate means to prevent failure of capability (sudden loss of pressure) in event of air supply failure.

(10) Air controlling equipment. Air controlling equipment shall be protected against foreign material and water entering the pneumatic system of the press. A means of air lubrication shall be provided when needed.

(11) Hydraulic equipment. The maximum anticipated working pressures in any hydraulic system on a mechanical power press shall not exceed the safe working pressure rating of any component used in that system.

(12) Pressure vessels. All pressure vessels used in conjunction with power presses shall conform to the American Society of Mechanical Engineers Code for Pressure Vessels, 1968 Edition.

(13) Control reliability. When required by subsection 19507(5) of WAC 296-24-195, the control system shall be constructed so that a failure within the system does not prevent the normal stopping action from being applied to the press when required, but does prevent initiation of a successive stroke until the failure is corrected. The failure shall be detectable by a simple test, or indicated by the control system. This requirement does not apply to those elements of the control system which have no effect on the protection against point of operation injuries.

(14) Brake system monitoring. When required by subsection 19507(5) of WAC 296-24-195, the brake monitor shall meet the following requirements:

(a) Be so constructed as to automatically prevent the activation of a successive stroke if the stopping time or braking distance deteriorates to a point where the safety distance being utilized does not meet the requirements set forth in item 19507 (3)(c)(v) or 19507 (3)(g)(iii) of this section. The brake monitor used with the Type B gate or movable barrier device shall be installed in a manner to detect slide top-stop overrun beyond the normal limit reasonably established by the employer.

(b) Be installed on a press such that it indicates when the performance of the braking system has deteriorated to the extent described in subdivision 19505 (14)(a) of this section; and

(c) Be constructed and installed in a manner to monitor brake system performance on each stroke.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-19505, filed 1/10/91, effective 2/12/91; Order 76-6, § 296-24-19505,

filed 3/1/76; Order 74-27, § 296-24-19505, filed 5/7/74; Order 73-5, § 296-24-19505, filed 5/9/73 and Order 73-4, § 296-24-19505, filed 5/7/73.]

WAC 296-24-19507 Safeguarding the point of operation. (1) General requirements.

(a) It shall be the responsibility of the employer to provide and insure the usage of "point of operation guards" or properly applied and adjusted point of operation devices on every operation performed on a mechanical power press. See Table O-10.

(b) The requirement of (a) of this subsection shall not apply when the point of operation opening is one-fourth inch or less. See Table O-10.

TABLE O-10

MAXIMUM OPENINGS UNDER GUARDS

Distance of Opening From Point of Operation Hazard (Inches)	Maximum Openings Under Guard (Inches)
1/2 to 1-1/2	1/4
1-1/2 to 2-1/2	3/8
2-1/2 to 3-1/2	1/2
3-1/2 to 5-1/2	5/8
5-1/2 to 6-1/2	3/4
6-1/2 to 7-1/2	7/8
7-1/2 to 12-1/2	1-1/4
12-1/2 to 15-1/2	1-1/2
15-1/2 to 17-1/2	1-7/8
17-1/2 to 31-1/2	2-1/8

MAXIMUM OPENINGS THROUGH GUARDS

Material	Guard Clearance From Hazard Point	Largest Mesh or Opening (Inches)
Woven Wire, Expanded Metal or Perforated Metal	From 2 to 4	1/2
	4 to 15	2
Wood or Metal Strips (Crossed)	From 2 to 4	3/8
	4 to 15	2
Wood or Metal Strips (Not Crossed)	From 2 to 4	1/2 width of strip
	4 to 15	1 width of strip

Note: The specifications for the materials used for filling barrier, point of operation guards is contained in Table O-12, WAC 296-24-20531. When plastic is used as filling, it shall be 1/4 inch thick (minimum).

(2) Point of operation guards.

(a) Every point of operation guard shall meet the following design, construction, application and adjustment requirements:

(i) It shall prevent entry of hands or fingers into the point of operation by reaching through, over, under or around the guard;

(ii) It shall conform to the maximum permissible openings of Table O-10;

(iii) It shall, in itself, create no pinch point between the guard and moving machine parts;

(iv) It shall utilize fasteners not readily removable by operator, so as to minimize the possibility of misuse or removal of essential parts;

(v) It shall facilitate its inspection, and

(vi) It shall offer maximum visibility of the point of operation consistent with other requirements.

(b) A die enclosure guard shall be attached to the die shoe or stripper in a fixed position.

(c) A fixed barrier guard shall be attached securely to the frame of the pressor to the bolster plate.

(d) An interlocked press barrier guard shall be attached to the press frame or bolster and shall be interlocked with the press clutch control so that the clutch cannot be activated unless the guard itself, or the hinged or movable sections of the guard are in position to conform to the requirements of Table O-10.

(e) The hinged or movable sections of an interlocked press barrier guard shall not be used for manual feeding. The guard shall prevent opening of the interlocked section and reaching into the point of operation prior to die closure or prior to the cessation of slide motion. See subsection (3)(b) of this section regarding manual feeding through interlocked press barrier devices.

(f) The adjustable barrier guard shall be securely attached to the press bed, bolster plate, or die shoe, and shall be adjusted and operated in conformity with Table O-10 and the requirements of this subsection. Adjustments shall be made only by authorized personnel whose qualifications include a knowledge of the provisions of Table O-10 and this subsection.

(g) A point of operation enclosure which does not meet the requirements of this subsection and Table O-10 shall be used only in conjunction with point of operation devices.

(3) Point of operation devices.

(a) Point of operation devices shall protect the operator by:

(i) Preventing and/or stopping normal stroking of the press if the operator's hands are inadvertently placed in the point of operation; or

(ii) Preventing the operator from inadvertently reaching into the point of operation or withdrawing his/her hands if they are inadvertently located in the point of operation, as the dies close; or

(iii) Preventing the operator from inadvertently reaching into the point of operation at all times; or

(iv) (Reserved.)

(v) Requiring application of both of the operator's hands to machine operating controls and locating such controls at such a safety distance from the point of operation that the slide completes the downward travel or stops before the operator can reach into the point of operation with his/her hands; or

(vi) Enclosing the point of operation before a press stroke can be initiated and maintaining this closed condition until the motion of the slide had ceased; or

(vii) Enclosing the point of operation before a press stroke can be initiated, so as to prevent an operator from reaching into the point of operation prior to die closure or

prior to cessation of slide motion during the downward stroke.

(b) The gate or movable barrier device shall protect the operator as follows:

(i) A Type A gate or movable barrier device shall protect the operator in the manner specified in (a)(vi) of this subsection.

(ii) A Type B gate or movable barrier device shall protect the operator in the manner specified in (a)(vii) of this subsection.

(c) A presence sensing point of operation device shall protect the operator as provided in (a)(i) of this subsection, and shall be interlocked into the control circuit to prevent or stop slide motion if the operator's hand or other part of his/her body is within the sensing field of the device during the downstroke of the press slide.

(i) The device may not be used on machines using full revolution clutches.

(ii) The device may not be used as a tripping means to initiate slide motion, except when used in total conformance with WAC 296-24-19517.

(iii) The device shall be constructed so that a failure within the system does not prevent the normal stopping action from being applied to the press when required, but does prevent the initiation of a successive stroke until the failure is corrected. The failure shall be indicated by the system.

(iv) Muting (bypassing of the protective function) of such device, during the upstroke of the press slide, is permitted for the purpose of parts ejection, circuit checking, and feeding.

(v) The safety distance (Ds) from the sensing field to the point of operation shall be greater than the distance determined by the following formula:

Ds = 63 inches/second x Ts where:
Ds = minimum safety distance (inches);
63 inches/second = hand speed constant; and
Ts = stopping time of the press measured at approximately 90° position of crankshaft rotation (seconds).

(vi) Guards shall be used to protect all areas of entry to the point of operation not protected by the presence sensing device.

(d) The pull-out device shall protect the operator as specified in (a)(ii) of this subsection and shall include attachments for each of the operator's hands.

(i) Attachments shall be connected to and operated only by the press slide or upper die.

(ii) Attachment shall be adjusted to prevent the operator from reaching into the point of operation or to withdraw the operator's hands from the point of operation before the dies close.

(iii) A separate pull-out device shall be provided for each operator if more than one operator is used on a press.

(iv) Each pull-out device in use shall be visually inspected and checked for proper adjustment at the start of each operator shift, following a new die set-up, and when operators are changed. Necessary maintenance or repair or both shall be performed and completed before the press is operated. Records of inspections and maintenance shall be kept in accordance with WAC 296-24-19511.

(e) The sweep device, shall protect the operator as specified in (a)(ii) of this subsection, by removing his/her hands safely to a safe position if they are inadvertently located in the point of operation, as the dies close or prior to tripping the clutch. Devices operating in this manner shall have a barrier, attached to the sweep arm in such a manner as to prevent the operator from reaching into the point of operation, past the trailing edge of the sweep arm on the downward stroke of the press. This device may not be used for point of operation safeguarding after December 31, 1976.

(i) The sweep device must be activated by the slide or by motion of a foot pedal triprod.

(ii) The sweep device must be designed, installed and operated so as to prevent the operator from reaching into the point of operation before the dies close.

(iii) The sweep device must be installed so that it will not itself create an impact or shear hazard between the sweep arm and the press tie rods, dies, or any other part of the press or barrier.

(iv) Partial enclosure conforming with (e) of this subsection, as to the area of entry which they protect, must be provided on both sides of the point of operation to prevent the operator from reaching around or behind the sweep device and into the point of operation after the dies start to close. Partial enclosures shall not themselves create a pinch point or shear hazard.

(f) A holdout or a restraint device shall protect the operator as specified in (a)(iii) of this subsection and shall include attachments for each of the operator's hands. Such attachments shall be securely anchored and adjusted in such a way that the operator is restrained from reaching into the point of operation. A separate set of restraints shall be provided for each operator if more than one operator is required on a press.

(g) The two hand control device shall protect the operator as specified in (a)(v) of this subsection.

(i) When used in press operations requiring more than one operator, separate two hand controls shall be provided for each operator, and shall be designed to require concurrent application of all operators' controls to activate the slide. The removal of a hand from any control button shall cause the slide to stop.

(ii) Each two hand control shall meet the construction requirements of WAC 296-24-19505 (7)(e).

(iii) The safety distance (Ds) between each two hand control device and the point of operation shall be greater than the distance determined by the following formula:

Ds = 63 inches/second x Ts, where:
Ds = minimum safety distance (inches);
63 inches/second = hand speed constant; and
Ts = stopping time of the press measured at approximately 90° position of crankshaft rotation (seconds).

(iv) Two hand control shall be fixed in position so that only a supervisor or safety engineer is capable of relocating the controls.

(h) The two hand trip device shall protect the operator as specified in (a)(v) of this subsection.

(i) When used in press operations requiring more than one operator, separate two hand trips shall be provided for each operator, and shall be designed to require concurrent application of all operators' controls to activate the slide.

(ii) Each two hand trip shall meet the construction requirements of WAC 296-24-19505(6).

(iii) The safety distance (Dm) between the two hand trip and the point of operation shall be greater than the distance determined by the following formula:

Dm = 63 inches/second x Tm; where:
Dm = minimum safety distance (inches);
63 inches/second = hand speed constant; and
Tm = the maximum time the press takes for the die closure after it has been tripped (seconds). For full revolution clutch presses with only one engaging point Tm is equal to the time necessary for one and one-half revolutions of the crankshaft. For full revolution clutch presses with more than one engaging point, Tm shall be calculated as follows:

$$Tm = \left\{ \frac{1}{2} + \frac{1}{\text{Number of engaging points per revolution}} \right\} \times \text{time necessary to complete one revolution of the crankshaft (seconds)}$$

(iv) Two hand trips shall be fixed in position so that only a supervisor or safety engineer is capable of relocating the controls.

(i) (Reserved.)

(4) Hand feeding tools. Hand feeding tools are intended for placing and removing materials in and from the press. Hand feeding tools are not a point of operation guard or protection device and shall not be used in lieu of the "guards" or devices required in this section.

(5) Additional requirements for safeguarding. Where the operator feeds or removes parts by placing one or both hands in the point of operation, and a two hand control, presence sensing device of Type B gate or movable barrier (on a part revolution clutch) is used for safeguarding:

(a) The employer shall use a control system and a brake monitor which comply with WAC 296-24-19505 (13) and (14). This requirement shall be complied with by November 1, 1975;

(b) The exception in WAC 296-24-19505 (7)(e)(iv) for two hand controls manufactured and installed before August 31, 1971, is not applicable under this subsection;

(c) The control of air clutch machines shall be designed to prevent a significant increase in the normal stopping time due to a failure within the operating valve mechanism, and to inhibit further operation if such failure does occur, where a part revolution clutch is employed. The exception in WAC 296-24-19505 (7)(k) for controls manufactured and installed before August 31, 1971, is not applicable under this subsection.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-19507, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-19507, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-19507, filed 11/13/80; Order 76-6, § 296-24-19507, filed 3/1/76; Order 73-5, § 296-24-19507, filed 5/9/73 and Order 73-4, § 296-24-19507, filed 5/7/73.]

WAC 296-24-19509 Design, construction, setting and feeding of dies. (1) General requirements. Effective February 1, 1975, the employer shall:

(a) Use dies and operating methods designed to control or eliminate hazards to operating personnel, and

(b) Furnish and enforce the use of hand tools for freeing and removing stuck work or scrap pieces from the die, so that no employee need reach into the point of operation for such purposes.

(2) (Reserved.)

(3) Scrap handling. The employer shall provide means for handling scrap from roll feed or random length stock operations. Scrap cutters used in conjunction with scrap handling systems shall be safeguarded in accordance with WAC 296-24-19507 and 296-24-205, mechanical power-transmission apparatus.

(4) Guide post hazard. The hazard created by a guide post (when it is located in the immediate vicinity of the operator) when separated from its bushing by more than one-fourth inch shall be considered as a point of operation hazard and be protected in accordance with WAC 296-24-19507.

(5) Unitized tooling. If unitized tooling is used, the opening between the top of the punch holder and the face of the slide, or striking pad, shall be safeguarded in accordance with the requirements of WAC 296-24-19507.

(6) Tonnage, stroke and weight designation. All dies shall be:

(a) Stamped with the tonnage and stroke requirements, or have these characteristics recorded if these records are readily available to the die setter;

(b) Stamped to indicate upper die weight when necessary for air counterbalance pressure adjustment; and

(c) Stamped to indicate complete die weight when handling equipment may become overloaded.

(7) Die fastening. Provision shall be made in both the upper and lower shoes for securely mounting the die to the bolster and slide. Where clamp caps or setscrews are used in conjunction with punch stems, additional means of securing the upper shoe to the slide shall be used.

(8) Die handling. Handling equipment attach points shall be provided on all dies requiring mechanical handling.

(9) Diesetting.

(a) When diesetters are operating a mechanical power press, such as running test and production parts, diesetting or trouble shooting, they shall be protected by point-of-operation guards or devices.

(b) The employer shall establish a diesetting procedure that will insure compliance with WAC 296-24-19507.

(c) The employer shall provide spring loaded turnover bars, for presses designed to accept such turnover bars.

(d) The employer shall provide die stops or other means to prevent losing control of the die while setting or removing dies in presses which are inclined.

(e) The employer shall provide and enforce the use of safety blocks for use whenever dies are being adjusted or repaired in the press.

(f) The employer shall provide brushes, swabs, lubricating rolls and automatic or manual pressure guns so that operators and diesetters shall not be required to reach into the point of operation or other hazard areas to lubricate material, punches or dies.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-19509, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-19509, filed 12/24/81; Order 76-6, § 296-24-19509, filed 3/1/76; Order 73-5, § 296-24-19509, filed 5/9/73 and Order 73-4, § 296-24-19509, filed 5/7/73.]

WAC 296-24-19511 Inspection, maintenance and modification of presses. (1) Inspection and maintenance records.

(a) It shall be the responsibility of the employer to establish and follow a program of periodic and regular inspections of his power presses to insure that all their parts, auxiliary equipment and safeguards are in a safe operating condition and adjustment. The employer shall maintain records of these inspections and the maintenance work performed.

(b) Each press shall be inspected and tested no less than weekly to determine the condition of the clutch/brake mechanism, anti-repeat feature and single stroke mechanism. Necessary maintenance or repair or both shall be performed and completed before the press is operated. The employer shall maintain records of these inspections and the maintenance work performed. These requirements do not apply to those presses which comply with subsections 19505 (13) and (14).

(2) Modification. It shall be the responsibility of any person modifying a power press to furnish instructions with the modification to establish new or changed guidelines for use and care of the power press so modified.

(3) Training of maintenance personnel. It shall be the responsibility of the employer to insure the original and continuing competence of personnel caring for, inspecting and maintaining power presses.

[Order 76-6, § 296-24-19511, filed 3/1/76; Order 73-5, § 296-24-19511, filed 5/9/73 and Order 73-4, § 296-24-19511, filed 5/7/73.]

WAC 296-24-19513 Operation of power presses. (1) Employment of minors. The employer shall permit no one under 18 years of age to operate or assist in the operation of machinery covered in this section, except that this section shall not be deemed to prohibit the employment of persons who are 16 or 17 years of age in an apprenticeship training program which meets the requirements contained in chapter 49.04 RCW, apprenticeship.

(2) Instruction to operators. The employer shall train and instruct the operator in the safe method of work before starting work on any operation covered by this section. The employer shall ensure by adequate supervision that correct operating procedures are being followed.

(3) Work area. The employer shall provide clearance between machines so that movement of one operator will not interfere with the work of another. Ample room for cleaning machines, handling material, work pieces, and scrap shall also be provided. All surrounding floors shall be kept in good condition and free from obstructions, grease, oil and water.

(4) Overloading. The employer shall operate his presses within the tonnage and attachment weight ratings specified by the manufacturer.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-19513, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-19513, filed 3/1/76; Order 73-5, § 296-24-19513, filed 5/9/73 and Order 73-4, § 296-24-19513, filed 5/7/73.]

WAC 296-24-19517 Presence sensing device initiation (PSDI). (1) General.

(a) The requirements of this section shall apply to all part revolution mechanical power presses used in the PSDI mode of operation.

(b) The relevant requirements of WAC 296-24-19503 through 296-24-19513 of this part also shall apply to all presses used in the PSDI mode of operation, whether or not cross referenced in this section. Such cross-referencing of specific requirements from WAC 296-24-19503 through 296-24-19513 of this part is intended only to enhance convenience and understanding in relating to the new provisions to the existing standard, and is not to be construed as limiting the applicability of other provisions in WAC 296-24-19503 through 296-24-19513 of this part.

(c) Full revolution mechanical power presses shall not be used in the PSDI mode of operation.

(d) Mechanical power presses with a configuration which would allow a person to enter, pass through, and become clear of the sensing field into the hazardous portion of the press shall not be used in the PSDI mode of operation.

(e) The PSDI mode of operation shall be used only for normal production operations. Die-setting and maintenance procedures shall comply with WAC 296-24-19503 through 296-24-19513 of this part, and shall not be done in the PSDI mode.

(2) Brake and clutch requirements.

(a) Presses with flexible steel band brakes or with mechanical linkage actuated brakes or clutches shall not be used in the PSDI mode.

(b) Brake systems on presses used in the PSDI mode shall have sufficient torque so that each average value of stopping times (Ts) for stops initiated at approximately forty-five degrees, sixty degrees, and ninety degrees, respectively, of crankshaft angular position, shall not be more than one hundred twenty-five percent of the average value of the stopping time at the top crankshaft position. Compliance with this requirement shall be determined by using the heaviest upper die to be used on the press, and operating at the fastest press speed if there is speed selection.

(c) Where brake engagement and clutch release is effected by spring action, such spring(s) shall operate in compression on a rod or within a hole or tube, and shall be of noninterleaving design.

(3) Pneumatic systems.

(a) Air valve and air pressure supply/control.

(i) The requirements of WAC 296-24-19505 (7)(m) and (n), (10), (12) and WAC 296-24-19507 (5)(c) of this part apply to the pneumatic systems of machines used in the PSDI mode.

(ii) The air supply for pneumatic clutch/brake control valves shall incorporate a filter, an air regulator, and, when necessary for proper operation, a lubricator.

(iii) The air pressure supply for clutch/brake valves on machines used in the PSDI mode shall be regulated to pressures less than or equal to the air pressure used when making the stop time measurements required by subsection (2)(b) of this section.

(b) Air counterbalance systems.

(i) Where presses that have slide counterbalance systems are used in the PSDI mode, the counterbalance system shall also meet the requirements of WAC 296-24-19505(9) of this part.

(ii) Counterbalances shall be adjusted in accordance with the press manufacturer's recommendations to assure correct counterbalancing of the slide attachment (upper die) weight for all operations performed on presses used in the PSDI mode. The adjustments shall be made before performing the stopping time measurements required by subsections (2)(b), (5)(c), and (9)(f) of this section.

(4) Flywheels and bearings. Presses whose designs incorporate flywheels running on journals on the crankshaft or back shaft, or bull gears running on journals mounted on the crankshaft, shall be inspected, lubricated, and maintained as provided in subsection (10) of this section to reduce the possibility of unintended and uncontrolled press strokes caused by bearing seizure.

(5) Brake monitoring.

(a) Presses operated in the PSDI mode shall be equipped with a brake monitor that meets the requirements of subsections (13) and (14) of this section. In addition, the brake monitor shall be adjusted during installation certification to prevent successive stroking of the press if increases in stopping time cause an increase in the safety distance above that required by subsection (9)(f) of this section.

(b) Once the PSDI safety system has been certified/validated, adjustment of the brake monitor shall not be done without prior approval of the validation organization for both the brake monitor adjustment and the corresponding adjustment of the safety distance. The validation organization shall in its installation validation, state that in what circumstances, if any, the employer has advance approval for adjustment, when prior oral approval is appropriate and when prior approval must be in writing. The adjustment shall be done under the supervision of an authorized person whose qualifications include knowledge of safety distance requirements and experience with the brake system and its adjustment. When brake wear or other factors extend press stopping time beyond the limit permitted by the brake monitor, adjustment, repair, or maintenance shall be performed on the brake or other press system element that extends the stopping time.

(c) The brake monitor setting shall allow an increase of no more than ten percent of the longest stopping time for the press, or ten milliseconds, whichever is longer, measured at the top of the stroke.

(6) Cycle control and control systems.

(a) The control system on presses used in the PSDI mode shall meet the applicable requirements of WAC 296-24-19503 (7), (8), and (13) and 296-24-19507(5) of this part.

(b) The control system shall incorporate a means of dynamically monitoring for decoupling of the rotary position indicating mechanism drive from the crankshaft. This monitor shall stop slide motion and prevent successive press strokes if decoupling occurs, or if the monitor itself fails.

(c) The mode selection means of WAC 296-24-19503 (7)(c) of this part shall have at least one position for selection of the PSDI mode. Where more than one interruption of the light sensing field is used in the initiation of a stroke, either the mode selection means must have one position for each function, or a separate selection means shall be provided which becomes operable when the PSDI mode is selected. Selection of PSDI mode and the number of interruptions/withdrawals of the light sensing field required to initiate a press cycle shall be by means capable of supervision by the employer.

(d) A PSDI set-up/reset means shall be provided which requires an overt action by the operator, in addition to PSDI mode selection, before operation of the press by means of PSDI can be started.

(e) An indicator visible to the operator and readily seen by the employer shall be provided which shall clearly indicate that the system is set-up for cycling in the PSDI mode.

(f) The control system shall incorporate a timer to deactivate PSDI when the press does not stroke within the period of time set by the timer. The timer shall be manually adjustable, to a maximum time of thirty seconds. For any timer setting greater than fifteen seconds, the adjustment shall be made by the use of a special tool available only to authorized persons. Following a deactivation of PSDI by the timer, the system shall make it necessary to reset the set-up/reset means in order to reactivate the PSDI mode.

(g) Reactivation of PSDI operation following deactivation of the PSDI mode from any other cause, such as activation of the red color stop control required by WAC 296-24-19503 (7)(d) of this part, interruption of the presence sensing field, opening of an interlock, or reselection of the number of sensing field interruptions/withdrawals required to cycle the press, shall require resetting of the set-up/reset means.

(h) The control system shall incorporate an automatic means to prevent initiation or continued operation in the PSDI mode unless the press drive motor is energized in the forward direction of crankshaft rotation.

(i) The control design shall preclude any movement of the slide caused by operation of power on, power off, or selector switches, or from checks for proper operations as required by subdivision (m) of this subsection.

(j) All components and subsystems of the control system shall be designed to operate together to provide total control system compliance with the requirements of this section.

(k) Where there is more than one operator of a press used for PSDI, each operator shall be protected by a separate, independently functioning, presence sensing device. The control system shall require that each sensing field be interrupted the selected number of times prior to initiating a stroke. Further, each operator shall be provided with a set-up/reset means that meets the requirements of this subsection, and which must be actuated to initiate operation of the press in the PSDI mode.

(l) The control system shall incorporate interlocks for supplemental guards, if used, which will prevent stroke initiation or will stop a stroke in progress if any supplemental guard fails or is deactivated.

(m) The control system shall perform checks for proper operation of all cycle control logic element switches and contacts at least once each cycle. Control elements shall be checked for correct status after power "on" and before the initial PSDI stroke.

(n) The control system shall have provisions for an "inch" operating means meeting the requirements of WAC 296-24-19505 (7)(d) of this part. Die-setting shall not be done in the PSDI mode. Production shall not be done in the "inch" mode.

(o) The control system shall permit only a single stroke per initiation command.

(p) Controls with internally stored programs (e.g., mechanical, electro-mechanical, or electronic) shall meet the requirements of WAC 296-24-19505(13) of this part, and shall default to a predetermined safe condition in the event of any single failure within the system. Programmable controllers which meet the requirements for controls with internally stored programs stated above shall be permitted only if all logic elements affecting the safety system and point of operation safety are internally stored and protected in such a manner that they cannot be altered or manipulated by the user to an unsafe condition.

(7) Environmental requirements. Control components shall be selected, constructed, and connected together in such a way as to withstand expected operational and environmental stresses, at least including those outlined in WAC 296-24-20700. Such stresses shall not so affect the control system as to cause unsafe operation.

(8) Safety system.

(a) Mechanical power presses used in the PSDI mode shall be operated under the control of a safety system which, in addition to meeting the applicable requirements of WAC 296-24-19505(13) and 296-24-19507(5) and other applicable provisions of this part, shall function such that a single failure or single operating error shall not cause injury to personnel from point of operation hazards.

(b) The safety system shall be designed, constructed, and arranged as an integral total system, including all elements of the press, the controls, the safeguarding and any required supplemental safeguarding, and their interfaces with the operator and that part of the environment which has effect on the protection against point of operation hazards.

(9) Safeguarding the point of operation.

(a) The point of operation of presses operated in the PSDI mode shall be safeguarded in accordance with the requirements of WAC 296-24-19507 of this part, except that the safety distance requirements of (f) of this subsection shall be used for PSDI operation.

(b) PSDI shall be implemented only by use of light curtain (photo-electric) presence sensing devices which meet the requirements of WAC 296-24-19507 (3)(c)(iii) of this part unless the requirements of (c) of this subsection have been met.

(c) Alternatives to photo-electric light curtains may be used for PSDI when the employer can demonstrate, through tests and analysis by the employer or the manufacturer, that the alternative is as safe as the photo-electric light curtain, that the alternative meets the conditions of this section, has the same long-term reliability as light curtains and can be integrated into the entire safety system as provided for in this section. Prior to use, both the employer and manufacturer must certify that these requirements and all the other applicable requirements of this section are met and these certifications must be validated by an OSHA-recognized third-party validation organization to meet these additional requirements and all the other applicable requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 of this part. Three months prior to the operation of any alternative system, the employer must notify the OSHA Directorate of Safety Standards Programs of the name of the system to be installed, the manufacturer and the OSHA-recognized third-party validation organization immediately. Upon request, the employer must make available to that office all tests and analyses for OSHA review.

(d) Individual sensing fields of presence sensing devices used to initiate strokes in the PSDI mode shall cover only one side of the press.

(e) Light curtains used for PSDI operation shall have minimum object sensitivity not to exceed one and one-fourth inches (31.75 mm). Where light curtain object sensitivity is user-adjustable, either discretely or continuously, design features shall limit the minimum object sensitivity adjustment not to exceed one and one-fourth inches (31.75 mm). Blanking of the sensing field is not permitted.

(f) The safety distance (Ds) from the sensing field of the presence sensing device to the point of operation shall be greater than or equal to the distance determined by the formula:

Ds=Hs(Ts+Tp+Tr+2Tm)+Dp

Where:

Ds=Minimum safety distance.

Hs=Hand speed constant of sixty-three inches per second (1.6 m/s).

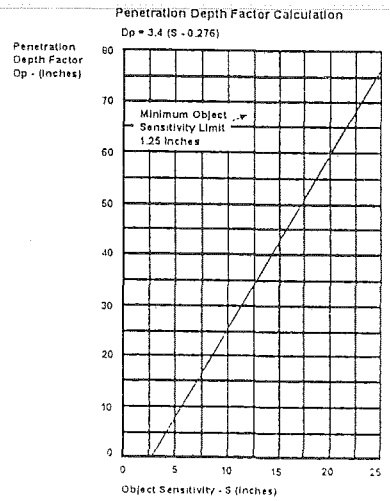
Ts=Longest press stopping time, in seconds, computed by taking averages of multiple measurements at each of three positions (forty-five degrees, sixty degrees, and ninety degrees) of crankshaft angular position; the longest of the three averages is the stopping time to use. (Ts is defined as the sum of the kinetic energy dissipation time plus the pneumatic/magnetic/hydraulic reaction time of the clutch/brake operating mechanism(s).)

Tp=Longest presence sensing device response time, in seconds.

Tr=Longest response time, in seconds, of all interposing control elements between the presence sensing device and the clutch/brake operating mechanism(s).

Tm=Increase in the press stopping time at the top of the stroke, in seconds, allowed by the brake monitor for brake wear. The time increase allowed shall be limited to no more than ten percent of the longest press stopping time measured at the top of the stroke, or ten milliseconds, whichever is longer.

Dp=Penetration depth factor, required to provide for possible penetration through the presence sensing field by fingers or hand before detection occurs. The penetration depth factor shall be determined from Graph A-1 using the minimum object sensitivity size.



(g) The presence sensing device location shall either be set at each tool change and set-up to provide at least the minimum safety distance, or fixed in location to provide a safety distance greater than or equal to the minimum safety distance for all tooling set-ups which are to be used on that press.

(h) Where presence sensing device location is adjustable, adjustment shall require the use of a special tool available only to authorized persons.

(i) Supplemental safeguarding shall be used to protect all areas of access to the point of operation which are unprotected by the PSDI presence sensing device. Such supplemental safeguarding shall consist of either additional light curtain (photo-electric) presence sensing devices or other types of guards which meet the requirements of WAC 296-24-19507 and 296-24-19513 of this part.

(i) Presence sensing devices used as supplemental safeguarding shall not initiate a press stroke, and shall conform to the requirements of WAC 296-24-19507 (3)(c) and other applicable provisions of this part, except that the safety distance shall comply with (f) of this subsection.

(ii) Guards used as supplemental safeguarding shall conform to the design, construction and application requirements of WAC 296-24-19507(2) of this part, and shall be interlocked with the press control to prevent press PSDI operation if the guard fails, is removed, or is out of position.

(j) Barriers shall be fixed to the press frame or bolster to prevent personnel from passing completely through the sensing field, where safety distance or press configuration is such that personnel could pass through the PSDI presence sensing field and assume a position where the point of operation could be accessed without detection by the PSDI presence sensing device. As an alternative, supplemental presence sensing devices used only in the safeguard mode may be provided. If used, these devices shall be located so as to detect all operator locations and positions not detected by the PSDI sensing field, and shall prevent stroking or stop a stroke in process when any supplemental sensing field(s) are interrupted.

(k) Hand tools. Where tools are used for feeding, removal of scrap, lubrication of parts, or removal of parts that stick on the die in PSDI operations:

(i) The minimum diameter of the tool handle extension shall be greater than the minimum object sensitivity of the presence sensing device(s) used to initiate press strokes; or

(ii) The length of the hand tool shall be such as to ensure that the operator's hand will be detected for any safety distance required by the press set-ups.

(10) Inspection and maintenance.

(a) Any press equipped with presence sensing devices for use in PSDI, or for supplemental safeguarding on presses used in the PSDI mode, shall be equipped with a test rod of diameter specified by the presence sensing device manufacturer to represent the minimum object sensitivity of the sensing field. Instructions for use of the test rod shall be noted on a label affixed to the presence sensing device.

(b) The following checks shall be made at the beginning of each shift and whenever a die change is made.

(i) A check shall be performed using the test rod according to the presence sensing device manufacturer's instructions to determine that the presence sensing device used for PSDI is operational.

(ii) The safety distance shall be checked for compliance with subsection (9)(f) of this section.

(iii) A check shall be made to determine that all supplemental safeguarding is in place. Where presence sensing devices are used for supplemental safeguarding, a check for proper operation shall be performed using a test rod according to the presence sensing device manufacturer's instructions.

(iv) A check shall be made to assure that the barriers and/or supplemental presence sensing devices required by subsection (9)(j) of this section are operating properly.

(v) A system or visual check shall be made to verify correct counterbalance adjustment for die weight according to the press manufacturer's instructions, when a press is equipped with a slide counterbalance system.

(c) When presses used in the PSDI mode have flywheel or bullgear running on crankshaft mounted journals and bearings, or a flywheel mounted on back shaft journals and bearings, periodic inspections following the press manufacturer's recommendations shall be made to ascertain that bearings are in good working order, and that automatic lubrication systems for these bearings (if automatic lubrication is provided) are supplying proper lubrication. On presses with provision for manual lubrication of flywheel or bullgear bearings, lubrication shall be provided according to the press manufacturer's recommendations.

(d) Periodic inspections of clutch and brake mechanisms shall be performed to assure they are in proper operating condition. The press manufacturer's recommendations shall be followed.

(e) When any check of the press, including those performed in accordance with the requirements of (b), (c), or (d) of this subsection, reveals a condition of noncompliance, improper adjustment, or failure, the press shall not be operated until the condition has been corrected by adjustment, replacement, or repair.

(f) It shall be the responsibility of the employer to ensure the competence of personnel caring for, inspecting, and maintaining power presses equipped for PSDI operation, through initial and periodic training.

(11) Safety system certification/validation.

(a) Prior to the initial use of any mechanical press in the PSDI mode, two sets of certification and validation are required:

(i) The design of the safety system required for the use of a press in the PSDI mode shall be certified and validated prior to installation. The manufacturer's certification shall be validated by an OSHA-recognized third-party validation organization to meet all applicable requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 of this part.

(ii) After a press has been equipped with a safety system whose design has been certified and validated in accordance with (a) of this subsection, the safety system installation shall be certified by the employer, and then shall be validated by an OSHA-recognized third-party validation organization to meet all applicable requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 of this part.

(b) At least annually thereafter, the safety system on a mechanical power press used in the PSDI mode shall be recertified by the employer and revalidated by an OSHA-recognized third-party validation organization to meet all applicable requirements of WAC 296-24-19503 through 296-24-19513 and 296-24-20700 of this part. Any press whose safety system has not been recertified and revalidated within the preceding twelve months shall be removed from service in the PSDI mode until the safety system is recertified and revalidated.

(c) A label shall be affixed to the press as part of each installation certification/validation and the most recent recertification/revalidation. The label shall indicate the press serial number, the minimum safety distance (Ds) required by subsection (9)(f) of this section, the fulfillment of design certification/validation, the employer's signed certification, the identification of the OSHA-recognized third-party validation organization, its signed validation, and the date the certification/validation and recertification/revalidation are issued.

(d) Records of the installation certification and validation and the most recent recertification and revalidation shall be maintained for each safety system equipped press by the employer as long as the press is in use. The records shall include the manufacture and model number of each component and subsystem, the calculations of the safety distance as required by subsection (9)(f) of this section, and the stopping time measurements required by subsection (2)(b) of this section. The most recent records shall be made available to OSHA/WISHA upon request.

(e) The employer shall notify the OSHA-recognized third-party validation organization within five days whenever a component or a subsystem of the safety system fails or modifications are made which may affect the safety of the system. The failure of a critical component shall necessitate the removal of the safety system from service until it is recertified and revalidated, except recertification by the employer without revalidation is permitted when a noncritical component or subsystem is replaced by one of the same manufacture and design as the original, or determined by the third-party validation organization to be equivalent by similarity analysis, as set forth in WAC 296-24-20700.

(f) The employer shall notify the OSHA-recognized third-party validation organization within five days of the occurrence of any point of operation injury while a press is used in the PSDI mode. This is in addition to the report of injury required by chapter 296-27 WAC; however, a copy of that report may be used for this purpose.

(12) Die setting and work set-up.

(a) Die setting on presses used in the PSDI mode shall be performed in accordance with WAC 296-24-19509.

(b) The PSDI mode shall not be used for die setting or set-up. An alternative manual cycle initiation and control means shall be supplied for use in die setting which meets the requirements of WAC 296-24-19505(7).

(c) Following a die change, the safety distance, the proper application of supplemental safeguarding, and the slide counterbalance adjustment (if the press is equipped with a counterbalance) shall be checked and maintained by authorized persons whose qualifications include knowledge of the safety distance, supplemental safeguarding requirements, and the manufacturer's specifications for counterbalance adjustment. Adjustment of the location of the PSDI presence sensing device shall require use of a special tool available only to the authorized persons.

(13) Operator training.

(a) The operator training required by WAC 296-24-19513(2) shall be provided to the employee before the employee initially operates the press and as needed to maintain competence, but not less than annually thereafter. It shall include instruction relative to the following items for presses used in the PSDI mode.

(i) The manufacturer's recommended test procedures for checking operation of the presence sensing device. This shall include the use of the test rod required by subsection (10)(a) of this section.

(ii) The safety distance required.

(iii) The operation, function, and performance of the PSDI mode.

(iv) The requirements for handtools that may be used in the PSDI mode.

(v) The severe consequences that can result if the operator attempts to circumvent or by-pass any of the safeguard or operating functions of the PSDI system.

(b) The employer shall certify that employees have been trained by preparing a certification record which includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date the training was completed. The certification record shall be prepared at the completion of training and shall be maintained on file for the duration of the employee's employment. The certification record shall be made available upon request to the Assistant Secretary for Occupational Safety and Health or the designated representative of the director.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-19517, filed 7/20/94, effective 9/20/94; 92-17-022 (Order 92-06), § 296-24-19517, filed 8/10/92, effective 9/10/92; 88-23-054 (Order 88-25), § 296-24-19517, filed 11/14/88.]

WAC 296-24-197 Compactors. General requirements. An antirepeat device shall be installed on compactors which will prohibit the compacting of material while the gate or door is raised or open. When adjustments or clearing of jams are necessary, means shall be provided for locking out the control energy.

[Order 74-27, § 296-24-197, filed 5/7/74.]

WAC 296-24-200 Forging machines. Machines used in the forming of hot metal including hot trimming presses, forging hammers, hot forging presses, upsetters, hot bending and hot metal presses among other forging machines are regulated by sections which include WAC 296-24-200 in the subsection number.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-200, filed 1/10/91, effective 2/12/91; Order 73-5, § 296-24-200, filed 5/9/73 and Order 73-4, § 296-24-200, filed 5/7/73.]

WAC 296-24-20001 Definitions. (1) "Forging" means the product of work on metal formed to a desired shape by impact or pressure in hammers, forging machines (upsetters), presses, rolls, and related forming equipment. Forging hammers, counterblow equipment and high-energy-rate forging machines impart impact to the workpiece, while most other types of forging equipment impart squeeze pressure in shaping the stock. Some metals can be forged at room temperature, but the majority of metals are made more plastic for forging by heating.

(2) "Open framehammers (or blacksmith hammers)" mean hammers used primarily for the shaping of forgings by means of impact with flat dies. Open frame hammers generally are so constructed that the anvil assembly is separate from the operating mechanism and machine supports; it rests on its own independent foundation. Certain exceptions are forging hammers made with frame mounted on the anvil, e.g., the smaller, single-frame hammers are usually made with the anvil and frame in one piece.

(3) "Steam hammers" mean a type of drop hammer where the ram is raised for each stroke by a double-action steam cylinder and the energy delivered to the workpiece is supplied by the velocity and weight of the ram and attached upper die driven downward by steam pressure. Energy delivered during each stroke may be varied.

(4) "Gravity hammers" mean a class of forging hammer wherein energy for forging is obtained by the mass and velocity of a freely falling ram and the attached upper die. Examples: Board hammers and air-lift hammers.

(5) "Forging presses" mean a class of forging equipment wherein the shaping of metal between dies is performed by mechanical or hydraulic pressure, and usually is accomplished with a single workstroke of the press for each die station.

(6) "Trimming presses" mean a class of auxiliary forging equipment which removes flash or excess metal from a forging. This trimming operation can also be done cold, as can coining, a product sizing operation.

(7) "High-energy-rate forging machines" mean a class of forging equipment wherein high ram velocities resulting from the sudden release of a compressed gas against a free piston impart impact to the workpiece.

(8) "Forging rolls" mean a class of auxiliary forging equipment wherein stock is shaped between power driven rolls bearing contoured dies. Usually used for preforming, roll forging is often employed to reduce thickness and increase length of stock.

(9) "Ring rolls" mean a class for forging equipment used for shaping weldless rings from pierced discs or thick-walled, ring-shaped blanks between rolls which control wall thickness, ring diameter, height and contour.

(10) "Bolt-headers" mean the same as an upsetter or forging machine except that the diameter of stock fed into the machine is much smaller, i.e., commonly three-fourths inch or less.

(11) "Rivet making machines" mean the same as upsetters and bolt-headers when producing rivets with stock diameter of 1-inch or more. Rivet making with less than 1-inch diameter is usually a cold forging operation, and therefore not included in WAC 296-24-200 through 296-24-20021.

(12) "Upsetters (or forging machines, or headers)" means a type of forging equipment, related to the mechanical press, in which the main forming energy is applied horizontally to the workpiece which is gripped and held by prior action of the dies.

[Order 73-5, § 296-24-20001, filed 5/9/73 and Order 73-4, § 296-24-20001, filed 5/7/73.]

WAC 296-24-20003 General requirements. (1) Use of lead. The safety requirements of this section apply to lead casts or other use of lead in the forge shop or die shop.

(a) Thermostatic control of heating elements shall be provided to maintain proper melting temperature and prevent overheating.

(b) Fixed or permanent lead pot installations shall be exhausted.

(c) Portable units shall be used only in areas where good, general room ventilation is provided as specified in the general occupational health standards, chapter 296-62 WAC.

(d) Personal protective equipment (gloves, goggles, aprons, and other items) shall be worn.

(e) A covered container shall be provided to store dross skimmings.

(f) Equipment shall be kept clean, particularly from accumulations of yellow lead oxide.

(2) Inspection and maintenance. It shall be the responsibility of the employer to maintain all forge shop equipment in a condition which will insure continued safe operation. This responsibility includes:

(a) Establishing periodic and regular maintenance safety checks and keeping records of these inspections.

(b) Scheduling and recording inspection of guards and point of operation protection devices at frequent and regular intervals.

(c) Training personnel for the proper inspection and maintenance of forging machinery and equipment.

(d) All overhead parts shall be fastened or protected in such a manner that they will not fly off or fall in event of failure.

(3) Hammers and presses.

(a) All hammers shall be positioned or installed in such a manner that they remain on or are anchored to foundations sufficient to support them.

(b) All presses shall be installed in such a manner that they remain where they are positioned or they are anchored to foundations sufficient to support them.

(c) Means shall be provided for disconnecting the power to the machine and for locking out or rendering cycling controls inoperable.

(d) The ram shall be blocked when dies are being changed or other work is being done on the hammer. Blocks or wedges shall be made of material the strength and construction of which should meet or exceed the specifications and dimensions shown in Table O-11.

(e) Tongs shall be of sufficient length to clear the body of the worker in case of kickback, and shall not have sharp handle ends. The worker should be instructed in the proper body position when using tongs. Tongs should be checked periodically to see that they remain at the proper hardness level for the job. When rings or equivalent devices for locking tongs are used they should be inspected periodically to insure safe condition.

(f) Oil swabs, or scale removers, or other devices to remove scale shall be provided. These devices shall be long enough to enable the employee to reach the full length of the die without placing a hand or arm between the dies.

(g) Material handling equipment shall be of adequate strength, size, and dimension to handle diesetting operations safely.

(h) A scale guard of substantial construction shall be provided at the back of every hammer, so arranged as to stop flying scale.

(i) A scale guard of substantial construction shall be provided at the back of every press, so arranged as to stop flying scale.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-20003, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-20003, filed 3/1/76; Order 73-5, § 296-24-20003, filed 5/9/73 and Order 73-4, § 296-24-20003, filed 5/7/73.]

WAC 296-24-20005 Hammers, general. (1) Keys. Die keys and shims shall be made from a grade of material that will not unduly crack or splinter, and should not project more than 2 inches in front and 4 inches in back of ram or die.

(2) Foot operated devices. All foot operated devices (i.e., treadles, pedals, bars, valves, and switches) shall be substantially and effectively protected from unintended operation.

[Order 73-5, § 296-24-20005, filed 5/9/73 and Order 73-4, § 296-24-20005, filed 5/7/73.]

WAC 296-24-20007 Presses. All manually operated valves and switches shall be clearly identified and readily accessible.

[Order 73-5, § 296-24-20007, filed 5/9/73 and Order 73-4, § 296-24-20007, filed 5/7/73.]

WAC 296-24-20009 Power-driven hammers. (1) Safety cylinder head. Every steam or airhammer shall have a safety cylinder head to act as a cushion if the rod should break or pull out of the ram.

(2) Shutoff valve. Steam hammers shall be provided with a quick closing emergency valve in the admission pipeline at a convenient location. This valve shall be closed and locked in the off position while the hammer is being adjusted, repaired, or serviced, or when the dies are being changed.

(3) Cylinder draining. Steam hammers shall be provided with a means of cylinder draining, such as a self-draining arrangement or a quick-acting drain cock.

(4) Pressure pipes. Steam or air piping shall conform to the specifications of American National Standard ANSI B31.1.0-1967, Power Piping with Addenda, ANSI B31.1.06-1971.

[Order 73-5, § 296-24-20009, filed 5/9/73 and Order 73-4, § 296-24-20009, filed 5/7/73.]

WAC 296-24-20011 Gravity hammers. (1) Air-lift hammers.

(a) Airlift hammers shall have a safety cylinder head as required in WAC 296-24-20009(1).

(b) Air-lift hammers shall have an air shutoff valve as required in WAC 296-24-20009(2) and should be conveniently located and distinctly marked for ease of identification.

(c) Air-lift hammers shall be provided with two drain cocks: one on main head cylinder, and one on clamp cylinder.

(d) Air piping shall conform to the specifications of the ANSI B31.1.0-1967, Power Piping with Addenda, ANSI B.31.1.06-1971.

(2) Board drophammers.

(a) A suitable enclosure shall be provided to prevent damaged or detached boards from falling. The board enclosure shall be securely fastened to the hammer.

(b) All major assemblies and fittings which can loosen and fall shall be properly secured in place.

[Order 73-5, § 296-24-20011, filed 5/9/73 and Order 73-4, § 296-24-20011, filed 5/7/73.]

WAC 296-24-20013 Forging presses. (1) Mechanical forging presses. When dies are being changed or maintenance is being performed on the press, the following shall be accomplished:

(a) The power to the press shall be locked out.

(b) The flywheel shall be at rest.

(c) The ram shall be blocked with a material the strength of which shall meet or exceed the specifications or dimensions shown in Table O-11

(2) Hydraulic forging presses. When dies are being changed or maintenance is being performed on the press, the following shall be accomplished:

(a) The hydraulic pumps and power apparatus shall be locked out.

(b) The ram shall be blocked with a material the strength of which shall meet or exceed the specifications or dimensions shown in Table O-11.

[Order 73-5, § 296-24-20013, filed 5/9/73 and Order 73-4, § 296-24-20013, filed 5/7/73.]

WAC 296-24-20015 Trimming presses. (1) Hot trimming presses. The requirements of WAC 296-24-20013(1) shall also apply to hot trimming presses.

(2) Cold trimming presses. Cold trimming presses shall be safeguarded in accordance with WAC 296-24-195 through 296-24-19507.

[Order 73-5, § 296-24-20015, filed 5/9/73 and Order 73-4, § 296-24-20015, filed 5/7/73.]

WAC 296-24-20017 Upsetters. (1) General requirements. All upsetters shall be installed so that they remain on their supporting foundations.

(2) Lockouts. Upsetters shall be provided with a means for locking out the power at its entry point to the machine and rendering its cycling controls inoperable.

(3) Manually operated controls. All manually operated valves and switches shall be clearly identified and readily accessible.

(4) Tongs. Tongs shall be of sufficient length to clear the body of the worker in case of kickback, and shall not have sharp handle ends. The worker should be instructed in the proper body position when using tongs. Tongs should be checked periodically to see that they remain at the proper hardness level for the job. When rings or equivalent devices for locking tongs are used they should be inspected periodically to assure safe condition.

(5) Changing dies. When dies are being changed, maintenance performed, or any work done on the machine, the power to the upsetter shall be locked out, and the flywheel shall be at rest.

[Order 73-5, § 296-24-20017, filed 5/9/73 and Order 73-4, § 296-24-20017, filed 5/7/73.]

WAC 296-24-20019 Other forging equipment. (1) Boltheading. The provisions of WAC 296-24-20017 shall apply to boltheading.

(2) Rivet making. The provisions of WAC 296-24-20017 shall apply to rivet making.

[Order 73-5, § 296-24-20019, filed 5/9/73 and Order 73-4, § 296-24-20019, filed 5/7/73.]

WAC 296-24-20021 Other forge facility equipment. (1) Billet shears. A positive-type lockout device for disconnecting the power to the shear shall be provided.

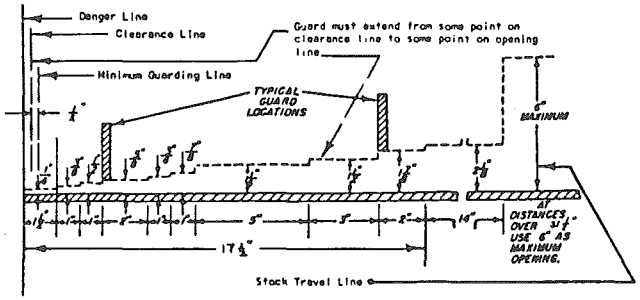
(2) Saws. Every saw shall be provided with a guard of not less than one-eighth inch sheet metal positioned to stop flying sparks. Suitable means should be provided to trap sparks below the saw. A tank of water placed below the saw is also desirable.

(3) Conveyors. Conveyor power transmission equipment shall be guarded in accordance with ANSI B20.1-1957, Safety Code for Conveyors, Cableways, and Related Equipment.

(4) Shot blast. The cleaning chamber shall have doors or guards to protect operators.

(5) Grinding. Personal protective equipment shall be used in grinding operations, and equipment shall be used and maintained in accordance with ANSI B7.1-1970, Safety Code for the Use, Care, and Protection of Abrasive Wheels, and with WAC 296-24-180 through 296-24-18009.

This table shows the distances that guards shall be positioned from the danger line in accordance with the required openings.



Explanation of above diagram:

This diagram shows the accepted safe openings between the bottom edge of a guard and feed table at various distances from the danger line (point of operation).

The "clearance line" marks the distance required to prevent contact between guard and moving parts.

The "minimum guarding line" is the distance between the infeed side of the guard and the danger line which is one-half inch from the danger line.

The various openings are such that for average size hands an operator's fingers won't reach the point of operation.

After installation of point of operation guards and before a job is released for operation a check should be made to verify that the guard will prevent the operator's hands from reaching the point of operation.

TABLE O-11

STRENGTH AND DIMENSIONS FOR WOOD RAM PROPS

Size of timber, inches[1]	Square inches in cross section	Minimum allowable crushing strength parallel to grain, p.s.i.[2]	Maximum static load within short column range[3]	Safety factor	Maximum recommended weight of forging hammer for timber used	Maximum allowable length of timber, inches
4 x 4	16	5,000	80,000	10	8,000	44
6 x 6	36	5,000	180,000	10	18,000	66
8 x 8	64	5,000	320,000	10	32,000	88
10 x 10	100	5,000	500,000	10	50,000	100
12 x 12	144	5,000	720,000	10	72,000	132

[1] Actual dimension.

[2] Adapted from U.S. Department of Agriculture Technical Bulletin 479. Hardwoods recommended are those whose ultimate crushing strengths in compression parallel to grain are 5,000 p.s.i. (pounds per square inch) or greater.

[3] Slenderness ratio formula for short columns is L/d=11, where L=length of timber in inches and d=least dimension in inches; this ratio should not exceed 11.

[Order 73-5, § 296-24-20021, filed 5/9/73 and Order 73-4, § 296-24-20021, filed 5/7/73.]

WAC 296-24-205 Mechanical power-transmission apparatus.

[Order 73-5, § 296-24-205, filed 5/9/73 and Order 73-4, § 296-24-205, filed 5/7/73.]

WAC 296-24-20501 Definitions. (1) "Belts" include all power transmission belts, such as flat belts, round belts, V-belts, etc., unless otherwise specified.

(2) "Belt shifter" means a device for mechanically shifting belts from tight to loose pulleys or vice versa, or for shifting belts on cones of speed pulleys.

(3) "Belt pole" (sometimes called a "belt shipper" or "shipper pole") means a device used in shifting belts on and off fixed pulleys on line or countershaft where there are no loose pulleys.

(4) "Enclosed" for vertical and inclined belts means that only the portion of a belt that is seven feet or less from the floor is required to be enclosed by a guard.

(5) "Exposed to contact" means that the location of an object is such that a person is likely to come into contact with it and be injured.

(6) "Flywheels" include flywheels, balance wheels, and flywheel pulleys mounted and revolving on crankshaft of engine or other shafting.

(7) "Fully enclosed" applies to the sides of a power transmission system not guarded by location as described in WAC 296-24-20511 (1)(a), which includes both runs of a horizontal belt, pulley, and flywheel. Small units with slightly inclined belts are included in this category.

(8) "Maintenance runway" means any permanent runway or platform used for oiling, maintenance, running adjustment, or repair work, but not for passageway.

(9) "Nip-point belt and pulley guard" means a device which encloses the pulley and is provided with rounded or rolled edge slots through which the belt passes.

(10) "Point of operation" means that point at which cutting shaping, or forming is accomplished upon the stock and shall include such other points as may offer a hazard to the operator in inserting or manipulating the stock in the operation of the machine.

(11) "Prime movers" include steam, gas, oil, and air engines, motors, steam and hydraulic turbines, and other equipment used as a source of power.

(12) "Sheaves" mean grooved pulleys and shall be so classified unless used as flywheels.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-20501, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-20501, filed 5/9/73 and Order 73-4, § 296-24-20501, filed 5/7/73.]

WAC 296-24-20503 General requirements. (1) This section covers all types and shapes of power-transmission belts, except the following when operating at two hundred and fifty feet per minute or less:

(a) Flat belts one inch or less in width.

(b) Flat belts two inches or less in width which are free from metal lacings or fasteners.

(c) Round belts one-half inch or less in diameter.

(d) Single strand V-belts, the width of which is thirteen thirty-seconds inch or less.

(2) Vertical and inclined belts (WAC 296-24-20511 (3) and (4)) if not more than two and one-half inches wide and running at a speed of less than one thousand feet per minute, and if free from metal lacings or fastenings may be guarded with a nip-point belt and pulley guard.

(3) For the textile industry, because of the presence of excessive deposits of lint, which constitute a serious fire hazard, the sides and face sections only of nip-point belt and pulley guards are required, provided the guard shall extend at least six inches beyond the rim of the pulley on the in-running and off-running sides of the belt and at least two inches away from the rim and face of the pulley in all other directions.

(4) These standards cover the principal features with which power transmission safeguards shall comply. When there is no possibility of employee contact with power transmission belts during operation, the belts are "guarded by location" and no further guarding is required.

(5) The following criteria will apply when evaluating handwheels, nip points, and belts above the table top on light (domestic) and medium duty sewing machines for compliance. The conditions will apply in general industry and the light apparel manufacturing industries on machines using flat and round belts without metal lacings and fasteners. Machines used to sew materials such as leather, heavy canvas, denim, vinyl, or other types of heavy material are not included.

(a) The operator's hands are not in, near or on the wheel, nip point, or belt area when the machine is operating.

(b) The distance between the area where the operator is holding and feeding material with both hands, and the belt or wheel location, is sufficient to not expose the operator to the hazards.

(c) The table top is of sufficient size or arrangement to not expose any other employee in the work area or passing by the work area to the hazards.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-20503, filed 1/11/90, effective 2/26/90; 89-11-035 (Order 89-03), § 296-24-20503, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-20503, filed 5/9/73 and Order 73-4, § 296-24-20503, filed 5/7/73.]

WAC 296-24-20505 Prime-mover guards. (1) Flywheels. Flywheels located so that any part is seven feet or less above floor or platform shall be guarded in accordance with the requirements of this section:

(a) With an enclosure of sheet, perforated, or expanded metal, or woven wire;

(b) With guard rails placed not less than fifteen inches nor more than twenty inches from rim. When flywheel extends into pit or is within 12 inches of floor, a standard toeboard shall also be provided;

(c) When the upper rim of flywheel protrudes through a working floor, it shall be entirely enclosed or surrounded by a guardrail and toeboard.

(d) For flywheels with smooth rims five feet or less in diameter, where the preceding methods cannot be applied, the following may be used: A disk attached to the flywheel in such manner as to cover the spokes of the wheel on the exposed side and present a smooth surface and edge, at the same time providing means for periodic inspection. An open space, not exceeding four inches in width, may be left between the outside edge of the disk and the rim of the wheel if desired, to facilitate turning the wheel over. Where a disk is used, the keys or other dangerous projections not covered by disk shall be cut off or covered. This subdivision does not apply to flywheels with solid web centers;

(e) Adjustable guard to be used for starting engine or for running adjustment may be provided at the flywheel of gas or oil engines. A slot opening for jack bar will be permitted;

(f) Wherever flywheels are above working areas, guards shall be installed having sufficient strength to hold the

weight of the flywheel in the event of a shaft or wheel mounting failure.

(2) Cranks and connecting rods. Cranks and connecting rods, when exposed to contact shall be guarded in accordance with WAC 296-24-20527 and 296-24-20529, or by a guardrail as described in WAC 296-24-20531(5).

(3) Tail rods or extension piston rods. Tail rods or extension piston rods shall be guarded in accordance with WAC 296-24-20527 and 296-24-20529, or by a guardrail on sides and end, with a clearance of not less than fifteen nor more than twenty inches when rod is fully extended.

(4) Governor balls. Governor balls six feet or less from the floor or other working level, when exposed to contact, shall be provided with an enclosure extending to the top of the governor balls when at their highest position. The material used in the construction of this enclosure shall conform to WAC 296-24-20525 and 296-24-20529.

[Order 73-5, § 296-24-20505, filed 5/9/73 and Order 73-4, § 296-24-20505, filed 5/7/73.]

WAC 296-24-20507 Shafting. (1) Installation.

(a) Each continuous line of shafting shall be secured in position against excessive endwise movement.

(b) Inclines and vertical shafts, particularly inclined idler shafts, shall be securely held in position against endwise thrust.

(2) Guarding horizontal shafting.

(a) All exposed parts of horizontal shafting seven feet or less from floor or working platform excepting runways used exclusively for oiling, or running adjustments, shall be protected by a stationary casing enclosing shafting completely or by a trough enclosing sides and top or sides and bottom of shafting as location requires.

(b) Shafting under bench machines shall be enclosed by a stationary casing, or by a trough at sides and top or sides and bottom, as location requires. The sides of the trough shall come within at least six inches of the under side of table, or if shafting is located near floor within six inches of floor. In every case the sides of trough shall extend at least two inches beyond the shafting or protuberance.

(3) Guarding vertical and inclines shafting. Vertical and inclines shafting seven feet or less from floor or working platform, excepting maintenance runways, shall be enclosed with a stationary casing in accordance with requirements of WAC 296-24-20527 and 296-24-20531.

(4) Projecting shaft ends.

(a) Projecting shaft ends shall present a smooth edge and end and shall not project more than one-half the diameter of the shaft unless guarded by nonrotating caps or safety sleeves.

(b) Unused keyways shall be filled up or covered.

(5) Power-transmission apparatus located in basements. All mechanical power transmission apparatus located in basements, towers, and rooms used exclusively for power transmission equipment shall be guarded in accordance with this section, except that the requirements for safeguarding belts, pulleys, and shafting need not be complied with when the following requirements are met:

(a) The basement, tower, or room occupied by transmission equipment is locked against unauthorized entrance.

(b) The vertical clearance in passageways between the floor and power transmission beams, ceiling, or any other objects, is not less than five feet six inches.

(c) The intensity of illumination conforms to the requirements of ANSI A11.1-1965 (R-1970).

(d) The footing is dry, firm, and level.

(e) The route followed by the oiler is protected in such manner as to prevent accident.

[Order 73-5, § 296-24-20507, filed 5/9/73 and Order 73-4, § 296-24-20507, filed 5/7/73.]

WAC 296-24-20509 Pulleys. (1) Guarding. Pulleys, any parts of which are seven feet or less from the floor or working platform, shall be guarded in accordance with the standards specified in WAC 296-24-20527 and 296-24-20531. Pulleys serving as balance wheels (e.g., punch presses) on which the point of contact between belt and pulley is more than six feet six inches from the floor or platform may be guarded with a disk covering the spokes.

(2) Location of pulleys.

(a) Unless the distance to the nearest fixed pulley, clutch, or hanger exceeds the width of the belt used, a guide shall be provided to prevent the belt from leaving the pulley on the side where insufficient clearance exists.

(b) Where there are overhanging pulleys on line, jack, or countershafts with no bearing between the pulley and the outer end of the shaft, a guide to prevent the belt from running off the pulley should be provided.

(3) Broken pulleys. Pulleys with cracks, or pieces broken out of rims, shall not be used.

(4) Pulley speeds. Pulleys intended to operate at rim speed in excess of manufacturers normal recommendations shall be specially designed and carefully balanced for the speed at which they are to operate.

(5) Compositions and wood pulleys. Composition or laminated wood pulleys shall not be installed where they are subjected to influences detrimental to their structural composition.

[Order 73-5, § 296-24-20509, filed 5/9/73 and Order 73-4, § 296-24-20509, filed 5/7/73.]

WAC 296-24-20511 Belt, rope, and chain drives. (1) Horizontal belts and ropes.

(a) Where both runs of horizontal belts are seven feet or less from the floor level, the guard shall extend to at least fifteen inches above the belt or to a standard height (see Table O-12), except that where both runs of a horizontal belt are 42 inches or less from the floor, the belt shall be fully enclosed in accordance with WAC 296-24-20527 and 296-24-20531.

(b) In powerplants or power development rooms, a guardrail may be used in lieu of the guard required by (1)(a) of this section.

(2) Overhead horizontal belts.

(a) Overhead horizontal belts, with lower parts seven feet or less from the floor or platform, shall be guarded on sides and bottom in accordance with WAC 296-24-20531(3).

(b) Horizontal overhead belts more than seven feet above floor or platform shall be guarded for their entire length under the following conditions:

(i) If located over passageways or work places and traveling 1,800 feet or more per minute.

(ii) If center to center distance between pulleys is ten feet or more.

(iii) If belt is eight inches or more in width.

(c) Where the upper and lower runs of horizontal belts are so located that passage of persons between them would be possible, the passage shall be either:

(i) Completely barred by a guardrail or other barrier in accordance with WAC 296-24-20527 and 296-24-20531; or

(ii) Where passage is regarded as necessary, there shall be a platform over the lower run guarded on either side by a railing completely filled in with wire mesh or other filler, or by a solid barrier. The upper run shall be so guarded as to prevent contact therewith either by the worker or by objects carried by the worker. In powerplants only the lower run of the belt need be guarded.

(d) Overhead chain and link belt drives are governed by the same rules as overhead horizontal belts and shall be guarded in the same manner as belts.

(e) American or continuous system rope drives so located that the condition of the rope (particularly the splice) cannot be constantly and conveniently observed, shall be equipped with a telltale device (preferably electric-bell type) that will give warning when rope begins to fray.

(3) Vertical and inclined belts.

(a) Vertical and inclined belts shall be enclosed by a guard conforming to standards in WAC 296-24-20527 and 296-24-20531.

(b) All guards for inclined belts shall be arranged in such a manner that a minimum clearance of seven feet is maintained between belt and floor at any point outside of guard.

(4) Vertical belts. Vertical belts running over a lower pulley more than seven feet above floor or platform shall be guarded at the bottom in the same manner as horizontal overhead belts, if conditions are as stated in (2)(b)(i) and (iii) of this section.

(5) Cone-pulley belts.

(a) The cone belt and pulley shall be equipped with a belt shifter so constructed as to adequately guard the nip point of the belt and pulley. If the frame of the belt shifter does not adequately guard the nip point of the belt and pulley, the nip point shall be further protected by means of a vertical guard placed in front of the pulley and extending at least to the top of the largest step of the cone.

(b) If the belt is of the endless type or laced with rawhide laces, and a belt shifter is not desired, the belt will be considered guarded if the nip point of the belt and pulley is protected by a nip point guard located in front of the cone extending at least to the top of the largest step of the cone, and formed to show the contour of the cone in order to give the nip point of the belt and pulley the maximum protection.

(c) If the cone is located less than 3 feet from the floor or working platform, the cone pulley and belt shall be guarded to a height of 3 feet regardless of whether the belt is endless or laced with rawhide.

(6) Belt tighteners.

(a) Suspended counterbalanced tighteners and all parts thereof shall be of substantial construction and securely fastened; the bearings shall be securely capped. Means must be provided to prevent tightener from falling, in case the belt breaks.

(b) Where suspended counterweights are used and not guarded by location, they shall be so encased as to prevent accident.

(c) Belt tighteners, used for starting and stopping machinery, other than those which are securely held in "off" or "out of service" position by gravity, shall be provided with means or mechanism that will securely hold the belt tightener away from the belt when the machine or part thereof driven by the belt is not in use. Such means or mechanism shall be automatic in its action in gripping, latching or otherwise fastening itself to and holding the belt tightener in "off" or "out of service" position until manually released. (Released by hand.)

(d) Counterbalanced belt tighteners and all parts thereof shall be of substantial construction, and securely fastened. The bearings shall be securely capped. If exposed to contact, means shall be installed to catch the belt tightener, to prevent tightener from falling on any person below, should the belt break or throw the tightener.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-20511, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-20511, filed 5/9/73 and Order 73-4, § 296-24-20511, filed 5/7/73.]

WAC 296-24-20513 Gears, sprockets, and chains. (1) Gears. Gears shall be guarded in accordance with one of the following methods:

(a) By a complete enclosure; or

(b) By a standard guard as described in WAC 296-24-20531, at least seven feet high extending six inches above the mesh point of the gears; or

(c) By a band guard covering the face of gear and having flanges extended inward beyond the root of the teeth on the exposed side or sides. Where any portion of the train of gears guarded by a band guard is less than six feet from the floor a disk guard or a complete enclosure to the height of six feet shall be required.

(2) Hand-operated gears. (1) of this section does not apply to hand-operated gears used only to adjust machine parts and which do not continue to move after hand power is removed. However, the guarding of these gears is highly recommended.

(3) Sprockets and chains. All sprocket wheels and chains shall be enclosed unless they are more then seven feet above the floor or platform. Where the drive extends over other machine or working areas, protection against falling shall be provided. This section does not apply to manually operated sprockets.

(4) Openings for oiling. When frequent oiling must be done, openings with hinged or sliding self-closing covers shall be provided. All points not readily accessible shall have oil feed tubes if lubricant is to be added while machinery is in motion.

[Order 73-5, § 296-24-20513, filed 5/9/73 and Order 73-4, § 296-24-20513, filed 5/7/73.]

WAC 296-24-20515 Guarding friction drives. The driving point of all friction drives when exposed to contact shall be guarded, all arm or spoke friction drives and all web friction drives with holes in the web shall be entirely

enclosed, and all projecting belts on friction drives where exposed to contact shall be guarded.

[Order 73-5, § 296-24-20515, filed 5/9/73 and Order 73-4, § 296-24-20515, filed 5/7/73.]

WAC 296-24-20517 Keys, setscrews, and other projections. (1) All projecting keys, setscrews, and other projections in revolving parts shall be removed or made flush or guarded by metal covers. This section does not apply to keys or setscrews within gear or sprocket casings or other enclosures, nor to keys, setscrews, or oilcups in hubs of pulleys less than twenty inches in diameter where they are within the plane of the rim of the pulley.

Note: It is recommended, however, that no projecting setscrews or oilcups be used in any revolving pulley or part of machinery.

[Order 73-5, § 296-24-20517, filed 5/9/73 and Order 73-4, § 296-24-20517, filed 5/7/73.]

WAC 296-24-20519 Collars and couplings. (1) Collars. All revolving collars, including split collars, shall be cylindrical, and screws or bolts used in collars shall not project beyond the largest periphery of the collar.

(2) Couplings. Shaft couplings shall be so constructed as to present no hazard from bolts, nuts, setscrews, or revolving surfaces. Bolts, nuts, and setscrews will, however, be permitted where they are covered with safety sleeves or where they are used parallel with the shafting and are countersunk or else do not extend beyond the flange of the coupling.

[Order 73-5, § 296-24-20519, filed 5/9/73 and Order 73-4, § 296-24-20519, filed 5/7/73.]

WAC 296-24-20521 Bearings and facilities for oiling. Self lubricating bearings are recommended and all drip cups and pans shall be securely fastened.

[Order 73-5, § 296-24-20521, filed 5/9/73 and Order 73-4, § 296-24-20521, filed 5/7/73.]

WAC 296-24-20523 Guarding of clutches, cutoff couplings, and clutch pulleys. (1) Guards. Clutches, cutoff couplings, or clutch pulleys having projecting parts, where such clutches are located seven feet or less above the floor or working platform, shall be enclosed by a stationary guard constructed in accordance with WAC 296-24-20527. A "U" type guard is permissible.

(2) Enginerooms. In enginerooms a guardrail, preferably with toeboard, may be used instead of the guard required by (1) of this section, provided such a room is occupied only by engineroom attendants.

(3) Bearings. A bearing support immediately adjacent to a friction clutch or cutoff coupling shall have self-lubricating bearings requiring attention at infrequent intervals.

[Order 73-5, § 296-24-20523, filed 5/9/73 and Order 73-4, § 296-24-20523, filed 5/7/73.]

WAC 296-24-20525 Belt shifters, clutches, shippers, poles, perches, and fasteners. (1) Belt shifters.

(a) Tight and loose pulleys on all installations made on or after August 27, 1971, shall be equipped with a permanent belt shifter provided with mechanical means to prevent belt from creeping from loose to tight pulley. It is recommended that old installations be changed to conform to this rule.

(b) Belt shifter and clutch handles shall be rounded and be located as far as possible from danger of accidental contact, but within easy reach of the operator. Where belt shifters are not directly located over a machine or bench, the handles shall be cut off six feet six inches above floor level.

(c) All belt and clutch shifters of the same type in each shop should move in the same direction to stop machines, i.e., either all right or all left. This does not apply to friction clutch on countershaft carrying two clutch pulleys with open and crossed belts, respectively. In this case the shifter handle has three positions and the machine is at a standstill when clutch handle is in the neutral or center position.

(2) Belt shippers and shipper poles. The use of belt poles as substitutes for mechanical shifters is not recommended. Where necessity compels their use, they shall be of sufficient size to enable workers to grasp them securely. (A two-inch diameter or 1 1/2 by 2 inches cross-section is suggested.) Poles shall be smooth and preferably of straight grain hardwood, such as ash or hickory. The edges of rectangular poles should be rounded. Poles should extend from the top of the pulley to within about forty inches of floor or working platform.

(3) Belt perches. Where loose pulleys or idlers are not practicable, belt perches in form of brackets, rollers, etc., shall be used to keep idle belts away from the shafts. Perches should be substantial and designed for the safe shifting of belts.

(4) Belt fasteners. Belts which of necessity must be shifted by hand and belts within seven feet of the floor or working platform which are not guarded in accordance with WAC 296-24-20527 shall not be fastened with metal in any case, nor with any other fastening which by construction or wear will constitute an accident hazard.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-20525, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-20525, filed 3/1/76; Order 73-5, § 296-24-20525, filed 5/9/73 and Order 73-4, § 296-24-20525, filed 5/7/73.]

WAC 296-24-20527 Standard guards—General requirements. (1) Materials.

(a) Standard conditions shall be secured by the use of the following materials. Expanded metal, perforated or solid sheet metal, wire mesh on a frame of angle iron, or iron pipe securely fastened to floor or to frame of machine.

(b) All metal should be free from burrs and sharp edges.

(c) Wire mesh should be of the type in which the wires are securely fastened at every cross point either by welding, soldering, or galvanizing, except in case of diamond or square wire mesh made of No. 14 gage wire, 3/4-inch mesh or heavier.

(2) Methods of manufacture.

(a) Expanded metal, sheet or perforated metal, and wire mesh shall be securely fastened to frame by one of the following methods:

(i) With rivets or bolts spaced not more than five inches center to center. In case of expanded metal or wire mesh, metal strips or clips shall be used to form a washer for rivets or bolts.

(ii) By welding to frame every four inches.

(iii) By weaving through channel or angle frame, or if No. 14 gage 3/4-inch mesh or heavier is used by bending entirely around rod frames.

(iv) Where openings in pipe railing are to be filled in with expanded metal, wire mesh or sheet metal, the filler material shall be made into panels with rolled edges or bound with "V" or "U" edging of No. 24 gage or heavier sheet metal fastened to the panels with bolts or rivets spaced not more than five inches center to center. The bound panels shall be fastened to the railing by sheet-metal clips spaced not more than five inches center to center.

(v) Diamond or square mesh made of crimped wire fastened into channels, angle or round-iron frames, may also be used as a filler in guards. Size of mesh shall correspond to Table O-12.

(b) Where the design of guards requires filler material of greater area than 12 square feet, additional frame members shall be provided to maintain panel area within this limit.

(c) All joints of framework shall be made equivalent in strength to the material of the frame.

[Order 73-5, § 296-24-20527, filed 5/9/73 and Order 73-4, § 296-24-20527, filed 5/7/73.]

WAC 296-24-20529 Disk, shield, and "U" guards. (1) Disk guards. A disk guard shall consist of a sheet-metal disk not less than No. 22 gage fastened by "U" bolts or rivets to spokes of pulleys, flywheels, or gears. Where possibility of contact with sharp edges of the disk exists, the edge shall be rolled or wired. In all cases the nuts shall be provided with locknuts which shall be placed on the unexposed side of the wheel.

(2) Shield guards.

(a) A shield guard shall consist of a frame filled in with wire mesh, expanded, perforated, or solid sheet metal.

(b) If area of shield does not exceed six square feet the wire mesh or expanded metal may be fastened in a framework of 3/8-inch solid rod, 3/4-inch by 3/4-inch by 1/8-inch angle iron or metal construction of equivalent strength. Metal shields may have edges entirely rolled around a 3/8-inch solid iron rod.

(3) "U" guards. A "U" guard consisting of a flat surface with edge members shall be designed to cover the under surface and lower edge of a belt, multiple chain, or rope drive. It shall be constructed of materials specified in Table O-12, and shall conform to the requirements of WAC 296-24-20531 (3) and (4). Edges shall be smooth and if size of guard requires, the edges shall be reinforced by rolling, wiring, or by binding with angle or flat iron.

[Order 73-5, § 296-24-20529, filed 5/9/73 and Order 73-4, § 296-24-20529, filed 5/7/73.]

WAC 296-24-20531 Approved materials. (1) Minimum requirements. The materials and dimensions specified in this section shall apply to all guards, except horizontal overhead belts, rope, cable, or chain guards more than seven feet above floor, or platform. (For the latter, see Table O-13.)

(a) Minimum dimensions of materials for the framework of all guards, except as noted in (1)(a)(iii) of this section shall be angle iron 1 inch by 1 inch by 1/8 inch, metal pipe of 3/4-inch inside diameter or metal construction of equivalent strength.

(i) All guards shall be rigidly braced every three feet or fractional part of their height to some fixed part of machinery or building structure. Where guard is exposed to contact with moving equipment additional strength may be necessary.

(ii) The framework for all guards fastened to floor or working platform and without other support or bracing shall consist of 1 1/2-inch by 1 1/2-inch by 1/8-inch angle iron, metal pipe of 1 1/2-inch inside diameter, or metal construction of equivalent strength. All rectangular guards shall have at least four upright frame members each of which shall be carried to the floor and be securely fastened thereto. Cylindrical guards shall have at least three supporting members carried to floor.

(iii) Guards thirty inches or less in height and with a total surface area not in excess of ten square feet may have a frame work of 3/8-inch solid rod, 3/4-inch by 3/4-inch by 1/8-inch angle, or metal construction of equivalent strength. The filling material shall correspond to the requirements of Table O-12.

(b) The specifications given in Table O-12 and (1)(a) of this section are minimum requirements; where guards are exposed to unusual wear, deterioration or impact, heavier material and construction should be used to protect amply against the specific hazards involved.

(2) Wood guards.

(a) Wood guards may be used in the woodworking and chemical industries, in industries where the presence of fumes or where manufacturing conditions would cause the rapid deterioration of metal guards; also in construction work and in locations outdoors where extreme cold or extreme heat make metal guards and railings undesirable. In all other industries, wood guards shall not be used.

(i) Wood shall be sound, tough, and free from any loose knots.

(ii) Guards shall be made of planed lumber not less than one inch rough board measure, and edges and corners rounded off.

(iii) Wood guards shall be securely fastened together with wood screws, hardwood dowel pins, bolts, or rivets.

(iv) While no definite dimensions are given under this heading for framework or filler materials, wood guards shall be equal in strength and rigidity to metal guards specified in (1)(a) and (b) of this section and Table O-12.

(v) For construction of standard wood railing, see (5) of this section.

(3) Guards for horizontal overhead belts.

(a) Guards for horizontal overhead belts shall run the entire length of the belt and follow the line of the pulley to the ceiling or be carried to the nearest wall, thus enclosing the belt effectively. Where belts are so located as to make it impracticable to carry the guard to wall or ceiling, construction of guard shall be such as to enclose completely the top and bottom runs of belt and the face of pulleys.

(b) The guard and all its supporting members shall be securely fastened to wall or ceiling by gimlet-point lag screws or through bolts. In case of masonry construction, expansion bolts shall be used. The use of bolts placed horizontally through floor beams or ceiling rafters is recommended.

(c) Suitable reinforcement shall be provided for the ceiling rafters or overhead floor beams, where such is necessary, to sustain safely the weight and stress likely to be imposed by the guard. The interior surface of all guards, by which is meant the surface of the guard with which a belt will come in contact, shall be smooth and free from all projections of any character, except where construction demands it; protruding shallow roundhead rivets may be used. Overhead belt guards shall be at least one-quarter wider than belt which they protect, except that this clearance need not in any case exceed six inches on each side. Overhead rope drive and block and roller-chain-drive guards shall be not less than six inches wider than the drive on each side. In overhead silent chain-drive guards where the chain is held from laterial displacement on the sprockets, the side clearances required on drives of twenty inch centers or under shall be not less than one-fourth inch from the nearest moving chain part, and on drives of over twenty inch centers a minimum of one-half inch from the nearest moving chain part.

(d) Table O-13 gives the sizes of materials to be used and the general construction specifications of guards for belts ten inches or more in width. No material for overhead belt guards should be smaller than that specified in Table O-13 for belts ten to fourteen inches wide, even if the overhead belt is less than ten inches in width. However, No. 20 gage sheet metal may be used as a filler on guards for belts less than ten inches wide. Expanded metal, because of the sharp edges, should not be used as a filler in horizontal belt guards.

(e) For clearance between guards and belts, ropes or chains of various center to center dimensions between the shafts, see bottom of Table O-13.

(4) Guards for horizontal overhead-rope and chain-drives. Overhead-rope and chain-drive guard construction shall conform to the rules for overhead-belt guard construction of similar width, except that the filler material shall be of the solid type as shown in Table O-13, unless the fire hazard demands the use of open construction. A side guard member of the same solid filling material should be carried up in a vertical position two inches above the level of the lower run of the rope or chain drive and two inches within the periphery of the pulleys which the guard encloses thus forming a trough. These side filler members should be reinforced on the edges with 1 1/2-inch by 1/4-inch flat steel, riveted to the filling material at not greater than eight inch centers; the reinforcing strip should be fastened or bolted to all guard supporting members with at least one 3/8-inch rivet or bolt at each intersection, and the ends should be secured to the ceiling with lag screws or bolts. The filling material shall be fastened to the framework of the guard and the filler supports by 3/16-inch rivets spaced on 4-inch centers. The width of the multiple drive shall be determined by measuring the distance from the outside of the first to the outside of the last rope or chain in the group accommodated by the pulley.

(5) Guardrails and toeboards.

(a) Guardrail shall be forty-two inches in height, with midrail between top rail and floor.

(b) Posts shall be not more than eight feet apart; they are to be permanent and substantial, smooth, and free from protruding nails, bolts, and splinters. If made of pipe, the post shall be one and one-fourth inches inside diameter, or larger. If made of metal shapes or bars, their section shall be equal in strength to that of one and one-half by one and one-half by three-sixteenths inch angle iron. If made of wood, the posts shall be two by four inches or larger. The upper rail shall be two by four inches, or two one by four strips, one at the top and one at the side of posts. The midrail may be one by four inches or more. The rails (metal shapes, metal bars, or wood), should be on that side of the posts which gives the best protection and support. Where panels are fitted with expanded metal or wire mesh as noted in Table O-12 the middle rails may be omitted. Where guard is exposed to contact with moving equipment, additional strength may be necessary.

(c) Toeboards shall be four inches or more in height, of wood, metal, or of metal grill not exceeding one inch mesh. Toeboards at flywheel pits should preferably be placed as close to edge of the pit as possible.

TABLE O-12

TABLE OF STANDARD MATERIALS AND DIMENSIONS

Material	Clearance from moving part at all points	Largest mesh or opening allowable	Minimum gauge (U.S. Standard) or thickness	Minimum height of guard from floor or platform level
	Inches	Inches	Inches	Feet
Woven wire	Under 2	3/8	No. 16	7
	2-4	1/2	No. 16	7
	Under 4	1/2	No. 16	7
	4-15	2	No. 12	7
Expanded metal	Under 4	1/2	No. 18	7
	4-15	2	No. 13	7
Perforated metal	Under 4	1/2	No. 20	7
	4-15	2	No. 14	7
Sheet metal	Under 4		No. 22	7
	4-15		No. 22	7
Wood or metal strip crossed	Under 4	3/8	Wood 3/4 Metal No. 16	7
	4-15	2	Wood 3/4 Metal No. 16	7
Wood or metal strip not crossed	Under 4	1/2 width	Wood 3/4 Metal No. 16	7
	4-15	1 width	Wood 3/4 Metal No. 16	7
Standard rail	Min. 15 Max. 20			

[Order 76-6, § 296-24-20531, filed 3/1/76; Order 73-5, § 296-24-20531, filed 5/9/73 and Order 73-4, § 296-24-20531, filed 5/7/73.]

WAC 296-24-20533 Care of equipment. (1) General. All power-transmission equipment shall be inspected at intervals not exceeding 60 days and be kept in good working condition at all times.

(2) Shafting.

(a) Shafting shall be kept in alignment, free from rust and excess oil or grease.

(b) Where explosives, explosive dusts, flammable vapors or flammable liquids exist, the hazard of static sparks from shafting shall be carefully considered.

(3) Bearings. Bearings shall be kept in alignment and properly adjusted.

(4) Hangers. Hangers shall be inspected to make certain that all supporting bolts and screws are tight and that supports of hanger boxes are adjusted properly.

(5) Pulleys.

(a) Pulleys shall be kept in proper alignment to prevent belts from running off.

(b) One or both pulleys carrying a nonshifting belt should have crowned faces.

(c) Cast-iron pulleys should be tested frequently with a hammer to disclose cracks in rim or spokes. It should be borne in mind that the sound is usually much different if the belt is or is not on the pulley.

(d) Split pulleys should be inspected to ascertain if all bolts holding together the sections of the pulley are tight.

(6) Care of belts.

(a) Quarter-twist belts when installed without an idler can be used on drives running in one direction only. They will run off a pulley when direction of motion is reversed.

(b) Inspection shall be made of belts, lacings, and fasteners and such equipment kept in good repair.

(c) Where possible, dressing should not be applied when belt or rope is in motion; but, if this is necessary, it should be applied where belts or rope leave pulley, not where they approach. The same precautions apply to lubricating chains. In the case of V-belts, belt dressing is neither necessary nor advisable.

(7) Lubrication. The regular oilers shall wear tightfitting clothing and should use cans with long spouts to keep their hands out of danger. Machinery shall be oiled when not in motion, wherever possible.

TABLE O-13

HORIZONTAL OVERHEAD BELTS, ROPES, AND CHAINS 7 FEET OR MORE ABOVE FLOOR OR PLATFORM

(TABLE O-13: Part 1—0" to 14")

	Width	
	From 0" to 14" inclusive	Material
MEMBERS		
Framework	1 1/2"x1 1/2"x1/4"	Angle iron.
Filler (belt guards)	1 1/2"x3/16"	Flat iron.
Filler and vertical side member	No. 20 A.W.G.	Solid sheet metal.
Filler supports	2"x5/16" flat iron	Flat and angle.
Guard supports	2"x5/16	Flat iron.
FASTENINGS		
Filler supports to framework	(2) 3/16"	Rivets.
Filler flats to supports (belt guards)	(1) 5/16"	Flush rivets.
Filler to frame and supports (chain guards)	3/16" rivets spaced	
Guard supports to frame work	(2) 3/6"	Rivets or bolts.
Guard and supports to overhead ceiling	1/4"x3 1/2" lag screws or 1/2" bolts	Lag screws or bolts.
DETAILS-SPACING, ETC.		
Width of guards	One-quarter wider than belt, rope, or chain drive	
Spacing between filler supports	20" C. to C	
Spacing between filler flats (belt guards)	2" apart	
Spacing between guard supports	36" C. to C	
OTHER BELT GUARD FILLING PERMITTED		
Sheet metal fastened as in chain guards	No. 20 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 12 A.W.G.	
CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD		
Distance center to center of shafts	Up to 15' inclusive	Over 40'.
Clearance from belt, or chain to guard	6"	20".

(TABLE O-13: Part 2—Over 14" to 24")

	Width	
	Over 14" to 24" inclusive	Material
MEMBERS		
Framework	2"x2"x5/16"	Angle iron.
Filler (belt guards)	2"x3/16"	Flat iron.
Filler and vertical side member	No. 18 A.W.G.	Solid sheet metal.
Filler supports	2"x3/8" flat iron	Flat and angle.
Guard supports	2"x3/8"	Flat iron.
FASTENINGS		
Filler supports to framework	(2) 3/6"	Rivets.
Filler flats to supports (belt guards)	(1) 5/16"	Flush rivets.
Filler to frame and supports (chain guards)	8" centers on sides and 4" centers on bottom	
Guard supports to frame work	(2) 7/16"	Rivets or bolts.
Guard and supports to overhead ceiling	5/8"x4" lag screws or 5/8" bolts	Lag screws or bolts.
DETAILS-SPACING, ETC.		
Width of guards		
Spacing between filler supports	16" C. to C	
Spacing between filler flats (belt guards)	2 1/2" apart	
Spacing between guard supports	36" C. to C	

OTHER BELT GUARD FILLING PERMITTED		
Sheet metal fastened as in chain guards	No. 18 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 10 A.W.G.	
CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD		
Distance center to center of shafts	Over 15' to 25' inclusive	Over 40'.
Clearance from belt, or chain to guard	10"	20".

(TABLE O-13: Part 3—Over 24")

	Width	
	Over 24"	Material
MEMBERS		
Framework	3"x3"x3/8"	Angle iron.
Filler (belt guards)	2"x5/16"	Flat iron.
Filler and vertical side member	No. A.W.G.	Solid sheet metal.
Filler supports	2 1/2"x2 1/2"x1/4" angle	Flat and angle.
Guard supports	2 1/2"x3/8"	Flat iron.
FASTENINGS		
Filler supports to framework	(3) 1/2"	Rivets.
Filler flats to supports (belt guards)	(2) 3/8"	Flush rivets.
Filler to frame and supports (chain guards)		
Guard supports to frame work	(2) 5/8"	Rivets or bolts.
Guard and supports to overhead ceiling	3/4"x6" lag screws or 3/4" bolts.	Lag screws or bolts.
DETAILS-SPACING, ETC.		
Width of guards		
Spacing between filler supports	16" C. to C.	
Spacing between filler flats (belt guards)	4" apart	
Spacing between guard supports	36" C. to C.	
OTHER BELT GUARD FILLING PERMITTED		
Sheet metal fastened as in chain guards	No. 18 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 8 A.W.G.	
CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD		
Distance center to center of shafts	Over 25' to 40' inclusive	Over 40'.
Clearance from belt, or chain to guard	15"	20".

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-20533, filed 11/13/80; Order 73-5, § 296-24-20533, filed 5/9/73 and Order 73-4, § 296-24-20533, filed 5/7/73.]

WAC 296-24-20699 Appendices A through D are added to Part C of chapter 296-24 WAC, to describe the federal procedures for third-party validation and certification of presence sensing devices on mechanical power presses.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-20699, filed 11/14/88.]

WAC 296-24-20700 Appendix A to WAC 296-24-195. Mandatory requirements for certification/validation of safety systems for presence sensing device initiation of mechanical power presses.

(1) Purpose. The purpose of the certification/validation of safety systems for presence sensing device initiation (PSDI) of mechanical power presses is to ensure that the safety systems are designed, installed, and maintained in accordance with all applicable requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A.

(2) General.

(a) The certification/validation process shall utilize an independent third-party validation organization recognized by OSHA in accordance with the requirements specified in WAC 296-24-20720 Appendix C.

(b) While the employer is responsible for assuring that the certification/validation requirements in WAC 296-24-19517(11) are fulfilled, the design certification of PSDI safety systems may be initiated by manufacturers, employers, and/or their representatives. The term "manufacturers" refers to the manufacturer of any of the components of the safety system. An employer who assembles a PSDI safety system would be a manufacturer as well as employer for purposes of this standard and Appendix.

(c) The certification/validation process includes two stages. For design certification, in the first stage, the manufacturer (which can be an employer) certifies that the PSDI safety system meets the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A, based on appropriate design criteria and tests. In the second stage, the OSHA-recognized third-party validation organization validates that the PSDI safety system meets the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A and the manufacturer's certification by reviewing the manufacturer's design and test data and performing any additional reviews required by this standard or which it believes appropriate.

(d) For installation certification/validation and annual recertification/revalidation, in the first stage the employer certifies or recertifies that the employer is installing or utilizing a PSDI safety system validated as meeting the design requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A by an OSHA-recognized third-party validation organization and that the installation, operation and maintenance meet the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A. In the second stage, the OSHA-recognized third-party validation organization validates or revalidates that the PSDI safety system installation meets the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A

and the employer's certification, by reviewing that the PSDI safety system has been certified; the employer's certification, designs and tests, if any; the installation, operation, maintenance and training; and by performing any additional tests and reviews which the validation organization believes is necessary.

(3) Summary. The certification/validation of safety systems of PSDI shall consider the press, controls, safeguards, operator, and environment as an integrated system which shall comply with all of the requirements in WAC 296-24-19503 through 296-24-19517 and this Appendix A. The certification/validation process shall verify that the safety system complies with the OSHA safety requirements as follows:

(a) Design certification/validation.

(i) The major parts, components, and subsystems used shall be defined by part number or serial number, as appropriate, and by manufacturer to establish the configuration of the system.

(ii) The identified parts, components, and subsystems shall be certified by the manufacturer to be able to withstand the functional and operational environments of the PSDI safety system.

(iii) The total system design shall be certified by the manufacturer as complying with all requirements in WAC 296-24-19503 through 296-24-19517 and this Appendix A.

(iv) The third-party validation organization shall validate the manufacturer's certification under (a)(i) and (ii) of this subsection.

(b) Installation certification/validation.

(i) The employer shall certify that the PSDI safety system has been design certified and validated, that the installation meets the operational and environmental requirements specified by the manufacturer, that the installation drawings are accurate, and that the installation meets the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A. (The operational and installation requirements of the PSDI safety system may vary for different applications.)

(ii) The third-party validation organization shall validate the employer's certifications that the PSDI safety system is design certified and validated, that the installation meets the installation and environmental requirements specified by the manufacturer, and that the installation meets the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A.

(c) Recertification/revalidation.

(i) The PSDI safety system shall remain under certification/validation for the shorter of one year or until the system hardware is changed, modified or refurbished, or operating conditions are changed (including environmental, application or facility changes), or a failure of a critical component has occurred.

(ii) Annually, or after a change specified in (c)(i) of this subsection, the employer shall inspect and recertify the installation as meeting the requirements set forth under subsection (3)(b) of this section, Installation certification/validation.

(iii) The third-party validation organization, annually or after a change specified in (c)(i) of this subsection, shall validate the employer's certification that the requirements of subsection (b) of this section, Installation certification/validation have been met.

Note: Such changes in operational conditions as die changes of press relocations not involving disassembly or revision to the safety system would not require recertification/revalidation.

(4) Certification/validation requirements.

(a) General design certification/validation requirements.

(i) Certification/validation program requirements. The manufacturer shall certify and the OSHA-recognized third-party validation organization shall validate that:

(A) The design of components, subsystems, software, and assemblies meets OSHA performance requirements and are ready for the intended use; and

(B) The performance of combined subsystems meets OSHA's operational requirements.

(ii) Certification/validation program level of risk evaluation requirements. The manufacturer shall evaluate and certify, and the OSHA-recognized third-party validation organization shall validate, the design and operation of the safety system by determining conformance with the following:

(A) The safety system shall have the ability to sustain a single failure or a single operating error and not cause injury to personnel from point of operation hazards. Acceptable design features shall demonstrate, in the following order of precedence, that:

(I) No single failure points may cause injury; or

(II) Redundancy, and comparison and/or diagnostic checking, exist for the critical items that may cause injury, and the electrical, electronic, electromechanical and mechanical parts and components are selected so that they can withstand operational and external environments. The safety factor and/or derated percentage shall be specifically noted and complied with.

(B) The manufacturer shall design, evaluate, test and certify, and the third-party validation organization shall evaluate and validate, that the PSDI safety system meets appropriate requirements in the following areas.

(I) Environmental limits

-Temperature

-Relative humidity

-Vibration

-Fluid compatibility with other materials

(II) Design limits

-Power requirements

-Power transient tolerances

-Compatibility of materials used

-Material stress tolerances and limits

-Stability to long term power fluctuations

-Sensitivity to signal acquisition

-Repeatability of measured parameter without inadvertent initiation of a press stroke

-Operational life of components in cycles, hours, or both

-Electromagnetic tolerance to:

- Specific operational wave lengths; and
- Externally generated wave lengths
- New design certification/validation. Design certification/validation for a new safety system, i.e., a new design or new integration of specifically identified components and subsystems, would entail a single certification/validation which would be applicable to all identical safety systems. It

would not be necessary to repeat the tests on individual safety systems of the same manufacture or design. Nor would it be necessary to repeat these tests in the case of modifications where determined by the manufacturer and validated by the third-party validation organization to be equivalent by similarity analysis. Minor modifications not affecting the safety of the system may be made by the manufacturer without revalidation.

(III) Substantial modifications would require testing as a new safety system, as deemed necessary by the validation organization.

(b) Additional detailed design certification/validation requirements.

(i) General. The manufacturer or the manufacturer's representative shall certify to and submit to an OSHA-recognized third-party validation organization the documentation necessary to demonstrate that the PSDI safety system design is in full compliance with the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A, as applicable, by means of analysis, tests, or combination of both, establishing that the following additional certification/validation requirements are fulfilled.

(ii) Reaction times. For the purpose of demonstrating compliance with the reaction time required by WAC 296-24-19517, the tests shall use the following definitions and requirements:

(A) "Reaction time" means the time, in seconds, it takes the signal, required to activate/deactivate the system, to travel through the system, measured from the time of signal initiation to the time the function being measured is completed.

(B) "Full stop" or "no movement of the slide or ram" means when the crankshaft rotation has slowed to two or less revolutions per minute, just before stopping completely.

(C) "Function completion" means for, electrical, electromechanical and electronic devices, when the circuit produces a change of state in the output element of the device.

(D) When the change of state is motion, the measurement shall be made at the completion of the motion.

(E) The generation of the test signal introduced into the system for measuring reaction time shall be such that the initiation time can be established with an error of less than 0.5 percent of the reaction time measured.

(F) The instrument used to measure reaction time shall be calibrated to be accurate to within 0.001 second.

(iii) Compliance with WAC 296-24-19517 (2)(b).

(A) For compliance with these requirements, the average value of the stopping time, Ts, shall be the arithmetic mean of at least twenty-five stops for each stop angle initiation measured with the brake and/or clutch unused, fifty percent worn, and ninety percent worn. The recommendations of the brake system manufacturer shall be used to simulate or estimate the brake wear. The manufacturer's recommended minimum lining depth shall be identified and documented, and an evaluation made that the minimum depth will not be exceeded before the next (annual) recertification/revalidation. A correlation of the brake and/or clutch degradation based on the above tests and/or estimates shall be made and documented. The results shall document the conditions under which the brake and/or clutch will and will not comply with the requirement. Based upon this determination, a scale shall be developed to indicate the allowable ten percent of the stopping time at the top of the stroke for slide or ram overtravel due to brake wear. The scale shall be marked to indicate that brake adjustment and/or replacement is required. The explanation and use of the scale shall be documented.

(B) The test specification and procedure shall be submitted to the validation organization for review and validation prior to the test. The validation organization representative shall witness at least one set of tests.

(iv) Compliance with WAC 296-24-19517 (5)(c) and (9)(f). Each reaction time required to calculate the safety distance, including the brake monitor setting, shall be documented in separate reaction time tests. These tests shall specify the acceptable tolerance band sufficient to assure that tolerance build-up will not render the safety distance unsafe.

(A) Integrated test of the press fully equipped to operate in the PSDI mode shall be conducted to establish the total system reaction time.

(B) Brakes which are the adjustable type shall be adjusted properly before the test.

(v) Compliance with WAC 296-24-19517 (2)(c).

(A) Prior to conducting the brake system test required by WAC 296-24-19517 (2)(b), a visual check shall be made of the springs. The visual check shall include a determination that the spring housing or rod does not show damage sufficient to degrade the structural integrity of the unit, and the spring does not show any tendency to interleave.

(B) Any detected broken or unserviceable springs shall be replaced before the test is conducted. The test shall be considered successful if the stopping time remains within that which is determined by WAC 296-24-19517 (9)(f) for the safety distance setting. If the increase in press stopping time exceeds the brake monitor setting limit defined in WAC 296-24-19517 (5)(c), the test shall be considered unsuccessful, and the cause of the excessive stopping time shall be investigated. It shall be ascertained that the springs have not been broken and that they are functioning properly.

(vi) Compliance with WAC 296-24-19517(7).

(A) Tests which are conducted by the manufacturers of electrical components to establish stress, life, temperature and loading limits must be tests which are in compliance with the provisions of chapter 296-24 WAC Part L.

(B) Electrical and/or electronic cards or boards assembled with discreet components shall be considered a subsystem and shall require separate testing that the subsystems do not degrade in any of the following conditions:

(I) Ambient temperature variation from -20°C to +50°C.

(II) Ambient relative humidity of ninety-nine percent.

(III) Vibration of 45G for one millisecond per stroke when the item is to be mounted on the press frame.

(IV) Electromagnetic interference at the same wavelengths used for the radiation sensing field, at the power line frequency fundamental and harmonics, and also from autogenous radiation due to system switching.

(V) Electrical power supply variations of ±15 percent.

(C) The manufacturer shall specify the test requirements and procedures from existing consensus tests in compliance with the provisions of chapter 296-24 WAC Part L.

(D) Tests designed by the manufacturer shall be made available upon request to the validation organization. The

validation organization representative shall witness at least one set of each of these tests.

(vii) Compliance with WAC 296-24-19517 (9)(d).

(A) The manufacturer shall design a test to demonstrate that the prescribed minimum object sensitivity of the presence sensing device is met.

(B) The test specifications and procedures shall be made available upon request to the validation organization.

(viii) Compliance with WAC 296-24-19517 (9)(k).

(A) The manufacturer shall design a test(s) to establish the hand tool extension diameter allowed for variations in minimum object sensitivity response.

(B) The test(s) shall document the range of object diameter sizes which will produce both single and double break conditions.

(C) The test(s) specifications and procedures shall be made available upon request to the validation organization.

(ix) Integrated tests certification/validation.

(A) The manufacturer shall design a set of integrated tests to demonstrate compliance with the following requirements:

WAC 296-24-19517 (6)(b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), and (o).

(B) The integrated test specifications and procedures shall be made available to the validation organization.

(x) Analysis. The manufacturer shall submit to the validation organization the technical analysis such as hazard analysis, failure mode and effect analysis, stress analysis, component and material selection analysis, fluid compatibility, and/or other analyses which may be necessary to demonstrate compliance with the following requirements:

WAC 296-24-19517 (8)(a) and (b); (2)(b) and (c); (3)(a)(i) and (iv) and (b); (5)(a), (b) and (c); (6)(a), (c), (d), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), and (p); (7)(a) and (b); (9)(d), (f), (i), (j) and (k); (10)(a) and (b).

(xi) Types of tests acceptable for certification/validation.

(A) Test results obtained from development testing may be used to certify/validate the design.

(B) The test results shall provide the engineering data necessary to establish confidence that the hardware and software will meet specifications, the manufacturing process has adequate quality control and the data acquired was used to establish processes, procedures, and test levels supporting subsequent hardware design, production, installation and maintenance.

(xii) Validation for design certification/validation. If, after review of all documentation, tests, analyses, manufacturer's certifications, and any additional tests which the third-party validation organization believes are necessary, the third-party validation organization determines that the PSDI safety system is in full compliance with the applicable requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A, it shall validate the manufacturer's certification that it so meets the stated requirements.

(c) Installation certification/validation requirements.

(i) The employer shall evaluate and test the PSDI system installation, shall submit to the OSHA-recognized third-party validation organization the necessary supporting documentation, and shall certify that the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A have been met and that the installation is proper.

(ii) The OSHA-recognized third-party validation organization shall conduct tests, and/or review and evaluate the employer's installation tests, documentation and representations. If it so determines, it shall validate the employer's certification that the PSDI safety system is in full conformance with all requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A.

(d) Recertification/revalidation requirements.

(i) A PSDI safety system which has received installation certification/validation shall undergo recertification/revalidation the earlier of:

(A) Each time the systems hardware is significantly changed, modified, or refurbished;

(B) Each time the operational conditions are significantly changed (including environmental, application or facility changes, but excluding such changes as die changes or press relocations not involving revision to the safety system);

(C) When a failure of a significant component has occurred or a change has been made which may affect safety; or

(D) When one year has elapsed since the installation certification/validation or the last recertification/revalidation.

(ii) Conduct of recertification/revalidation. The employer shall evaluate and test the PSDI safety system installation, shall submit to the OSHA-recognized third-party validation organization the necessary supporting documentation, and shall recertify that the requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A are being met. The documentation shall include, but not be limited to, the following items:

(A) Demonstration of a thorough inspection of the entire press and PSDI safety system to ascertain that the installation, components and safeguarding have not been changed, modified or tampered with since the installation certification/validation or last recertification/revalidation was made.

(B) Demonstrations that such adjustments as may be needed (such as to the brake monitor setting) have been accomplished with proper changes made in the records and on such notices as are located on the press and safety system.

(C) Demonstration that review has been made of the reports covering the design certification/validation, the installation certification/validation, and all recertification/revalidation, in order to detect any degradation to an unsafe condition, and that necessary changes have been made to restore the safety system to previous certification/validation levels.

(iii) The OSHA-recognized third-party validation organization shall conduct tests, and/or review and evaluate the employer's installation, tests, documentation and representations. If it so determines, it shall revalidate the employer's recertification that the PSDI system is in full conformance with all requirements of WAC 296-24-19503 through 296-24-19517 and this Appendix A.

[Statutory Authority: Chapter 49.17 RCW. 92-17-022 (Order 92-06), § 296-24-20700, filed 8/10/92, effective 9/10/92; 91-24-017 (Order 91-07), § 296-24-20700, filed 11/22/91, effective 12/24/91; 90-09-026 (Order 90-01), § 296-24-20700, filed 4/10/90, effective 5/25/90; 88-23-054 (Order 88-25), § 296-24-20700, filed 11/14/88.]

WAC 296-24-20710 Appendix B to WAC 296-24-195. Nonmandatory guidelines for certification/validation of

safety systems for presence sensing device initiation of mechanical power presses.

(1) Objectives. This Appendix provides employers, manufacturers, and their representatives, with nonmandatory guidelines for use in developing certification documents. Employers and manufacturers are encouraged to recommend other approaches if there is a potential for improving safety and reducing cost. The guidelines apply to certification/validation activity from design evaluation through the completion of the installation test and the annual recertification/revalidation tests.

(2) General guidelines.

(a) The certification/validation process should confirm that hazards identified by hazard analysis, (HA), failure mode effect analyses (FMEA), and other system analyses have been eliminated by design or reduced to an acceptable level through the use of appropriate design features, safety devices, warning devices, or special procedures. The certification/validation process should also confirm that residual hazards identified by operational analysis are addressed by warning, labeling safety instructions or other appropriate means.

(b) The objective of the certification/validation program is to demonstrate and document that the system satisfies specification and operational requirements for safe operations.

(3) Quality control. The safety attributes of a certified/validated PSDI safety system are more likely to be maintained if the quality of the system and its parts, components and subsystem is consistently controlled. Each manufacturer supplying parts, components, subsystems, and assemblies needs to maintain the quality of the product, and each employer needs to maintain the system in a nondegraded condition.

(4) Analysis guidelines.

(a) Certification/validation of hardware design below the system level should be accomplished by test and/or analysis.

(b) Analytical methods may be used in lieu of, in combination with, or in support of tests to satisfy specification requirements.

(c) Analyses may be used for certification/validation when existing data are available or when test is not feasible.

(d) Similarity analysis may be used in lieu of tests where it can be shown that the article is similar in design, manufacturing process, and quality control to another article that was previously certified/validated in accordance with equivalent or more stringent criteria. If previous design, history and application are considered to be similar, but not equal to or more exacting than earlier experiences, the additional or partial certification/validation tests should concentrate on the areas of changed or increased requirements.

(5) Analysis reports.

(a) The analysis reports should identify:

(i) The basis for the analysis;

(ii) The hardware or software items analyzed;

(iii) Conclusions;

(iv) Safety factors; and

(v) Limit of the analysis.

The assumptions made during the analysis should be clearly stated and a description of the effects of these assumptions on the conclusions and limits should be included.

(b) Certification/validation by similarity analysis reports should identify, in addition to the above, application of the part, component or subsystem for which certification/validation is being sought as well as data from previous usage establishing adequacy of the item. Similarity analysis should not be accepted when the internal and external stresses on the item being certified/validated are not defined.

(c) Usage experience should also include failure data supporting adequacy of the design.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-20710, filed 11/14/88.]

WAC 296-24-20720 Appendix C to WAC 296-24-195. Mandatory requirements for OSHA recognition of third-party validation organizations for the PSDI standard.

(1) This Appendix prescribes mandatory requirements and procedures for OSHA recognition of third-party validation organizations to validate employer and manufacturer certifications that their equipment and practices meet the requirements of the PSDI standard. The scope of the Appendix includes the three categories of certification/validation required by the PSDI standard: Design certification/validation, installation certification/validation, and annual recertification/revalidation. If further detailing of these provisions will assist the validation organization or OSHA in this activity, this detailing will be done through appropriate OSHA program directives.

(2) Procedure for OSHA recognition of validation organizations.

(a) Applications.

(i) Eligibility.

(A) Any person or organization considering itself capable of conducting a PSDI-related third-party validation function may apply for OSHA recognition.

(B) However, in determining eligibility for a foreign-based third-party validation organization, OSHA shall take into consideration whether there is reciprocity of treatment by the foreign government after consultation with relevant United States government agencies.

(ii) Content of application.

(A) The application shall identify the scope of the validation activity for which the applicant wishes to be recognized, based on one of the following alternatives:

(I) Design certification/validation, installation certification/validation, and annual recertification/revalidation;

(II) Design certification/validation only; or

(III) Installation/certification/validation and annual recertification/revalidation.

(B) The application shall provide information demonstrating that it and any validating laboratory utilized meet the qualifications set forth in subsection (3) of this section.

(C) The applicant shall provide information demonstrating that it and any validating laboratory utilized meet the program requirements set forth in subsection (4) of this section.

(D) The applicant shall identify the test methods it or the validating laboratory will use to test or judge the components and operations of the PSDI safety system required to be tested by the PSDI standard and WAC 296-

24-20700, Appendix A, and shall specify the reasons the test methods are appropriate.

(E) The applicant may include whatever enclosures, attachments, or exhibits the applicant deems appropriate. The application need not be submitted on a federal form.

(F) The applicant shall certify that the information submitted is accurate.

(iii) Filing office location. The application shall be filed with: PSDI Certification/Validation Program, Office of Variance Determination, Occupational Safety and Health Administration, U.S. Department of Labor, Room N3653, 200 Constitution Avenue, N.W., Washington, DC 20210.

(iv) Amendments and withdrawals.

(A) An application may be revised by an applicant at any time prior to the completion of the final staff recommendation.

(B) An application may be withdrawn by an applicant, without prejudice, at any time prior to the final decision by the assistant secretary in (b)(viii)(B)(IV) of this subsection.

(b) Review and decision process.

(i) Acceptance and field inspection. All applications submitted will be accepted by OSHA, and their receipt acknowledged in writing. After receipt of an application, OSHA may request additional information if it believes information relevant to the requirements for recognition have been omitted. OSHA may inspect the facilities of the third-party validation organization and any validating laboratory, and while there shall review any additional documentation underlying the application. A report shall be made of each field inspection.

(ii) Requirements for recognition. The requirements for OSHA recognition of a third-party validation organization for the PSDI standard are that the program has fulfilled the requirements of subsection (3) of this section for qualifications and of subsection (4) of this section for program requirements, and the program has identified appropriate test and analysis methods to meet the requirements of the PSDI standard and WAC 296-24-20700, Appendix A.

(iii) Preliminary approval. If, after review of the application, any additional information, and the inspection report, the applicant and any validating laboratory appear to have met the requirements for recognition, a written recommendation shall be submitted by the responsible OSHA personnel to the assistant secretary to approve the application with a supporting explanation.

(iv) Preliminary disapproval. If, after review of the application, additional information, and inspection report, the applicant does not appear to have met the requirements for recognition, the director of the PSDI certification/validation program shall notify the applicant in writing, listing the specific requirements of this Appendix which the applicant has not met, and the reasons.

(v) Revision of application. After receipt of a notification of preliminary disapproval, the applicant may submit a revised application for further review by OSHA pursuant to (b) of this subsection or may request that the original application be submitted to the assistant secretary with a statement of reasons supplied by the applicant as to why the application should be approved.

(vi) Preliminary decision by assistant secretary.

(A) The assistant secretary, or a special designee for this purpose, will make a preliminary decision whether the applicant has met the requirements for recognition based on the completed application file and the written staff recommendation, as well as the statement of reasons by the applicant if there is a recommendation of disapproval.

(B) This preliminary decision will be sent to the applicant and subsequently published in the federal register.

(vii) Public review and comment period.

(A) The federal register notice of preliminary decision will provide a period of not less than sixty calendar days for the written comments on the applicant's fulfillment of the requirements for recognition. The application, supporting documents, staff recommendation, statement of applicant's reasons, and any comments received, will be available for public inspection in the OSHA docket office.

(B) If the preliminary decision is in favor of recognition, a member of the public, or if the preliminary decision is against recognition, the applicant may request a public hearing by the close of the comment period, if it supplies detailed reasons and evidence challenging the basis of the assistant secretary's preliminary decision and justifying the need for a public hearing to bring out evidence which could not be effectively supplied through written submissions.

(viii) Final decision by assistant secretary.

(A) Without hearing. If there are no valid requests for a hearing, based on the application, supporting documents, staff recommendation, evidence and public comment, the assistant secretary shall issue the final decision (including reasons) of the Department of Labor on whether the applicant has demonstrated by a preponderance of the evidence that it meets the requirements for recognition.

(B) After hearing. If there is a valid request for a hearing pursuant to (b)(vii)(B) of this subsection, the following procedures will be used:

(I) The assistant secretary will issue a notice of hearing before an administrative law judge of the Department of Labor pursuant to the rules specified in 29 CFR Part 1905, Subpart C.

(II) After the hearing, pursuant to Subpart C, the administrative law judge shall issue a decision (including reasons) based on the application, the supporting documentation, the staff recommendation, the public comments and the evidence submitted during the hearing (the record), stating whether it has been demonstrated, based on a preponderance of evidence, that the applicant meets the requirements for recognition. If no exceptions are filed, this is the final decision of the Department of Labor.

(III) Upon issuance of the decision, any party to the hearing may file exceptions within twenty days pursuant to Subpart C. If exceptions are filed, the administrative law judge shall forward the decision, exceptions and record to the assistant secretary for the final decision on the application.

(IV) The assistant secretary shall review the record, the decision by the administrative law judge, and the exceptions. Based on this, the assistant secretary shall issue the final decision (including reasons) of the Department of Labor stating whether the applicant has demonstrated by a preponderance of evidence that it meets the requirements for recognition.

(ix) Publication. A notification of the final decision shall be published in the federal register.

(c) Terms and conditions of recognition, renewal and revocation.

(i) The following terms and conditions shall be part of every recognition:

(A) The recognition of any validation organization will be evidenced by a letter of recognition from OSHA. The letter will provide the specific details of the scope of the OSHA recognition as well as any conditions imposed by OSHA, including any federal monitoring requirements.

(B) The recognition of each validation organization will be valid for five years, unless terminated before or renewed after the expiration of the period. The dates of the period of recognition will be stated in the recognition letter.

(C) The recognized validation organization shall continue to satisfy all the requirements of this Appendix and the letter of recognition during the period of recognition.

(ii) A recognized validation organization may change a test method of the PSDI safety system certification/validation program by notifying the assistant secretary of the change, certifying that the revised method will be at least as effective as the prior method, and providing the supporting data upon which its conclusions are based.

(iii) A recognized validation organization may renew its recognition by filing a renewal request at the address in (a)(iii) of this subsection, not less than one hundred eighty calendar days, nor more than one year, before the expiration date of its current recognition. When a recognized validation organization has filed such a renewal request, its current recognition will not expire until a final decision has been made on the request. The renewal request will be processed in accordance with (b) of this subsection, except that a reinspection is not required but may be performed by OSHA. A hearing will be granted to an objecting member of the public if evidence of failure to meet the requirements of this Appendix is supplied to OSHA.

(iv) A recognized validation organization may apply to OSHA for an expansion of its current recognition to cover other categories of PSDI certification/validation in addition to those included in the current recognition. The application for expansion will be acted upon and processed by OSHA in accordance with (b) of this subsection, subject to the possible reinspection exception. If the validation organization has been recognized for more than one year, meets the requirements for expansion of recognition, and there is no evidence that the recognized validation organization has not been following the requirements of this Appendix and the letter of recognition, an expansion will normally be granted. A hearing will be granted to an objecting member of the public only if evidence of failure to meet the requirements of this Appendix is supplied to OSHA.

(v) A recognized validation organization may voluntarily terminate its recognition, either in its entirety or with respect to any area covered in its recognition, by giving written notice to OSHA at any time. The written notice shall indicate the termination date. A validation organization may not terminate its installation certification and recertification validation functions earlier than either one year from the date of the written notice, or the date on which another recognized validation organization is able to perform the validation of installation certification and recertification.

(vi) OSHA may revoke its recognition of a validation organization if its program either has failed to continue to satisfy the requirements of this Appendix or its letter of recognition, has not been performing the validation functions required by the PSDI standard and WAC 296-24-20700, Appendix A, or has misrepresented itself in its applications. Before proposing to revoke recognition, the agency will notify the recognized validation organization of the basis of the proposed revocation and will allow rebuttal or correction of the alleged deficiencies. If the deficiencies are not corrected, OSHA may revoke recognition, effective in sixty days, unless the validation organization requests a hearing within that time.

(vii) If a hearing is requested, it shall be held before an administrative law judge of the Department of Labor pursuant to the rules specified in 29 CFR Part 1905, Subpart C.

(viii) The parties shall be OSHA and the recognized validation organization. The decision shall be made pursuant to the procedures specified in (b)(viii)(B)(II) through (IV) of this subsection except that the burden of proof shall be on OSHA to demonstrate by a preponderance of the evidence that the recognition should be revoked because the validation organization either is not meeting the requirements for recognition, has not been performing the validation functions required by the PSDI standard and WAC 296-24-20700, Appendix A, or has misrepresented itself in its applications.

(d) Provisions of OSHA recognition. Each recognized third-party validation organization and its validating laboratories shall:

(i) Allow OSHA to conduct unscheduled reviews or on-site audits of it or the validating laboratories on matters relevant to PSDI, and cooperate in the conduct of these reviews and audits;

(ii) Agree to terms and conditions established by OSHA in the grant of recognition on matters such as exchange of data, submission of accident reports, and assistance in studies for improving PSDI or the certification/validation process.

(3) Qualifications. The third-party validation organization, the validating laboratory, and the employees of each shall meet the requirements set forth in this section of this Appendix.

(a) Experience of validation organization.

(i) The third-party validation organization shall have legal authority to perform certification/validation activities.

(ii) The validation organization shall demonstrate competence and experience in either power press design, manufacture or use, or testing, quality control or certification/validation of equipment comparable to power presses and associated control systems.

(iii) The validation organization shall demonstrate a capability for selecting, reviewing, and/or validating appropriate standards and test methods to be used for validating the certification of PSDI safety systems, as well as for reviewing judgments on the safety of PSDI safety systems and their conformance with the requirements of this section.

(iv) The validating organization may utilize the competence, experience, and capability of its employees to demonstrate this competence, experience, and capability.

(b) Independence of validation organization.

(i) The validation organization shall demonstrate that:

(A) It is financially capable to conduct the work;

(B) It is free of direct influence or control by manufacturers, suppliers, vendors, representatives of employers and employees, and employer or employee organizations; and

(C) Its employees are secure from discharge resulting from pressures from manufacturers, suppliers, vendors, employers or employee representatives.

(ii) A validation organization may be considered independent even if it has ties with manufacturers, employers or employee representatives if these ties are with at least two of these three groups; it has a board of directors (or equivalent leadership responsible for the certification/validation activities) which includes representatives of the three groups; and it has a binding commitment of funding for a period of three years or more.

(c) Validating laboratory. The validation organization's laboratory (which organizationally may be a part of the third-party validation organization):

(i) Shall have legal authority to perform the validation of certification;

(ii) Shall be free of operational control and influence of manufacturers, suppliers, vendors, employers or employee representatives that would impair its integrity of performance; and

(iii) Shall not engage in the design, manufacture, sale, promotion, or use of the certified equipment.

(d) Facilities and equipment. The validation organization's validating laboratory shall have available all testing facilities and necessary test and inspection equipment relevant to the validation of the certification of PSDI safety systems, installations and operations.

(e) Personnel. The validation organization and the validating laboratory shall be adequately staffed by personnel who are qualified by technical training and/or experience to conduct the validation of the certification of PSDI safety systems.

(i) The validation organization shall assign overall responsibility for the validation of PSDI certification to an administrative director. Minimum requirements for this position are a bachelor's degree and five years professional experience, at least one of which shall have been in responsible charge of a function in the areas of power press design or manufacture or a broad range of power press use, or in the areas of testing, quality control, or certification/validation of equipment comparable to power presses or their associated control systems.

(ii) The validating laboratory, if a separate organization from the validation organization, shall assign technical responsibility for the validation of PSDI certification to a technical director. Minimum requirements for this position are a bachelor's degree in a technical field and five years of professional experience, at least one of which shall have been in responsible charge of a function in the area of testing, quality control or certification/validation of equipment comparable to power presses or their associated control systems.

(iii) If the validation organization and the validating laboratory are the same organization, the administrative and technical responsibilities may be combined in a single position, with minimum requirements as described in (e)(i) and (ii) of this subsection for the combined position.

(iv) The validation organization and validating laboratory shall have adequate administrative and technical staffs to conduct the validation of the certification of PSDI safety systems.

(f) Certification/validation mark or logo.

(i) The validation organization or the validating laboratory shall own a registered certification/validation mark or logo.

(ii) The mark or logo shall be suitable for incorporation into the label required by WAC 296-24-19517 (11)(c) of this part.

(4) Program requirements.

(a) Test and certification/validation procedures.

(i) The validation organization and/or validating laboratory shall have established written procedures for test and certification/validation of PSDI safety systems. The procedures shall be based on pertinent OSHA standards and test methods, or other publicly available standards and test methods generally recognized as appropriate in the field, such as national consensus standards or published standards of professional societies or trade associations.

(ii) The written procedures for test and certification/validation of PSDI systems, and the standards and test methods on which they are based, shall be reproducible and be available to OSHA and to the public upon request.

(b) Test reports.

(i) A test report shall be prepared for each PSDI safety system that is tested. The test report shall be signed by a technical staff representative and the technical director.

(ii) The test report shall include the following:

(A) Name of manufacturer and catalog or model number of each subsystem or major component.

(B) Identification and description of test methods or procedures used. (This may be through reference to published sources which describe the test methods or procedures used.)

(C) Results of all tests performed.

(D) All safety distance calculations.

(iii) A copy of the test report shall be maintained on file at the validation organization and/or validating laboratory, and shall be available to OSHA upon request.

(c) Certification/validation reports.

(i) A certification/validation report shall be prepared for each PSDI safety system for which the certification is validated. The certification/validation report shall be signed by the administrative director and the technical director.

(ii) The certification/validation report shall include the following:

(A) Name of manufacturer and catalog or model number of each subsystem or major component.

(B) Results of all tests which serve as the basis for the certification.

(C) All safety distance calculations.

(D) Statement that the safety system conforms with all requirements of the PSDI standard and WAC 296-24-20700, Appendix A.

(iii) A copy of the certification/validation report shall be maintained on file at the validation organization and/or validating laboratory, and shall be available to the public upon request.

(iv) A copy of the certification/validation report shall be submitted to OSHA within thirty days of its completion.

(d) Publications system. The validation organization shall make available upon request a list of PSDI safety systems which have been certified/validated by the program.

(e) Follow-up activities.

(i) The validation organization or validating laboratory shall have a follow-up system for inspecting or testing manufacturer's production of design certified/validated PSDI safety system components and subassemblies where deemed appropriate by the validation organization.

(ii) The validation organization shall notify the appropriate product manufacturer(s) of any reports from employers of point of operation injuries which occur while a press is operated in a PSDI mode.

(f) Records. The validation organization or validating laboratory shall maintain a record of each certification/validation of a PSDI safety system, including manufacturer and/or employer certification documentation, test and working data, test report, certification/validation report, any follow-up inspections or testing, and reports of equipment failures, any reports of accidents involving the equipment, and any other pertinent information. These records shall be available for inspection by OSHA and OSHA state plan offices.

(g) Dispute resolution procedures.

(i) The validation organization shall have a reasonable written procedure for acknowledging and processing appeals or complaints from program participants (manufacturers, producers, suppliers, vendors, and employers) as well as other interested parties (employees or their representatives, safety personnel, government agencies, etc.), concerning certification or validation.

(ii) The validation organization may charge any complainant the reasonable charge for repeating tests needed for the resolution of disputes.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-20720, filed 11/14/88.]

WAC 296-24-20730 Appendix D to WAC 296-24-195. Nonmandatory supplementary information.

(1) This Appendix provides nonmandatory supplementary information and guidelines to assist in the understanding and use of WAC 296-24-19517 to allow presence sensing device initiation (PSDI) of mechanical power presses. Although this Appendix as such is not mandatory, it references sections and requirements which are made mandatory by other parts of the PSDI standard and appendices.

(2) General. OSHA intends that PSDI continue to be prohibited where present state-of-the-art technology will not allow it to be done safely. Only part revolution type mechanical power presses are approved for PSDI. Similarly, only presses with a configuration such that a person's body cannot completely enter the bed area are approved for PSDI.

(3) Brake and clutch.

(a) Flexible steel band brakes do not possess a long-term reliability against structural failure as compared to other types of brakes, and therefore are not acceptable on presses used in the PSDI mode of operation.

(b) Fast and consistent stopping times are important to safety for the PSDI mode of operation. Consistency of braking action is enhanced by high brake torque. The requirement in WAC 296-24-19517 (2)(b) defines a high torque capability which should ensure fast and consistent stopping times.

(c) Brake design parameters important to PSDI are high torque, low moment of inertia, low air volume (if pneumatic) mechanisms, noninterleaving engagement springs, and structural integrity which is enhanced by over-design. The requirement in WAC 296-24-19517 (2)(c) reduces the possibility of significantly increased stopping time if a spring breaks.

(d) As an added precaution to the requirements in WAC 296-24-19517 (2)(c), brake adjustment locking means should be secured. Where brake springs are externally accessible, lock nuts or other means may be provided to reduce the possibility of backing off of the compression nut which holds the springs in place.

(4) Pneumatic systems. Elevated clutch/brake air pressure results in longer stopping time. The requirement in WAC 296-24-19517 (3)(a)(iii) is intended to prevent degradation in stopping speed from higher air pressure. Higher pressures may be permitted, however, to increase clutch torque to free "jammed" dies, provided positive measures are provided to prevent the higher pressure at other times.

(5) Flywheels and bearings. Lubrication of bearings is considered the single greatest deterrent to their failure. The manufacturer's recommended procedures for maintenance and inspection should be closely followed.

(6) Brake monitoring.

(a) The approval of brake monitor adjustments, as required in WAC 296-24-19517 (5)(b), is not considered a recertification, and does not necessarily involve an on-site inspection by a representative of the validation organization. It is expected that the brake monitor adjustment normally could be evaluated on the basis of the effect on the safety system certification/validation documentation retained by the validation organization.

(b) Use of a brake monitor does not eliminate the need for periodic brake inspection and maintenance to reduce the possibility of catastrophic failures.

(7) Cycle control and control systems.

(a) The PSDI set-up/reset means required by WAC 296-24-19517 (6)(d) may be initiated by the actuation of a special momentary pushbutton or by the actuation of a special momentary pushbutton and the initiation of a first stroke with two hand controls.

(b) It would normally be preferable to limit the adjustment of the time required in WAC 296-24-19517 (6)(b) to a maximum of fifteen seconds. However, where an operator must do many operations outside the press, such as lubricating, trimming, deburring, etc., a longer interval up to thirty seconds is permitted.

(c) When a press is equipped for PSDI operation, it is recommended that the presence sensing device be active as a guarding device in other production modes. This should enhance the reliability of the device and ensure that it remains operable.

(d) An acceptable method for interlocking supplemental guards as required by WAC 296-24-19517 (6)(h) would be to incorporate the supplemental guard and the PSDI presence sensing device into a hinged arrangement in which the alignment of the presence sensing device serves, in effect, as the interlock. If the supplemental guards are moved, the presence sensing device would become misaligned and the

press control would be deactivated. No extra microswitches or interlocking sensors would be required.

(e) WAC 296-24-19517 (6)(n) of the standard requires that the control system have provisions for an "inch" operating means; that die-setting not be done in the PSDI mode; and that production not be done in the "inch" mode. It should be noted that the sensing device would be bypassed in the "inch" mode. For that reason, the prohibitions against die-setting in the PSDI mode, and against production in the "inch" mode are cited to emphasize that "inch" operation is of reduced safety and is not compatible with PSDI or other production modes.

(8) Environmental requirements. It is the intent of WAC 296-24-19517(7) that control components be provided with inherent design protection against operating stresses and environmental factors affecting safety and reliability.

(9) Safety system.

(a) The safety system provision continues the concept of WAC 296-24-19505(13) that the probability of two independent failures in the length of time required to make one press cycle is so remote as to be a negligible risk factor in the total array of equipment and human factors. The emphasis is on an integrated total system including all elements affecting point of operation safety.

(b) It should be noted that this does not require redundancy for press components such as structural elements, clutch/brake mechanisms, plates, etc., for which adequate reliability may be achieved by proper design, maintenance, and inspection.

(10) Safeguarding the point of operation.

(a) The intent of WAC 296-24-19517 (9)(c) is to prohibit use of mirrors to "bend" a single light curtain sensing field around corners to cover more than one side of a press. This prohibition is needed to increase the reliability of the presence sensing device in initiating a stroke only when the desired work motion has been completed.

(b) "Object sensitivity" describes the capability of a presence sensing device to detect an object in the sensing field, expressed as the linear measurement of the smallest interruption which can be detected at any point in the field. Minimum object sensitivity describes the largest acceptable size of the interruption in the sensing field. A minimum object sensitivity of one and one-fourth inches (31.75 mm) means that a one and one-fourth inch (31.75 mm) diameter object will be continuously detected at all locations in the sensing field.

(c) In deriving the safety distance required in WAC 296-24-19517 (9)(f), all stopping time measurements should be made with clutch/brake air pressure regulated to the press manufacturer's recommended value for full clutch torque capability. The stopping time measurements should be made with the heaviest upper die that is planned for use in the press. If the press has a slide counterbalance system, it is important that the counterbalance be adjusted correctly for upper die weight according to the manufacturer's instructions. While the brake monitor setting is based on the stopping time it actually measures, i.e., the normal stopping time at the top of the stroke, it is important that the safety distance be computed from the longest stopping time measured at any of the indicated three downstroke stopping positions listed in the explanation of Ts. The use in the formula of twice the stopping time increase, Tm, allowed by the brake monitor for brake wear allows for greater increases in the downstroke stopping time than occur in normal stopping time at the top of the stroke.

(11) Inspection and maintenance. [Reserved]

(12) Safety system certification/validation. Mandatory requirements for certification/validation of the PSDI safety system are provided in WAC 296-24-20700, Appendix A, and 296-24-20720, Appendix C to this standard. Nonmandatory supplementary information and guidelines relating to certification/validation of the PSDI safety system are provided in WAC 296-24-20710, Appendix B to this standard.

[Statutory Authority: Chapter 49.17 RCW. 92-17-022 (Order 92-06), § 296-24-20730, filed 8/10/92, effective 9/10/92; 88-23-054 (Order 88-25), § 296-24-20730, filed 11/14/88.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

PART D
MATERIALS HANDLING AND STORAGE, INCLUDING CRANES, DERRICKS, ETC., AND RIGGING

Handling and storage—Cranes, derricks, etc.

WAC 296-24-215 Materials handling and storage—Handling materials—General.

[Order 73-5, § 296-24-215, filed 5/9/73 and Order 73-4, § 296-24-215, filed 5/7/73.]

WAC 296-24-21501 Use of mechanical equipment. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked.

[Order 73-5, § 296-24-21501, filed 5/9/73 and Order 73-4, § 296-24-21501, filed 5/7/73.]

WAC 296-24-21503 Secure storage. Storage of material shall not create a hazard. Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.

[Order 73-5, § 296-24-21503, filed 5/9/73 and Order 73-4, § 296-24-21503, filed 5/7/73.]

WAC 296-24-21505 Housekeeping. Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

[Order 73-5, § 296-24-21505, filed 5/9/73 and Order 73-4, § 296-24-21505, filed 5/7/73.]

WAC 296-24-21507 Drainage. Proper drainage shall be provided.

[Order 73-5, § 296-24-21507, filed 5/9/73 and Order 73-4, § 296-24-21507, filed 5/7/73.]

WAC 296-24-21509 Clearance limits. Clearance signs to warn of clearance limits shall be provided.

[Order 73-5, § 296-24-21509, filed 5/9/73 and Order 73-4, § 296-24-21509, filed 5/7/73.]

WAC 296-24-21511 Rolling railroad cars. (1) Derail and/or bumper blocks shall be provided on spur railroad tracks where a rolling car could contact other cars being worked, enter a building, work or traffic area. This does not apply to cars being moved by a locomotive, switch engine, donkey engine, or a car puller, but only to cars which are "cut loose." The standard does not apply to "cut loose" cars in railroad yards where trains are made up using gravity feed arrangements.

(2) A clearly audible warning system shall be employed when cars are being moved by car pullers or locomotives, and when the person responsible for the moving does not have assurance that the area is clear, and it is safe to move the car or cars.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-21511, filed 5/15/89, effective 6/30/89; Order 74-27, § 296-24-21511, filed 5/7/74; Order 73-5, § 296-24-21511, filed 5/9/73 and Order 73-4, § 296-24-21511, filed 5/7/73.]

WAC 296-24-21513 Guarding. Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

[Order 73-5, § 296-24-21513, filed 5/9/73 and Order 73-4, § 296-24-21513, filed 5/7/73.]

WAC 296-24-21515 Conveyors. Conveyors shall be constructed operated and maintained in accordance with the provisions of ANSI B 20.1-1957. The following additional provisions shall also apply where applicable.

(1) When the return strand of a conveyor operates within seven feet of the floor there shall be a trough provided of sufficient strength to carry the weight resulting from a broken chain.

(2) If the strands are over a passageway a means shall be provided to catch and support the ends of the chain in the event of a break.

(3) When the working strand of a conveyor crosses within three feet of the floor level in passageways, the trough in which it works shall be bridged the full width of the passageway.

(4) Whenever conveyors pass adjacent to or over working areas or passageways used by personnel, protective guards shall be installed. These guards shall be designed to catch and hold any load or materials which may fall off or become dislodged and injure a worker.

(5) Walking on rolls prohibited. Employees shall not be allowed to walk on the rolls of roller-type conveyors except for emergency.

(6) Guarding shaftway and material entrances of elevator type conveyors. Guards, screens or barricades of sufficient strength and size to prevent material from falling shall be installed on all sides of the shaftway of elevator-type conveyors except at openings where material is loaded or unloaded. Automatic shaftway gates or suitable barriers shall be installed at each floor level where material is loaded or unloaded from the platform.

(7) Emergency conveyor stops. Conveyors shall be provided with an emergency stopping device which can be reached from the conveyor. Such device shall be located near the material entrance to each barker, chipper, saw, or similar type of equipment except where the conveyor leading into such equipment is under constant control of an operator who has full view of the material entrance and is located where the operator cannot possibly fall onto the conveyor.

(8) Safe access to conveyors. Where conveyors are in excess of 7' in height, means shall be provided to safely permit essential inspection and maintenance operations.

(9) Worn parts. Any part showing signs of significant wear shall be inspected carefully and replaced prior to reaching a condition where it may create a hazard.

(10) Replacement of parts. Replacement parts shall be equal to or exceed the manufacturer's specifications.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-21515, filed 7/20/94, effective 9/20/94; Order 74-27, § 296-24-21515, filed 5/7/74; Order 73-5, § 296-24-21515, filed 5/9/73 and Order 73-4, § 296-24-21515, filed 5/7/73.]

WAC 296-24-217 Servicing multi-piece and single-piece rim wheels.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-217, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-217, filed 11/13/80.]

WAC 296-24-21701 Scope. (1) This section applies to the servicing of multi-piece and single-piece rim wheels used on large vehicles such as trucks, tractors, trailers, buses and off-road machines. It does not apply to the servicing of rim wheels used on automobiles, or on pickup trucks and vans utilizing automobile tires or truck tires designated "LT."

(2) This section does not apply to employers and places of employment regulated under the Construction safety standards, chapter 296-155 WAC.

(3) All provisions of this section apply to the servicing of both single-piece rim wheels and multi-piece rim wheels unless designated otherwise.

[Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-24-21701, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21701, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21701, filed 11/13/80.]

WAC 296-24-21703 Definitions. (1) "Barrier" means a fence, wall or other structure or object placed between a single-piece rim wheel and an employee during tire inflation, to contain the rim wheel components in the event of the sudden release of the contained air of the single-piece rim wheel.

(2) "Charts" means the United States Department of Labor, Occupational Safety and Health Administration publications entitled *"Demounting and Mounting Procedures for Truck/Bus Tires"* and *"Multi-Piece Rim Matching Chart,"*

the National Highway Traffic Safety Administration (NHTSA) publications entitled *"Demounting and Mounting Procedures for Truck/Bus Tires"* and *"Multi-Piece Rim Matching Chart,"* or any other poster which contains at least the same instructions, safety precautions and other information contained in the charts that is applicable to the types of wheels being serviced.

(3) "Installing a rim wheel" means the transfer and attachment of an assembled rim wheel onto a vehicle axle hub. "Removing" means the opposite of installing.

(4) "Mounting a tire" means the assembly or putting together of the wheel and tire components to form a rim wheel, including inflation. "Demounting" means the opposite of mounting.

(5) "Multi-piece rim wheel" means the assemblage of a multi-piece wheel with the tire tube and other components.

(6) "Multi-piece wheel" means a vehicle wheel consisting of two or more parts, one of which is a side or locking ring designed to hold the tire on the wheel by interlocking components when the tire is inflated.

(7) "Restraining device" means an apparatus such as a cage, rack, assemblage of bars and other components that will constrain all rim wheel components during an explosive separation of a multi-piece rim wheel, or during the sudden release of the contained air of a single-piece rim wheel.

(8) "Rim manual" means a publication containing instructions from the manufacturer or other qualified organization for correct mounting, demounting, maintenance, and safety precautions peculiar to the type of wheel being serviced.

(9) "Rim wheel" means an assemblage of tire, tube and liner (where appropriate), and wheel components.

(10) "Service" or "servicing" means the mounting and demounting of rim wheels, and related activities such as inflating, deflating, installing, removing, and handling.

(11) "Service area" means that part of an employer's premises used for the servicing of rim wheels, or any other place where an employee services rim wheels.

(12) "Single-piece rim wheel" means the assemblage of single-piece rim wheel with the tire and other components.

(13) "Single-piece wheel" means a vehicle wheel consisting of one part, designed to hold the tire on the wheel when the tire is inflated.

(14) "Trajectory" means any potential path or route that a rim wheel component may travel during an explosive separation, or the sudden release of the pressurized air, or an area at which an airblast from a single-piece rim wheel may be released. The trajectory may deviate from paths which are perpendicular to the assembled position of the rim wheel at the time of separation or explosion. (See Appendix A for examples of trajectories.)

(15) "Wheel" means that portion of a rim wheel which provides the method of attachment of the assembly to the axle of a vehicle and also provides the means to contain the inflated portion of the assembly (i.e., the tire and/or tube).

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-21703, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21703, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21703, filed 11/13/80.]

WAC 296-24-21705 Employee training. (1) The employer shall provide a program to train all employees who service rim wheels in the hazards involved in servicing those rim wheels and the safety procedures to be followed.

(a) The employer shall assure that no employee services any rim wheel unless the employee has been trained and instructed in correct procedures of servicing the type of wheel being serviced, and in the safe operating procedures described in WAC 296-24-21711 and 296-24-21713.

(b) Information to be used in the training program shall include, at a minimum, the applicable data contained in the charts (rim manuals) and the contents of this standard.

(c) Where an employer knows or has reason to believe that any employee is unable to read and understand the charts or rim manual, the employer shall assure that the employee is instructed concerning the contents of the charts and rim manual in a manner which the employee is able to understand.

(2) The employer shall assure that each employee demonstrates and maintains the ability to service rim wheels safely, including performance of the following tasks:

(a) Demounting of tires (including deflation);

(b) Inspection and identification of the rim wheel components;

(c) Mounting of tires (including inflation with a restraining device or other safeguard required by this section);

(d) Use of the restraining device or barrier, and other equipment required by this section;

(e) Handling of rim wheels;

(f) Inflation of the tire when a single-piece rim wheel is mounted on a vehicle;

(g) An understanding of the necessity of standing outside the trajectory both during inflation of the tire and during inspection of the rim wheel following inflation; and

(h) Installation and removal of rim wheels.

(3) The employer shall evaluate each employee's ability to perform these tasks and to service rim wheels safely, and shall provide additional training as necessary to assure that each employee maintains his or her proficiency.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-21705, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-24-21705, filed 1/17/86; 84-17-099 (Order 84-18), § 296-24-21705, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21705, filed 11/13/80.]

WAC 296-24-21707 Tire servicing equipment. (1) The employer shall furnish a restraining device for inflating tires on multi-piece wheels.

(2) The employer shall provide a restraining device or barrier for inflating tires on single-piece wheels unless the rim wheel will be bolted onto a vehicle during inflation.

(3) Restraining devices and barriers shall comply with the following requirements:

(a) Each restraining device or barrier shall have the capacity to withstand the maximum force that would be transferred to it during a rim wheel separation occurring at one hundred fifty percent of the maximum tire specification pressure for the type of rim wheel being serviced.

(b) Restraining devices and barriers shall be capable of preventing the rim wheel components from being thrown

outside or beyond the device or barrier for any rim wheel positioned within or behind the device;

(c) Restraining devices and barriers shall be visually inspected prior to each day's use and after any separation of the rim wheel components or sudden release of contained air. Any restraining device or barrier exhibiting damage such as the following defects shall be immediately removed from service:

(i) Cracks at welds;

(ii) Cracked or broken components;

(iii) Bent or sprung components caused by mishandling, abuse, tire explosion or rim wheel separation;

(iv) Pitting of components due to corrosion; or

(v) Other structural damage which would decrease its effectiveness.

(d) Restraining devices or barriers removed from service shall not be returned to service until they are repaired and reinspected. Restraining devices or barriers requiring structural repair such as component replacement or rewelding shall not be returned to service until they are certified by either the manufacturer or a registered professional engineer as meeting the strength requirements of (a) of this subsection.

(4) The employer shall furnish and assure that an air line assembly consisting of the following components be used for inflating tires:

(a) A clip-on chuck;

(b) An in-line valve with a pressure gauge or a preset-table regulator; and

(c) A sufficient length of hose between the clip-on chuck and the in-line valve (if one is used) to allow the employee to stand outside the trajectory.

(5) Current charts or rim manuals containing instructions for the types of wheels being serviced shall be available in the service area.

(6) The employer shall furnish and assure that only tools recommended in the rim manual for the type of wheel being serviced are used to service rim wheels.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-21707, filed 5/15/89, effective 6/30/89; 88-11-021 (Order 88-04), § 296-24-21707, filed 5/11/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-24-21707, filed 1/17/86; 84-17-099 (Order 84-18), § 296-24-21707, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21707, filed 11/13/80.]

WAC 296-24-21709 Wheel component acceptability. (1) Multi-piece wheel components shall not be interchanged except as provided in the charts, or in the applicable rim manual.

(2) Multi-piece wheel components and single-piece wheels shall be inspected prior to assembly. Any wheel or wheel component which is bent out of shape, pitted from corrosion, broken or cracked shall not be used and shall be marked or tagged unserviceable and removed from the service area. Damaged or leaky valves shall be replaced.

(3) Rim flanges, rim gutters, rings, bead seating surfaces and the bead areas of tires shall be free of any dirt, surface rust, scale or loose or flaked rubber build-up prior to mounting and inflation.

(4) The size (bead diameter and tire/wheel widths) and type of both the tire and the wheel shall be checked for compatibility prior to assembly of the rim wheel.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21709, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21709, filed 11/13/80.]

WAC 296-24-21711 Safe operating procedure—Multi-piece rim wheels. The employer shall establish a safe operating procedure for servicing multi-piece rim wheels and shall assure that employees are instructed in and follow that procedure. The procedure shall include at least the following elements:

(1) Tires shall be completely deflated before demounting by removal of the valve core.

(2) Tires shall be completely deflated by removing the valve core, before a rim wheel is removed from the axle in either of the following situations:

(a) When the tire has been driven underinflated at eighty percent or less of its recommended pressure, or

(b) When there is obvious or suspected damage to the tire or wheel components.

(3) Rubber lubricant shall be applied to bead and rim mating surfaces during assembly of the wheel and inflation of the tire, unless the tire or wheel manufacturer recommends against it.

(4) If a tire on a vehicle is underinflated but has more than eighty percent of the recommended pressure, the tire may be inflated while the rim wheel is on the vehicle provided remote control inflation equipment is used, and no employees remain in the trajectory during inflation.

(5) Tires shall be inflated outside a restraining device only to a pressure sufficient to force the tire bead onto the rim ledge and create an airtight seal with the tire and bead.

(6) Whenever a rim wheel is in a restraining device the employee shall not rest or lean any part of the body or equipment on or against the restraining device.

(7) After tire inflation, the tire and wheel components shall be inspected while still within the restraining device to make sure that they are properly seated and locked. If further adjustment to the tire or wheel components is necessary, the tire shall be deflated by removal of the valve core before the adjustment is made.

(8) No attempt shall be made to correct the seating of side and lock rings by hammering, striking or forcing the components while the tire is pressurized.

(9) Cracked, broken, bent or otherwise damaged rim components shall not be reworked, welded, brazed, or otherwise heated.

(10) Whenever multi-piece rim wheels are being handled, employees shall stay out of the trajectory unless the employer can demonstrate that performance of the servicing makes the employee's presence in the trajectory necessary.

(11) No heat shall be applied to a multi-piece wheel or wheel component.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-21711, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-24-21711, filed 1/17/86; 84-17-099 (Order 84-18), § 296-24-21711, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21711, filed 11/13/80.]

WAC 296-24-21713 Safe operating procedure—Single-piece rim wheels. The employer shall establish a safe operating procedure for servicing single-piece rim wheels and shall assure that employees are instructed in and follow that procedure. The procedure shall include at least the following elements:

(1) Tires shall be completely deflated by removal of the valve core before demounting.

(2) Mounting and demounting of the tire shall be done only from the narrow ledge side of the wheel. Care shall be taken to avoid damaging the tire beads while mounting tires on wheels. Tires shall be mounted only on compatible wheels of matching bead diameter and width.

(3) Nonflammable rubber lubricant shall be applied to bead and wheel mating surfaces before assembly of the rim wheel, unless the tire or wheel manufacturer recommends against the use of any rubber lubricant.

(4) If a tire changing machine is used, the tire shall be inflated only to the minimum pressure necessary to force the tire bead onto the rim ledge while on the tire changing machine.

(5) If a bead expander is used, it shall be removed before the valve core is installed and as soon as the rim wheel becomes airtight (the tire bead slips onto the bead seat).

(6) Tires may be inflated only when contained within a restraining device, positioned behind a barrier or bolted on the vehicle with the lug nuts fully tightened.

(7) Tires shall not be inflated when any flat, solid surface is in the trajectory and within one foot of the sidewall.

(8) Employees shall stay out of the trajectory when inflating a tire.

(9) Tires shall not be inflated to more than the inflation pressure stamped in the sidewall unless a higher pressure is recommended by the manufacturer.

(10) Tires shall not be inflated above the maximum pressure recommended by the manufacturer to seat the tire bead firmly against the rim flange.

(11) No heat shall be applied to a single-piece wheel.

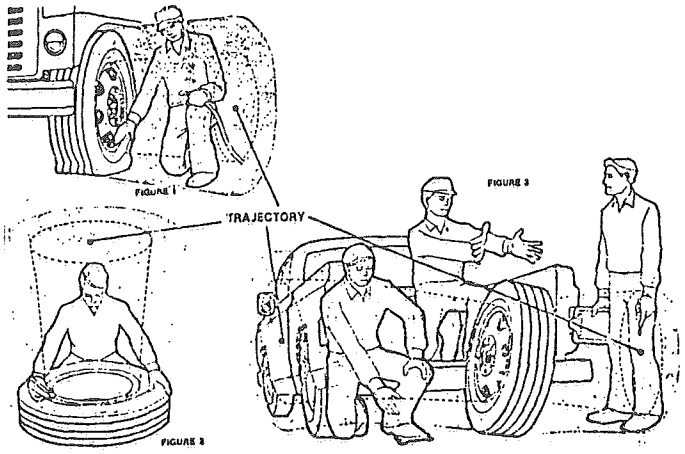
(12) Cracked, broken, bent, or otherwise damaged wheels shall not be reworked, welded, brazed, or otherwise heated.

(13) APPENDIX A TRAJECTORY

WARNING

STAY OUT OF
THE TRAJECTORY AS
INDICATED BY SHADED AREA

Note: Under some circumstances, the trajectory may deviate from its expected path.



(14) Appendix B—Ordering Information for NHTSA charts

Appendix B—Ordering Information for the OSHA charts

OSHA has printed two charts entitled *"Demounting and Mounting Procedures for Truck/Bus Tires"* and *"Multi-Piece Rim Matching Chart,"* as part of a continuing campaign to reduce accidents among employees who service large vehicle rim wheels.

Reprints of the charts are available through the Occupational Safety and Health Administration (OSHA) area offices. The address and telephone number of the nearest OSHA area office can be obtained by looking in the local telephone directory under U.S. Government, U.S. Department of Labor, Occupational Safety and Health Administration. Single copies are available without charge.

Individuals, establishments and other organizations desiring multiple copies of these charts may order them from the Publications Office, U.S. Department of Labor, Room N3101, Washington, D.C. 20210. Telephone: (202) 523-9667.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-21713, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21713, filed 8/21/84.]

WAC 296-24-230 Powered industrial trucks.

[Order 73-5, § 296-24-230, filed 5/9/73 and Order 73-4, § 296-24-230, filed 5/7/73.]

WAC 296-24-23001 Definition. These definitions are applicable to all sections of this chapter containing WAC 296-24-230 in the section number. As used in those sections, the term, "approved truck" or "approved industrial truck" means a truck that is listed or approved for fire safety purposes for the intended use by a nationally recognized testing laboratory, using nationally recognized testing standards. Refer to WAC 296-24-58501(19) for definition of listed, and to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-23001, filed 11/14/88; Order 74-27, § 296-24-23001, filed 5/7/74; Order 73-5, § 296-24-23001, filed 5/9/73 and Order 73-4, § 296-24-23001, filed 5/7/73.]

WAC 296-24-23003 General requirements. These requirements are applicable to all sections of this chapter containing the WAC 296-24-230 in the section number.

(1) This section contains safety requirements relating to fire protection design, maintenance, and use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks, powered by electric motors or internal combustion engines. This section does not apply to compressed gas-operated industrial trucks, nor to farm vehicles, to vehicles intended primarily for earth moving or over-the-road hauling.

(2) All new powered industrial trucks acquired and used by an employer after the effective date of these standards shall meet the design and construction requirements for powered industrial trucks established in the "American National Standard for Powered Industrial Trucks, Part II, ANSI B56.1-1969," except for vehicles intended primarily for earth moving or over-the-road hauling.

(3) Approved trucks shall bear a label or some other identifying mark indicating approval by the testing laboratory as meeting the specifications and requirements of ANSI B56.1-1969.

(4) Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without manufacturers prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

(5) If the truck is equipped with front-end attachments other than factory installed attachments, it shall be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered.

(6) The user shall see that all nameplates and markings are in place and are maintained in a legible condition.

[Order 76-6, § 296-24-23003, filed 3/1/76; Order 74-27, § 296-24-23003, filed 5/7/74; Order 73-5 § 296-24-23003, filed 5/9/73 and Order 73-4, § 296-24-23003, filed 5/7/73.]

WAC 296-24-23005 Designations. For the purpose of this standard there are eleven different designations of industrial trucks or tractors as follows: D, DS, DY, E, ES, EE, EX, G, GS, LP, and LPS.

(1) The D designated units are units similar to the G units except that they are diesel engine powered instead of gasoline engine powered.

(2) The DS designated units are diesel powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. They may be used in some locations where a D unit may not be considered suitable.

(3) The DY designated units are diesel powered units that have all the safeguards of the DS units and in addition do not have any electrical equipment, including the ignition, and are equipped with temperature limitation features.

(4) The E designated units are electrically powered units that have minimum acceptable safeguards against inherent fire hazards.

(5) The ES designated units are electrically powered units that, in addition to all of the requirements for the E units, are provided with additional safeguards to the electrical system to prevent emission of hazardous sparks and to limit surface temperatures. They may be used in some locations where the use of an E unit may not be considered suitable.

(6) The EE designated units are electrically powered units that have, in addition to all of the requirements for the E and ES units, the electric motors and all other electrical equipment completely enclosed. In certain locations the EE unit may be used where the use of an E and ES unit may not be considered suitable.

(7) The EX designated units are electrically powered units that differ from E, ES, or EE units in that the electrical fittings and equipment are so designed, constructed and assembled that the units may be used in certain atmospheres containing flammable vapors or dusts.

(8) The G designated units are gasoline powered units having minimum acceptable safeguards against inherent fire hazards.

(9) The GS designated units are gasoline powered units that are provided with additional safeguards to the exhaust, fuel, and electrical systems. They may be used in some locations where the use of a G unit may not be considered suitable.

(10) The LP designated unit is similar to the G unit except that liquefied petroleum gas is used for fuel instead of gasoline.

(11) The LPS designated units are liquefied petroleum gas powered units that are provided with additional safeguards to the exhaust, fuel, and electrical systems. They may be used in some locations where the use of an LP unit may not be considered suitable.

(12) The atmosphere or location shall have been classified as to whether it is hazardous or nonhazardous prior to the consideration of industrial trucks being used therein and the type of industrial truck required shall be as provided in WAC 296-24-23009 for such location.

[Order 73-5, § 296-24-23005, filed 5/9/73 and Order 73-4, § 296-24-23005, filed 5/7/73.]

WAC 296-24-23007 Designated locations. (1) The industrial trucks specified under (2) of this section are the minimum types required but industrial trucks having greater safeguards may be used if desired.

(2) For specific areas of use see Table N-1 following this section which tabulates the information contained in this section. References are to the corresponding classification as used in chapter 296-24 WAC Part L.

(a) Power-operated industrial trucks shall not be used in atmospheres containing hazardous concentration of acetylene, butadiene, ethylene oxide, hydrogen (or gases or vapors equivalent in hazard to hydrogen, such as manufactured gas), propylene oxide, acetaldehyde, cyclopropane, diethyl ether, ethylene, isoprene, or unsymmetrical dimenthyl hydrazine (UDMH).

(i) Power-operated industrial trucks shall not be used in atmospheres containing hazardous concentrations of metal dust, including aluminum, magnesium, and their commercial alloys, other metals of similarly hazardous characteristics, or in atmospheres containing carbon black, coal or coke dust except approved power-operated industrial trucks designated as EX may be used in such atmospheres.

(ii) In atmospheres where dust of magnesium, aluminum or aluminum bronze may be present, fuses, switches, motor

controllers, and circuit breakers of trucks shall have enclosures specifically approved for such locations.

(b) Only approved power-operated industrial trucks designated as EX may be used in atmospheres containing acetone, acrylonitrile, alcohol, ammonia, benzine, bensol, butane, ethylene dichloride, gasoline, hexane, lacquer solvent vapors, naphtha, natural gas, propane, propylene, styrene, vinyl acetate, vinyl chloride, or xylenes in quantities sufficient to produce explosive or ignitable mixtures and where such concentrations of these gases or vapors exist continuously, intermittently or periodically under normal operating conditions or may exist frequently because of repair, maintenance operations, leakage, breakdown or faulty operation of equipment.

(c) Power-operated industrial trucks designated as DY, EE, or EX may be used in locations where volatile flammable liquids or flammable gases are handled, processed or used, but in which the hazardous liquids, vapors or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in the case of abnormal operation of equipment; also in locations in which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation but which might become hazardous through failure or abnormal operation of the ventilating equipment; or in locations which are adjacent to Class I, Division 1 locations, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clear air, and effective safeguards against ventilation failure are provided.

(d) In locations used for the storage of hazardous liquids in sealed containers or liquefied or compressed gases in containers, approved power-operated industrial trucks designated as DS, ES, GS, or LPS may be used. This classification includes locations where volatile flammable liquids or flammable gases or vapors are used, but which, would become hazardous only in case of an accident or of some unusual operation condition. The quantity of hazardous material that might escape in case of accident, the adequacy of ventilating equipment, the total area involved, and the record of the industry or business with respect to explosions or fires are all factors that should receive consideration in determining whether or not the DS or DY, ES, EE, GS, LPS designated truck possesses sufficient safeguards for the location. Piping without valves, checks, meters and similar devices would not ordinarily be deemed to introduce a hazardous condition even though used for hazardous liquids or gases. Locations used for the storage of hazardous liquids or of liquefied or compressed gases in sealed containers would not normally be considered hazardous unless subject to other hazardous conditions also.

(i) Only approved power-operated industrial trucks designated as EX shall be used in atmospheres in which combustible dust is or may be in suspension continuously, intermittently, or periodically under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures, or where mechanical failure or abnormal operation of machinery or equipment might cause such mixtures to be produced.

(ii) The EX classification usually includes the working areas of grain handling and storage plants, room containing grinders or pulverizers, cleaners, graders, scalpers, open conveyors or spouts, open bins or hoppers, mixers, or blenders, automatic or hopper scales, packing machinery, elevator heads and boots, stock distributors, dust and stock collectors (except all-metal collectors vented to the outside), and all similar dust producing machinery and equipment in grain processing plants, starch plants, sugar pulverizing plants, malting plants, hay grinding plants, and other occupancies of similar nature; coal pulverizing plants (except where the pulverizing equipment is essentially dust tight); all working areas where metal dusts and powders are produced, processed, handled, packed, or stored (except in tight containers); and other similar locations where combustible dust may, under normal operating conditions, be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

(e) Only approved power-operated industrial trucks designated as DY, EE, or EX shall be used in atmospheres in which combustible dust will not normally be in suspension in the air or will not be likely to be thrown into suspension by the normal operation of equipment or apparatus in quantities sufficient to produce explosive or ignitable mixtures but where deposits or accumulations of such dust may be ignited by arcs or sparks originating in the truck.

(f) Only approved power-operated industrial trucks designated as DY, EE, or EX shall be used in locations which are hazardous because of the presence of easily ignitible fibers or flyings but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures.

(g) Only approved power-operated industrial trucks designated as DS, DY, ES, EE, EX, GS, or LPS shall be used in locations where easily ignitible fibers are stored or handled including outside storage, but are not being processed or manufactured. Industrial trucks designated as E, which have been previously used in these locations may be continued in use.

(h) On piers and wharves handling general cargo, any approved power-operated industrial truck designated as Type D, E, G, or LP may be used, or trucks which conform to the requirements for these types may be used.

(i) If storage warehouses and outside storage locations are hazardous only the approved power-operated industrial truck specified for such locations in WAC 296-24-23007(2) shall be used. If not classified as hazardous, any approved power-operated industrial truck designated as Type D, E, G, or LP may be used, or trucks which conform to the requirements for these types may be used.

(j) If general industrial or commercial properties are hazardous, only approved power-operated industrial trucks specified for such locations in this WAC 296-24-23007 shall be used. If not classified as hazardous, any approved power-operated industrial truck designated as Type D, E, G, or LP may be used, or trucks which conform to the requirements of these types may be used.

TABLE N-1

SUMMARY TABLE ON USE OF INDUSTRIAL TRUCKS IN VARIOUS LOCATIONS

(TABLE N-1: Part 1—Unclassified & Class I)

Classes	Unclassified	Class I locations			
Description of classes	Locations not possessing atmospheres as described in other columns.	Locations in which flammable gases or vapors are, or may be, present in the air in quantities sufficient to produce explosive or ignitible mixtures.			
Groups in classes	None	A	B	C	D
Examples of locations or atmospheres in classes and groups	Piers and wharves inside and outside general storage general industrial or commercial properties	Acetylene	Hydrogen	Ethyl ether	Gasoline Naphtha Alcohols Acetone Lacquer solvent Benzene
		1		2	
Divisions (nature of hazardous conditions)	None	Above condition exists continuously, intermittently, or periodically under normal operating conditions.		Above condition may occur accidentally as due to a puncture of a storage drum.	

(TABLE N-1: Part 2—Class II & III)

Classes	Class II locations		Class III locations	
Description of classes	Locations which are hazardous because of the presence of combustible dust.		Locations where easily ignitible fibers or flyings are present but not likely to be in suspension in quantities sufficient to produce ignitible mixtures.	
Groups in classes	E	F	G	None
Examples of locations or atmospheres in classes and groups	Metal dust	Carbon black Coal dust Coke dust	Grain dust Flour dust Starch dust Organic dust	Baled waste, cocoa fiber, cotton, excelsior, hemp, istle, jute, kapok, oakum, sisal, Spanish moss, synthetic fibers, tow.
	1	2	1	2
Divisions (nature of hazardous conditions)	Explosive mixture may be present under normal operating conditions, or where failure of equipment may cause the condition to exist simultaneously with arcing or sparking of electrical equipment, or where dusts of an electrically conducting nature may be present.	Explosive mixture not normally present, but where deposits of dust may cause heat rise in electrical equipment, or where such deposits may be ignited by arcs or sparks from electrical equipment.	Locations in which easily ignitible fibers or materials producing combustible flyings are handled, manufactured, or used.	Locations in which easily ignitible fibers are stored or handled (except in the process of manufacture).

Authorized uses of trucks by types in groups of classes and divisions

(TABLE N-1: Part 3—Groups in classes, None—A, B, C, and D)

Groups in classes	None	A	B	C	D	A	B	C	D
Types of trucks authorized:									
Diesel:									
Type D	D**								
Type DS									DS
Type DY									DY
Electric:									
Type E	E**								
Type ES									ES
Type EE									EE
Type EX				EX					EX
Gasoline:									
Type G	G**								
Type GS									GS
LP-Gas:									
Type LP	LP**								
Type LPS									LPS
Paragraph Ref. in No. 505	210.211	201(a)		203 (a)		209(a)			204 (a), (b)

** Trucks conforming to these types may also be used—see WAC 296-24-23007 (2)(h) and (j).
References in parentheses are to the corresponding classification as used in the National Electrical Code (NFPA No. 70, ANSI Standard CI-1968) for the convenience of persons familiar with those classifications.

(TABLE N-1: Part 4—Groups in class—E, F, G, and None)

Groups in classes	E	F	G	E	F	G	None	None
Types of trucks authorized:								
Diesel:								
Type D								
Type DS				DS				DS
Type DY				DY			DY	DY
Electric:								
Type E								E
Type ES				ES				ES
Type EE				EE			EE	EE
Type EX	EX		EX	EX			EX	EX
Gasoline:								
Type G								
Type GS				GS				GS

LP-Gas:						
Type LP						
Type LPS				LPS		LPS
Paragraph Ref. in No. 505	202(a)	205(a)	209(a)	206 (a), (b)	207(a)	208(a)

** Trucks conforming to these types may also be used — see WAC 296-24-23007 (2)(h) and (j).
References in parentheses are to the corresponding classification as used in the National Electrical Code (NFPA No. 70, ANSI Standard CI-1968) for the convenience of persons familiar with those classifications.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-23007, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-23007, filed 5/9/73 and Order 73-4, § 296-24-23007, filed 5/7/73.]

WAC 296-24-23009 Converted industrial trucks. Power-operated industrial trucks that have been originally approved for the use of gasoline for fuel, when converted to the use of liquefied petroleum gas fuel in accordance with WAC 296-24-23035, may be used in those locations where G, GS or LP, and LPS designated trucks have been specified in the preceding sections.

[Order 73-5, § 296-24-23009, filed 5/9/73 and Order 73-4, § 296-24-23009, filed 5/7/73.]

WAC 296-24-23011 Safety guards. (1) High lift rider trucks shall be fitted with an overhead guard manufactured in accordance with WAC 296-24-23003(2), unless operating conditions do not permit.

(2) If the type of load presents a hazard, the user shall equip fork trucks with a vertical load backrest extension manufactured in accordance with WAC 296-24-23003(2).

[Order 73-5, § 296-24-23011, filed 5/9/73 and Order 73-4, § 296-24-23011, filed 5/7/73.]

WAC 296-24-23013 Fuel handling and storage. (1) The storage and handling of liquid fuels such as gasoline and diesel fuel shall be in accordance with NFPA Flammable and Combustible Liquids Code (NFPA No. 30-1969).

(2) The storage and handling of liquefied petroleum gas fuel shall be in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58-1969).

[Order 73-5, § 296-24-23013, filed 5/9/73 and Order 73-4, § 296-24-23013, filed 5/7/73.]

WAC 296-24-23015 Changing and charging storage batteries. (1) Battery charging installations shall be located in areas designated for that purpose.

(2) Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.

(3) When racks are used for support of batteries, they should be made of materials nonconductive to spark generation or be coated or covered to achieve this objective.

(4) A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.

(5) Reinstalled batteries shall be properly positioned and secured in the truck.

(6) A carboy tilter or siphon shall be provided for handling electrolyte.

(7) When charging batteries, acid shall be poured into water; water shall not be poured into acid.

(8) Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.

(9) When charging batteries, the vent caps should be kept in place to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.

(10) Smoking shall be prohibited in the charging area.

(11) Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.

(12) Tools and other metallic objects shall be kept away from the top of uncovered batteries.

[Order 73-5, § 296-24-23015, filed 5/9/73 and Order 73-4, § 296-24-23015, filed 5/7/73.]

WAC 296-24-23017 Lighting for operating areas. (1) Controlled lighting of adequate intensity should be provided in operating areas. (See American National Standard Practice for Industrial Lighting, All.1-1965 (R1970).)

(2) Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck.

[Order 73-5, § 296-24-23017, filed 5/9/73 and Order 73-4, § 296-24-23017, filed 5/7/73.]

WAC 296-24-23019 Control of noxious gases and fumes. (1) Concentration levels of carbon monoxide gas created by powered industrial truck operations shall not exceed the levels specified in WAC 296-62-075 (general occupational health standards).

(2) Questions concerning degree of concentration and methods of sampling to ascertain the conditions should be referred to a qualified industrial hygienist.

[Order 73-5, § 296-24-23019, filed 5/9/73 and Order 73-4, § 296-24-23019, filed 5/7/73.]

WAC 296-24-23021 Dockboards (bridge plates). (1) Portable and powered dockboards shall be strong enough to carry the load imposed on them.

(2) Portable dockboards shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping.

(3) Powered dockboards shall be designed and constructed in accordance with Commercial Standard CS202-56 (1956) "Industrial Lifts and Hinged Loading Ramps" published by the U.S. Department of Commerce.

(4) Handholds, or other effective means, shall be provided on portable dockboards to permit safe handling.

(5) Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

[Order 73-5, § 296-24-23021, filed 5/9/73 and Order 73-4, § 296-24-23021, filed 5/7/73.]

WAC 296-24-23023 Trucks and railroad cars. (1) The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from

rolling while they are boarded with powered industrial trucks.

(2) Wheel stops or other recognized positive protection shall be provided to prevent railroad cars from moving during loading or unloading operations.

(3) Fixed jacks may be necessary to support a semitrailer and prevent up-ending during the loading or unloading when the trailer is not coupled to a tractor.

(4) Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

(5) Trucks/trailers equipped with a rear-end protection device to prevent cars from being wedged underneath the rear end during a collision, may facilitate the use of a mechanical means to secure the truck/trailer to the loading dock attaching to the device. Wheel chocks will not be required when the following provisions are utilized:

(a) A positive mechanical means to secure trucks or trailers is permitted, provided that the system is installed and used in a manner that effectively prevents movement away from the dock during loading, unloading, and boarding by handtrucks or powered industrial trucks.

(b) All of the mechanical equipment shall be installed, maintained, and used as recommended by the manufacturer.

(c) Any damaged mechanical equipment shall be removed from service immediately and shall not be used as a means of complying with the requirements to secure trucks and trailers.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-23023, filed 1/10/91, effective 2/12/91; Order 73-5, § 296-24-23023, filed 5/9/73 and Order 73-4, § 296-24-23023, filed 5/7/73.]

WAC 296-24-23025 Operator training. Only trained and authorized operators shall be permitted to operate a powered industrial truck. Methods shall be devised to train operators in the safe operation of powered industrial trucks.

[Order 73-5, § 296-24-23025, filed 5/9/73 and Order 73-4, § 296-24-23025, filed 5/7/73.]

WAC 296-24-23027 Truck operations. (1) Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.

(2) No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.

(3) Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.

(4) The employer shall prohibit arms or legs from being placed between the uprights of the mast or outside the running lines of the truck.

(5) When leaving a powered industrial truck unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels blocked if the truck is parked on an incline.

(a) A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle, which remains in view, or whenever the operator leaves the vehicle and it is not in view.

(b) When the operator of an industrial truck is dismounted and within 25 feet of the truck, still in view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.

(6) A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight car doors unless the truck is using an approved device specifically designed to open and close doors.

(a) The design of the door opening or closing device shall require the force applied by the device to the door to be in a direction parallel with the door travel.

(b) The truck operator shall be trained in the use of the door opening or closing device and keep the operation in full view while opening or closing.

(c) Employees or other persons will stand clear while the door is being moved with a device.

(7) Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semitrailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven onto. Mechanical means may be utilized to secure trucks/trailers to loading docks in lieu of wheel chocks to prevent movement (reference WAC 296-24-23023).

(8) There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.

(9) An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.

(10) A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

(11) Only approved industrial trucks shall be used in hazardous locations.

(12) Whenever a truck is equipped with vertical only, or vertical and horizontal controls elevatable with the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of personnel being elevated.

(a) Use of a safety platform firmly secured to the lifting carriage and/or forks.

(b) Means shall be provided whereby personnel on the platform can shut off power to the truck.

(c) Such protection from falling objects as indicated necessary by the operating conditions shall be provided.

(13) Using forklifts as elevated work platforms. A platform or structure built specifically for hoisting persons may be used providing the following requirements are complied with:

(a) The structure must be securely attached to the forks and shall have standard guardrails and toeboards installed on all sides.

(b) The hydraulic system shall be so designed that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system. Forklifts used for elevating work platforms shall be identified that they are so designed.

(c) A safety strap shall be installed or the control lever shall be locked to prevent the boom from tilting.

(d) An operator shall attend the lift equipment while workers are on the platform.

(e) The operator shall be in the normal operating position while raising or lowering the platform.

(f) The vehicle shall not travel from point to point while workers are on the platform except that inching or maneuvering at very slow speed is permissible.

(g) The area between workers on the platform and the mast shall be adequately guarded to prevent contact with chains or other shear points.

(14) Fire aisles, access to stairways, and fire equipment shall be kept clear.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-23027, filed 1/10/91, effective 2/12/91; Order 74-27, § 296-24-23027, filed 5/7/74; Order 73-5, § 296-24-23027, filed 5/9/73 and Order 73-4, § 296-24-23027, filed 5/7/73.]

WAC 296-24-23029 Traveling. (1) All traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.

(2) The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.

(3) Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.

(4) The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

(5) Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

(6) The driver shall be required to look in the direction of, and keep a clear view of the path of travel.

(7) Grades shall be ascended or descended slowly.

(a) When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.

(b) Unloaded trucks should be operated on all grades with the load engaging means downgrade.

(c) On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.

(8) Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

(9) Stunt driving and horseplay shall not be permitted.

(10) The driver shall be required to slow down for wet and slippery floors.

(11) Dockboard or bridgeplates, shall be properly secured before they are driven over. Dockboard or bridgeplates shall be driven over carefully and slowly and their rated capacity never exceeded.

(12) Elevators shall be approached slowly, and then entered squarely after the elevator car is properly leveled. Once on the elevator, the controls shall be neutralized, power shut off, and the brakes set.

(13) Motorized hand trucks must enter elevator or other confined areas with load end forward.

(14) Running over loose objects on the roadway surface shall be avoided.

(15) While negotiating turns, speed shall be reduced to a safe level, by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

[Order 73-5, § 296-24-23029, filed 5/9/73 and Order 73-4, § 296-24-23029, filed 5/7/73.]

WAC 296-24-23031 Loading. (1) Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.

(2) Only loads within the rated capacity of the truck shall be handled.

(3) The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.

(4) When attachments are used, particular care should be taken in securing, manipulating, positioning, and transporting the load. Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.

(5) A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.

(6) Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

[Order 73-5, § 296-24-23031, filed 5/9/73 and Order 73-4, § 296-24-23031, filed 5/7/73.]

WAC 296-24-23033 Operation of the truck. (1) If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

(2) Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

(3) Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.

(4) No truck shall be operated with a leak in the fuel system until the leak has been corrected.

(5) Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

[Order 73-5, § 296-24-23033, filed 5/9/73 and Order 73-4, § 296-24-23033, filed 5/7/73.]

WAC 296-24-23035 Maintenance of industrial trucks. (1) Any power operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.

(2) No repairs shall be made in Classes I, II, and III locations.

(3) Those repairs to the fuel and ignition systems of industrial trucks which involve fire hazards shall be conducted only in locations designated for such repairs.

(4) Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.

(5) All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.

(6) Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts, except as provided in WAC 296-24-23003. Additional counterweighting of fork trucks shall not be done unless approved by the truck manufacturer.

(7) Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily.

Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected.

(8) Water mufflers shall be filled daily or as frequently as is necessary to prevent depletion of the supply of water below 75 percent of the filled capacity. Vehicles with mufflers having screens or other parts that may become clogged shall not be operated while such screens or parts are clogged. Any vehicle that emits hazardous sparks or flames from the exhaust system shall immediately be removed from service, and not returned to service until the cause for the emission of such sparks and flames has been eliminated.

(9) When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle shall be removed from service and not returned to service until the cause for such overheating has been eliminated.

(10) Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100°F.) solvents shall not be used. High flash point (at or above 100°F.) solvents may be used. Precautions regarding toxicity, ventilation, and fire hazard shall be consonant with the agent or solvent used.

(11) Where it is necessary to use antifreeze in the engine cooling system, only those products having glycol base shall be used.

(12) Industrial trucks originally approved for the use of gasoline for fuel may be converted to liquefied petroleum gas fuel provided the complete conversion results in a truck which embodies the features specified for LP or LPS designated trucks. Such conversion equipment shall be approved. The description of the component parts of this conversion system and the recommended method of installation on specific trucks are contained in the "listed by report."

[Order 73-5, § 296-24-23035, filed 5/9/73 and Order 73-4, § 296-24-23035, filed 5/7/73.]

WAC 296-24-233 Motor vehicle trucks and trailers. (1) Only qualified drivers shall be permitted to operate motor vehicle trucks, and shall possess a current motor vehicle operator's license.

(2) Motor vehicle trucks must be equipped with brakes which will safely hold the maximum load on maximum grades.

(3) Trailers must be equipped with good, workable air brakes, or other type of brake equipment approved by the state commission on equipment. Air must be cut into the trailer brake system at the time that the trailer is coupled to the truck.

(4) Brakes on trucks and trailers must be tested before equipment descends a steep grade.

(5) Truck drivers shall at all times operate equipment at a safe speed for roadway conditions.

(6) Safe methods of loading and unloading motor vehicle trucks and trailers shall be observed at all times.

(7) To prevent accidents during the backing of trucks where vision is obstructed, a signalperson shall be stationed at a point giving a clear view of the rear of the truck and the operator of the truck at all times.

(8) Truck drivers shall sound their horn before starting to back, and shall sound the horn intermittently during the entire backing operation.

(9) Dump trucks shall have a device installed on the frame which will be of sufficient strength to hold the bed in the raised position when employees are working in an exposed position underneath.

(10) All parts and accessories of trucks and trailers shall be kept in good repair and safe condition. Tires worn beyond the point of safety shall not be used.

(11) All motor vehicle trucks and trailers shall be equipped with standard lights, horn, flags, flares, etc., to conform to the state of Washington motor vehicles laws.

(12) All loads transported on trucks and/or trucks and trailers shall be properly secured and distributed, and limited to a safe operating load for the condition of the roadway, and the capacity of the bridges, trestles, and other structures.

(13) Precautions to be taken while inflating tires. Unmounted split-rim wheels shall be placed in a safety cage or other device shall be used which will prevent a split-rim from striking the worker if it should dislodge while the tire is being inflated.

(14) Trucks parked on an incline shall have the steered wheels turned into the curb and shall have at least one "driver" wheel chocked on each side, independent of the braking system.

(15) Motor vehicles used regularly for transportation of workers shall be well equipped, covered against the weather and maintained in good mechanical condition at all times.

(a) Seats, which shall be properly secured, shall be provided in each vehicle to accommodate the total number of workers normally transported. Where it becomes necessary under emergency conditions to transport more workers than the seating capacity of the truck will accommodate, all workers not having seats shall ride within the vehicle. Under no circumstances shall workers ride on fenders or running boards of the vehicle.

(b) No workers shall ride in or on any vehicle with legs hanging over the end or sides. A safety bar should be placed across the rear opening of all trucks carrying workers which are not equipped with tail gates.

(c) Vehicles shall be equipped with compartments or screen of such strength to retain sharp tools which could present a hazard to employees being transported.

(d) All dump-trucks used to transport workers shall be equipped with an adequate safety chain or locking device which will eliminate the possibility of the body of the truck being raised while workers are riding in the truck.

(e) Explosives or highly inflammable materials shall not be carried in or on any vehicle while it is used to transport workers.

(f) Exhaust systems shall be installed and maintained in proper condition, and shall be so designed as to eliminate the exposure of the workers to the exhaust gases and fumes.

(g)(i) The number of persons allowed in the cab of a single bench seat crew truck shall not exceed two in addition to the driver. Crew trucks designed and constructed with additional seating capacity behind the normal driver's seat may carry additional passengers in the seating area behind the driver's seat. Crew trucks with bucket-type seats may carry only the number of passengers for which the bucket seats are provided. In any seating arrangement, the driver must be able to maintain full freedom of motion. Additionally, the number of passengers or seating arrangement shall not obstruct the driver's normal vision.

(ii) When trucks are designed and constructed with larger than normal seating capacity in the front seat, the total number of passengers may be increased provided that the operator's vision and control functions, as required in (15)(g)(i), are maintained.

(h) All enclosed crew trucks shall have an emergency exit in addition to the regular entrance.

(i) Trucks used for hauling gravel shall not be used as crew trucks unless they are equipped as follows:

(i) Steps in proper place or places.

(ii) Wooden floors.

(iii) Seats are securely fastened.

(iv) Truck is properly covered.

(v) All other general regulations covering crew trucks are fully conformed with.

(j) Half-ton vehicles shall haul not more than six persons including driver. Three-quarter-ton vehicles shall haul not more than eight persons including driver.

(k) All vehicles carrying crews shall be equipped with stretchers and fire extinguishers.

(l) No heating units in which there are open fires shall be used in vehicles transporting crews.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-233, filed 7/20/94, effective 9/20/94; Order 76-29, § 296-24-233, filed 9/30/76; Order 76-6, § 296-24-233, filed 3/1/76; Order 75-11, § 296-24-233, filed 4/4/75; Order 74-27, § 296-24-233, filed 5/7/74; Order 73-5, § 296-24-233, filed 5/9/73 and Order 73-4, § 296-24-233, filed 5/7/73.]

WAC 296-24-235 Overhead and gantry cranes.

[Order 73-5, § 296-24-235, filed 5/9/73 and Order 73-4, § 296-24-235, filed 5/7/73.]

WAC 296-24-23501 Definitions. (1) A "crane" is a machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism and integral part of the machine. Cranes whether fixed or mobile are driven manually or by power.

(2) An "automatic crane" is a crane which when activated operates through a preset cycle or cycles.

(3) A "cab-operated crane" is a crane controlled by an operator in a cab located on the bridge or trolley.

(4) "Cantilever gantry crane" means a gantry or semigantry crane in which the bridge girders or trusses extend transversely beyond the crane runway on one or both sides.

(5) "Floor-operated crane" means a crane which is pendant or nonconductive rope controlled by an operator on the floor or an independent platform.

(6) "Gantry crane" means a crane similar to an overhead crane except that the bridge for carrying the trolley or trolleys is rigidly supported on two or more legs running on fixed rails or other runway.

(7) "Hot metal handling crane" means an overhead crane used for transporting or pouring molten material.

(8) "Overhead crane" means a crane with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure.

(9) "Power-operated crane" means a crane whose mechanism is driven by electric, air, hydraulic, or internal combustion means.

(10) A "pulpit-operated crane" is a crane operated from a fixed operator station not attached to the crane.

(11) A "remote-operated crane" is a crane controlled by an operator not in a pulpit or in the cab attached to the crane, by any method other than pendant or rope control.

(12) A "semigantry crane" is a gantry crane with one end of the bridge rigidly supported on one or more legs that run on a fixed rail or runway, the other end of the bridge being supported by a truck running on an elevated rail or runway.

(13) "Storage bridge crane" means a gantry type crane of long span usually used for bulk storage of material; the bridge girders or trusses are rigidly or nonrigidly supported on one or more legs. It may have one or more fixed or hinged cantilever ends.

(14) "Wall crane" means a crane having a jib with or without trolley and supported from a side wall or line of columns of a building. It is a traveling type and operates on a runway attached to the side wall or columns.

(15) "Appointed" means assigned specific responsibilities by the employer or the employer's representative.

(16) "ANSI" means the American National Standards Institute.

(17) An "auxiliary hoist" is a supplemental hoisting unit of lighter capacity and usually higher speed than provided for the main hoist.

(18) A "brake" is a device used for retarding or stopping motion by friction or power means.

(19) A "drag brake" is a brake which provides retarding force without external control.

(20) A "holding brake" is a brake that automatically prevents motion when power is off.

(21) "Bridge" means that part of a crane consisting of girders, trucks, end ties, footwalks, and drive mechanism which carries the trolley or trollies.

(22) "Bridge travel" means the crane movement in a direction parallel to the crane runway.

(23) A "bumper" (buffer) is an energy absorbing device for reducing impact when a moving crane or trolley reaches

the end of its permitted travel; or when two moving cranes or trolleys come in contact.

(24) The "cab" is the operator's compartment on a crane.

(25) "Clearance" means the distance from any part of the crane to a point of the nearest obstruction.

(26) "Collectors" (current) are contacting devices for collecting current from runway or bridge conductors.

(27) "Conductors, bridge" are the electrical conductors located along the bridge structure of a crane to provide power to the trolley.

(28) "Conductors, runway" (main) are the electrical conductors located along a crane runway to provide power to the crane.

(29) The "control braking means" is a method of controlling crane motor speed when in an overhauling condition.

(30) "Countertorque" means a method of control by which the power to the motor is reversed to develop torque in the opposite direction.

(31) "Dynamic" means a method of controlling crane motor speeds when in the overhauling condition to provide a retarding force.

(32) "Regenerative" means a form of dynamic braking in which the electrical energy generated is fed back into the power system.

(33) "Mechanical" means a method of control by friction.

(34) "Controller, spring return" means a controller which when released will return automatically to a neutral position.

(35) "Designated" means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

(36) A "drift point" means a point on a travel motion controller which releases the brake while the motor is not energized. This allows for coasting before the brake is set.

(37) The "drum" is the cylindrical member around which the ropes are wound for raising or lowering the load.

(38) An "equalizer" is a device which compensates for unequal length or stretch of a rope.

(39) "Exposed" means capable of being contacted inadvertently. Applied to hazardous objects not adequately guarded or isolated.

(40) "Fail-safe" means a provision designed to automatically stop or safely control any motion in which a malfunction occurs.

(41) "Footwalk" means the walkway with handrail, attached to the bridge or trolley for access purposes.

(42) A "hoist" is an apparatus which may be a part of a crane, exerting a force for lifting or lowering.

(43) "Hoist chain" means the load bearing chain in a hoist.

Note: Chain properties do not conform to those shown in ANSI B30.9-1971, Safety Code for Slings.

(44) "Hoist motion" means that motion of a crane which raises and lowers a load.

(45) "Load" means the total superimposed weight on the load block or hook.

(46) The "load block" is the assembly of hook or shackle, swivel, bearing, sheaves, pins, and frame suspended by the hoisting rope.

(47) "Magnet" means an electromagnetic device carried on a crane hook to pick up loads magnetically.

(48) "Main hoist" means the hoist mechanism provided for lifting the maximum rated load.

(49) A "man trolley" is a trolley having an operator's cab attached thereto.

(50) "Rated load" means the maximum load for which a crane or individual hoist is designed and built by the manufacturer and shown on the equipment nameplate(s).

(51) "Rope" refers to wire rope, unless otherwise specified.

(52) "Running sheave" means a sheave which rotates as the load block is raised or lowered.

(53) "Runway" means an assembly of rails, beams, girders, brackets, and framework on which the crane or trolley travels.

(54) "Side pull" means that portion of the hoist pull acting horizontally when the hoist lines are not operated vertically.

(55) "Span" means the horizontal distance center to center of runway rails.

(56) "Standby crane" means a crane which is not in regular service but which is used occasionally or intermittently as required.

(57) A "stop" is a device to limit travel of a trolley or crane bridge. This device normally is attached to a fixed structure and normally does not have energy absorbing ability.

(58) A "switch" is a device for making, breaking, or for changing the connections in an electric circuit.

(59) An "emergency stop switch" is a manually or automatically operated electric switch to cut off electric power independently of the regular operating controls.

(60) A "limit switch" is a switch which is operated by some part or motion of a power-driven machine or equipment to alter the electric circuit associated with the machine or equipment.

(61) A "main switch" is a switch controlling the entire power supply to the crane.

(62) A "master switch" is a switch which dominates the operation of contractors, relays, or other remotely operated devices.

(63) The "trolley" is the unit which travels on the bridge rails and carries the hoisting mechanism.

(64) "Trolley travel" means the trolley movement at right angles to the crane runway.

(65) "Truck" means the unit consisting of a frame, wheels, bearings, and axles which supports the bridge girders or trolleys.

[Order 73-5, § 296-24-23501, filed 5/9/73 and Order 73-4, § 296-24-23501, filed 5/7/73.]

WAC 296-24-23503 General requirements. (1) Application. This section applies to overhead and gantry cranes, including semigantry, cantilever gantry, wall cranes, storage bridge cranes, and others having the same fundamental characteristics. These cranes are grouped because they all have trolleys and similar travel characteristics.

(2) New and existing equipment. All new overhead and gantry cranes constructed and installed on or after the effective date of these standards, shall meet the design

specifications of the American National Standards Institute, Safety Code for Overhead and Gantry Cranes, ANSI B30.2.0-1967. Overhead and gantry cranes constructed before the effective date of these standards, should be modified to conform to those design specifications, unless it can be shown that the crane cannot feasibly or economically be altered and that the crane substantially complies with the requirements of this section. (See WAC 296-24-010 variance and procedure.)

(3) Modifications. Cranes may be modified and rerated provided such modifications and the supporting structure are checked thoroughly for the new rated load by a qualified engineer or the equipment manufacturer. The crane shall be tested in accordance with WAC 296-24-23521(2). New rated load shall be displayed in accordance with (5) of this section.

(4) Wind indicators and rail clamps.

(a) Outdoor storage bridges shall be provided with automatic rail clamps. A wind-indicating device shall be provided which will give a visible or audible alarm to the bridge operator at a predetermined wind velocity. If the clamps act on the rail heads, any beads or weld flash on the rail heads shall be ground off.

(b) Calculations for wind pressure on outside overhead traveling cranes shall be based on not less than 30 pounds per square foot of exposed surface.

(5) Rated load marking. The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground or floor.

(6) Clearance from obstruction.

(a) Minimum clearance of 3 inches overhead and 2 inches laterally shall be provided and maintained between crane and obstructions in conformity with Specification No. 61 Crane Manufactures Association of America, Inc., 8720 Red Oak Blvd., Suite 201, Charlotte, NC 28217.

(b) Where passageways or walkways are provided obstructions shall not be placed so that safety of personnel will be jeopardized by movements of the crane.

(7) Clearance between parallel cranes. If the runways of two cranes are parallel, and there are no intervening walls or structure, there shall be adequate clearance provided and maintained between the two bridges.

(8) Designated personnel. Only designated personnel shall be permitted to operate a crane covered by this section.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-23503, filed 7/20/94, effective 9/20/94; Order 74-27, § 296-24-23503, filed 5/7/74; Order 73-5, § 296-24-23503, filed 5/9/73 and Order 73-4, § 296-24-23503, filed 5/7/73.]

WAC 296-24-23505 Cabs. (1) Cab location.

(a) The general arrangement of the cab and the location of control and protective equipment shall be such that all operating handles are within convenient reach of the operator when facing the area to be served by the load hook, or while facing the direction of travel of the cab. The arrangement shall allow the operator a full view of the load hook in all positions.

(b) The cab shall be located to afford a minimum of 3 inches clearance from all fixed structures within its area of possible movement.

(c) The clearance of the cab above the working floor or passageway should be not less than seven feet.

(2) Access to crane. Access to the cab and/or bridge walkway shall be by a conveniently placed fixed ladder, stairs, or platform, requiring no step over any gap exceeding 12 inches. Fixed ladders shall be in conformance with the American National Standards Institute, Safety Code for Fixed Ladders, ANSI A14.3-1956.

(3) Fire extinguisher. A carbon dioxide, dry-chemical, or equivalent hand fire extinguisher should be kept in the cab. Carbon tetrachloride extinguishers shall not be used.

(4) Lighting. Light in the cab shall be sufficient to enable the operator to see clearly enough to perform the work.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-23505, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-23505, filed 5/9/73 and Order 73-4, § 296-24-23505, filed 5/7/73.]

WAC 296-24-23507 Footwalks and ladders. (1) Location of footwalks.

(a) If sufficient headroom is available on cab-operated cranes, a footwalk shall be provided on the drive side along the entire length of the bridge of all cranes having the trolley running on the top of the girders. To give sufficient access to the opposite side of the trolley, there should be provided either a footwalk mounted on the trolley, a suitable footwalk or platform in the building, or a footwalk on the opposite side of the crane at least twice the length of the trolley.

(b) Footwalks should be located to give a headroom not less than 78 inches. In no case shall less than 48 inches be provided. If 48 inches of headroom cannot be provided, footwalks should be omitted from the crane and a stationary platform or landing stage built for workers making repairs.

(2) Construction of footwalks.

(a) Footwalks shall be of rigid construction and designed to sustain a distributed load of at least 50 pounds per square foot.

(b) Footwalks shall have a walking surface of antislip type.

Note: Wood will meet this requirement.

(c) Footwalks should be continuous and permanently secured.

(d) Footwalks should have a clear passageway at least 18 inches wide except opposite the bridge motor, where they should be not less than 15 inches. The inner edge shall extend at least to the line of the outside edge of the lower cover plate or flange of the girder.

(3) Toeboards and handrails for footwalks. Toeboards and handrails shall be in compliance with WAC 296-24-750 through 296-24-75011.

(4) Ladders and stairways.

(a) Gantry cranes shall be provided with ladders or stairways extending from the ground to the footwalk or cab platform.

(b) Stairways shall be equipped with rigid and substantial metal handrails. Walking surfaces shall be of an antislip type.

(c) Ladders shall be permanently and securely fastened in place and shall be constructed in compliance with WAC 296-24-810 through 296-24-81011.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-23507, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-23507, filed 5/9/73 and Order 73-4, § 296-24-23507, filed 5/7/73.]

WAC 296-24-23509 Stops, bumpers, rail sweeps, and guards. (1) Trolley stops.

(a) Stops shall be provided at the limits of travel of the trolley.

(b) Stops shall be fastened to resist forces applied when contacted.

(c) A stop engaging the tread of the wheel shall be of a height at least equal to the radius of the wheel.

(2) Bridge bumpers.

(a) A crane shall be provided with bumpers or other automatic means providing equivalent effect, unless the crane travels at a slow rate of speed and has a faster deceleration rate due to the use of sleeve bearings, or is not operated near the ends of bridge and trolley travel, or is restricted to a limited distance by the nature of the crane operation and there is no hazard of striking any object in this limited distance or is used in similar operating conditions. The bumpers shall be capable of stopping the crane (not including the lifted load) at an average rate of deceleration not to exceed 3 ft/s/s when traveling in either direction at 20 percent of the rated load speed.

(i) The bumpers shall have sufficient energy absorbing capacity to stop the crane when traveling at a speed of at least 40 percent of rated load speed.

(ii) The bumpers shall be so mounted that there is no direct shear on bolts.

(iii) Bumpers shall be so designed and installed as to minimize parts falling from the crane in case of breakage.

(3) Trolley bumpers.

(a) A trolley shall be provided with bumpers or other automatic means of equivalent effect, unless the trolley travels at a slow rate of speed, or is not operated near the ends of bridge and trolley travel, or is restricted to a limited distance of the runway and there is no hazard of striking any object in this limited distance, or is used in similar operating conditions. The bumpers shall be capable of stopping the trolley (not including the lifted load) at an average rate of deceleration not to exceed 4.7 ft./s/s when traveling in either direction at one-third of the rated load speed.

(i) When more than one trolley is operated on the same bridge, each shall be equipped with bumpers or equivalent on their adjacent ends.

(b) Bumpers or equivalent shall be designed and installed to minimize parts falling from the trolley in case of age.

(4) Rail sweeps. Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.

(5) Guards for hoisting ropes.

(a) If hoisting ropes run near enough to other parts to make fouling or chafing possible, guards shall be installed to prevent this condition.

(b) A guard shall be provided to prevent contact between bridge conductors and hoisting ropes if they could come into contact.

(6) Guards for moving parts.

(a) Exposed moving parts such as gears, set screws, projecting keys, chains, chain sprockets, and reciprocating components which might constitute a hazard under normal operating conditions shall be guarded.

(b) Guards shall be securely fastened.

(c) Each guard shall be capable of supporting without permanent distortion the weight of a 200-pound person unless the guard is located where it is impossible for a person to step on it.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-23509, filed 11/13/80; Order 74-27, § 296-24-23509, filed 5/7/74; Order 73-5, § 296-24-23509, filed 5/9/73 and Order 73-4, § 296-24-23509, filed 5/7/73.]

WAC 296-24-23511 Brakes. (1) Brakes for hoists.

(a) Each independent hoisting unit of a crane shall be equipped with at least one self-setting brake, hereafter referred to as a holding brake, applied directly to the motor shaft or some part of the gear train.

(b) Each independent hoisting unit of a crane, except worm-geared hoists, the angle of whose worm is such as to prevent the load from accelerating in the lowering direction shall, in addition to a holding brake, be equipped with control braking means to prevent overspeeding.

(2) Holding brakes.

(a) Holding brakes for hoist motors shall have not less than the following percentage of the full load hoisting torque at the point where the brake is applied.

(i) 125 percent when used with a control braking means other than mechanical.

(ii) 100 percent when used in conjunction with a mechanical control braking means.

(iii) 100 percent each if two holding brakes are provided.

(b) Holding brakes on hoists shall have ample thermal capacity for the frequency of operation required by the service.

(c) Holding brakes on hoists shall be applied automatically when power is removed.

(d) Where necessary holding brakes shall be provided with adjustment means to compensate for wear.

(e) The wearing surface of all holding-brake drums or discs shall be smooth.

(f) Each independent hoisting unit of a crane handling hot metal and having power control braking means shall be equipped with at least two holding brakes.

(3) Control braking means.

(a) A power control braking means such as regenerative, dynamic or countertorque braking, or a mechanically controlled braking means shall be capable of maintaining safe lowering speeds of rated loads.

(b) The control braking means shall have ample thermal capacity for the frequency of operation required by service.

(4) Brakes for trolleys and bridges.

(a) Foot operated brakes shall not require an applied force of more than 70 pounds to develop manufacturer's rated brake torque.

(b) Brakes may be applied by mechanical, electrical, pneumatic, hydraulic, or gravity means.

(c) Where necessary brakes shall be provided with adjustment means to compensate for wear.

(d) The wearing surface of all brake drums or discs shall be smooth.

(e) All foot-brake pedals shall be constructed so that the operator's foot will not easily slip off the pedal.

(f) Foot-operated brakes shall be equipped with automatic means for positive release when pressure is released from the pedal.

(g) Brakes for stopping the motion of the trolley or bridge shall be of sufficient size to stop the trolley or bridge within a distance in feet equal to 10 percent of full load speed in feet per minute when traveling at full speed with full load.

(h) If holding brakes are provided on the bridge or trolley(s), they shall not prohibit the use of a drift point in the control circuit.

(i) Brakes on trolleys and bridges shall have ample thermal capacity for the frequency of operation required by the service to prevent impairment of functions from overheating.

(5) Application of trolley brakes.

(a) On cab-operated cranes with cab on trolley, a trolley brake shall be required as specified under (4) of this section.

(b) A drag brake may be applied to hold the trolley in a desired position on the bridge and to eliminate creep with the power off.

(6) Application of bridge brakes.

(a) On cab-operated cranes with cab on bridge, a bridge brake is required as specified under (4) of this section.

(b) On cab-operated cranes with cab on trolley, a bridge brake of the holding type shall be required.

(c) On all floor, remote and pulpit-operated crane bridge drives, a brake or noncoasting mechanical drive shall be provided.

[Order 73-5, § 296-24-23511, filed 5/9/73 and Order 73-4, § 296-24-23511, filed 5/7/73.]

WAC 296-24-23513 Electric equipment. (1) General.

(a) Wiring and equipment shall comply with chapter 296-24 WAC Part L.

(b) The control circuit voltage shall not exceed 600 volts for a.c. or d.c. current.

(c) The voltage at pendant pushbuttons shall not exceed 150 volts for a.c. and 300 volts for d.c.

(d) Where multiple conductor cable is used with a suspended pushbutton station, the station shall be supported in a manner that will protect the electrical conductors against strain.

(e) Pendant control boxes shall be constructed to prevent electrical shock and shall be clearly marked for identification of functions.

(2) Equipment.

(a) Electrical equipment shall be so located or enclosed that live parts will not be exposed to accidental contact under normal operating conditions.

(b) Electric equipment shall be protected from dirt, grease, oil, and moisture.

(c) Guards for live parts shall be substantial and so located that they cannot be accidentally deformed so as to make contact with the live parts.

(3) Controllers.

(a) Cranes not equipped with spring-return controllers or momentary contact pushbuttons shall be provided with a device which will disconnect all motors from the line on failure of power and will not permit any motor to be restarted until the controller handle is brought to the "off" position, or a reset switch or button is operated.

(b) Lever operated controllers shall be provided with a notch or latch which in the "off" position prevents the handle from being inadvertently moved to the "on" position. An "off" detent or spring return arrangement is acceptable.

(c) The controller operating handle shall be located within convenient reach of the operator.

(d) As far as practicable, the movement of each controller handle shall be in the same general directions as the resultant movements of the load.

(e) The control for the bridge and trolley travel shall be so located that the operator can readily face the direction of travel.

(f) For floor-operated cranes, the controller or controllers if rope operated, shall automatically return to the "off" position when released by the operator.

(g) Pushbuttons in pendant stations shall return to the off position when pressure is released by the crane operator.

(h) Automatic cranes shall be so designed that all motions shall fail-safe if any malfunction of operation occurs.

(i) Remote-operated cranes shall function so that if the control signal for any crane motion becomes ineffective the crane motion shall stop.

(4) Resistors.

(a) Enclosures for resistors shall have openings to provide adequate ventilation, and shall be installed to prevent the accumulation of combustible matter near hot parts.

(b) Resistor units shall be supported so as to be free as possible from vibration.

(c) Provision shall be made to prevent broken parts or molten metal falling upon the operator or from the crane.

(5) Switches.

(a) The power supply to the runway conductors shall be controlled by a switch or circuit breaker located on a fixed structure, accessible from the floor, and arranged to be locked in the open position.

(b) On cab-operated cranes a switch or circuit breaker of the enclosed type, with provision for locking in the open position shall be provided in the leads from the runway conductors. A means of opening this switch or circuit breaker shall be located within easy reach of the operator.

(c) On floor-operated cranes, a switch or circuit breaker of the enclosed type, with provision for locking in the open position, shall be provided in the leads from the runway conductors. This disconnect shall be mounted on the bridge or footwalk near the runway collectors. One of the following types of floor operated disconnects shall be provided:

(i) Nonconductive rope attached to the main disconnect switch.

(ii) An undervoltage trip for the main circuit breaker operated by an emergency stop button in the pendant pushbutton station.

(iii) A main line contactor operated by a switch or pushbutton in the pendant pushbutton station.

(d) The hoisting motion of all electric traveling cranes shall be provided with an overtravel limit switch in the hoisting direction.

(e) All cranes using a lifting magnet shall have a magnet circuit switch of the enclosed type with provision for locking in the open position. Means for discharging the inductive load of the magnet shall be provided.

(6) Runway conductors. Conductors of the open type mounted on the crane runway beams or overhead shall be so located or so guarded that persons entering or leaving the cab or crane footwalk normally could not come into contact with them.

(7) Extension lamps. If a service receptacle is provided in the cab or on the bridge of cab-operated cranes, it shall be a grounded three-prong type permanent receptacle, not exceeding 300 volts.

(8) Floor operated cranes.

(a) An unobstructed aisle not less than three feet wide shall be maintained for travel of the operator except in such cases where the control handles are hung from the trolleys of traveling cranes.

(b) The handles of control ropes shall be distinctly different in contour so that, without looking, the operator will know which is the hoisting and which is the lowering handle. The direction of all movements of the crane shall be clearly indicated in some manner so that the operator can easily become familiar with them.

(c) When repairing runways, repairpersons shall place rail stops and warning signs or signals so as to protect both ends of the section to be repaired.

(d) Repairpersons shall take care to prevent loose parts from falling or being thrown upon the floor beneath.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-23513, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-23513, filed 5/9/73 and Order 73-4, § 296-24-23513, filed 5/7/73.]

WAC 296-24-23515 Hoisting equipment. (1) Sheaves.

(a) Sheave grooves shall be smooth and free from surface defects which could cause rope damage.

(b) Sheaves carrying ropes which can be momentarily unloaded shall be provided with close-fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.

(c) The sheaves in the bottom block shall be equipped with close-fitting guards that will prevent ropes from becoming fouled when the block is laying on the ground with ropes loose.

(d) Pockets and flanges of sheaves used with hoist chains shall be of such dimensions that the chain does not catch or bind during operation.

(e) All running sheaves shall be equipped with means for lubrication. Permanently lubricated, sealed and/or shielded bearings meet this requirement.

(2) Ropes.

(a) In using hoisting ropes, the crane manufacturer's recommendation shall be followed. The rated load divided by the number of parts of rope shall not exceed 20 percent of the nominal breaking strength of the rope.

(b) Socketing shall be done in the manner specified by the manufacturer of the assembly.

(c) Rope shall be secured to the drum as follows:

(i) No less than two wraps of rope shall remain on the drum when the hook is in its extreme low position.

(ii) Rope end shall be anchored by a clamp securely attached to the drum, or by a socket arrangement approved by the crane or rope manufacturer.

(d) Rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope. Spacing and number of all types of clips shall be in accordance with (2)(e) of this section. Clips shall be drop-forged steel in all sizes manufactured commercially. When a newly installed rope has been in operation for an hour, all nuts on the clip bolts shall be retightened.

(e)

Diameter of Rope	Number of Clips Required	Space Between Clips
1 1/2 inch	8	10 inches
1 3/8 inch	7	9 inches
1 1/4 inch	6	8 inches
1 1/8 inch	5	7 inches
1 inch	5	6 inches
7/8 inch	5	5 1/4 inches
3/4 inch	5	4 1/2 inches
3/8 to 5/8 inch	4	3 inches

(f) Swaged or compressed fittings shall be applied as recommended by the rope or crane manufacturer.

(g) Wherever exposed to temperatures, at which fiber cores would be damaged, rope having an independent wire-rope or wire-strand core, or other temperature-damage resistant core shall be used.

(h) Replacement rope shall be the same size, grade, and construction as the original rope furnished by the crane manufacturer, unless otherwise recommended by a wire rope manufacturer due to actual working condition requirements.

(3) Equalizers. If a load is supported by more than one part of rope, the tension in the parts shall be equalized.

(4) Hooks. Hooks shall meet the manufacturer's recommendations and shall not be overloaded. Safety latch-type hooks shall be used or the hook shall be moused.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-23515, filed 11/13/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-23515, filed 7/31/79; Order 73-5, § 296-24-23515, filed 5/9/73 and Order 73-4, § 296-24-23515, filed 5/7/73.]

WAC 296-24-23517 Warning device. Except for floor operated cranes a gong or other effective warning signal shall be provided for each crane equipped with a powered traveling mechanism.

[Order 73-5, § 296-24-23517, filed 5/9/73 and Order 73-4, § 296-24-23517, filed 5/7/73.]

WAC 296-24-23519 Inspection. (1) Inspection classification.

(a) Initial inspection. Prior to initial use all new and altered cranes shall be inspected to insure compliance with the provisions of these standards.

(b) Inspection procedure for cranes in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the crane and the degree of their exposure to

wear, deterioration, or malfunction. The two general classifications are herein designated as "frequent" and "periodic" with respective intervals between inspections as defined below:

(i) Frequent inspection - daily to monthly intervals.

(ii) Periodic inspection - 1 to 12 month intervals.

(2) Frequent inspection. The following items shall be inspected for defects at intervals as defined in (1)(b) of this section or as specifically indicated, including observation during operation for any defects which might appear between regular inspections. All deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) All functional operating mechanisms for maladjustment interfering with proper operation. Daily.

(b) Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems. Daily.

(c) Hooks with deformation or cracks. Visual inspection daily; monthly inspection with signed reports. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook refer to WAC 296-24-23523 (3)(c)(i).

(d) Hoist or load attachment chains, including end connections, for excessive wear, twist, distorted links interfering with proper function, or stretch beyond manufacturer's recommendations. Visual inspection daily; monthly inspection with signed report.

(e) Rope slings, including end connections, for excessive wear, broken wires, stretch, kinking, or twisting. Visual inspection daily; monthly inspection with signed report.

(f) All functional operating mechanisms for excessive wear of components.

(g) Rope reeving for noncompliance with manufacturer's recommendations.

(3) Periodic inspection. Complete inspections of the crane shall be performed at intervals as generally defined in (l)(b)(ii) of this section, depending upon its activity, severity of service, and environment, or as specifically indicated below. These inspections shall include the requirements of (2) of this section and in addition, the following items. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) Deformed, cracked, or corroded members.

(b) Loose bolts or rivets.

(c) Cracked or worn sheaves and drums.

(d) Worn, cracked or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices.

(e) Excessive wear on brake system parts, linings, pawls, and ratchets.

(f) Load, wind, and other indicators over their full range, for any significant inaccuracies.

(g) Gasoline, diesel, electric, or other powerplants for improper performance or noncompliance with applicable safety requirements.

(h) Excessive wear of chain drive sprockets and excessive chain stretch.

(i) Crane hooks. Magnetic particle or other suitable crack detecting inspection should be performed at least once each year.

(j) Electrical apparatus, for signs of pitting or any deterioration of controller contactors, limit switches and pushbutton stations.

(4) Cranes not in regular use.

(a) A crane which has been idle for a period of 1 month or more, but less than 6 months, shall be given an inspection conforming with requirements of (2) of this section and WAC 296-24-23525(2), before placing in service.

(b) A crane which has been idle for a period of over 6 months shall be given a complete inspection conforming with requirements of (2) and (3) of this section and WAC 296-24-23525(2) before placing in service.

(c) Standby cranes shall be inspected at least semiannually in accordance with requirements of (2) of this section and WAC 296-24-23525(2). Standby cranes exposed to adverse environment should be inspected more frequently.

[Order 73-5, § 296-24-23519, filed 5/9/73 and Order 73-4, § 296-24-23519, filed 5/7/73.]

WAC 296-24-23521 Testing. (1) Operational tests.

(a) Prior to initial use all new and altered cranes shall be tested to insure compliance with this section including the following functions:

(i) Hoisting and lowering.

(ii) Trolley travel.

(iii) Bridge travel.

(iv) Limit switches, locking and safety devices.

(b) The trip setting of hoist limit switches shall be determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The actuating mechanism of the limit switch shall be located so that it will trip the switch, under all conditions, in sufficient time to prevent contact of the hook or hook block with any part of the trolley.

(2) Rated load test. Prior to initial use all new, extensively repaired, and altered cranes should be tested by or under the direction of an appointed or authorized person, confirming the load rating of the crane. The load rating should not be more than 80 percent of the maximum load sustained during the test. Test loads shall not be more than 125 percent of the rated load unless otherwise recommended by the manufacturer. The tests reports shall be placed on file where readily available to appointed personnel.

[Order 73-5, § 296-24-23521, filed 5/9/73 and Order 73-4, § 296-24-23521, filed 5/7/73.]

WAC 296-24-23523 Maintenance. (1) Preventive maintenance. A preventive maintenance program based on the crane manufacturer's recommendations shall be established.

(2) Maintenance procedure.

(a) Before adjustments and repairs are started on a crane the following precautions shall be taken:

(i) The crane to be repaired shall be run to a location where it will cause the least interference with other cranes and operations in the area.

(ii) All controllers shall be at the off position.

(iii) The main or emergency switch shall be open and locked in the open position.

(iv) Warning or "out of order" signs shall be placed on the crane, also on the floor beneath or on the hook where visible from the floor.

(v) Where other cranes are in operation on the same runway, rail stops or other suitable means shall be provided to prevent interference with the idle crane.

(vi) Where temporary protective rail stops are not available, or practical, a signalperson should be placed at a visual vantage point for observing the approach of an active crane and warning its operator when reaching the limit of safe distance from the idle crane.

(b) After adjustments and repairs have been made the crane shall not be operated until all guards have been reinstalled, safety devices reactivated and maintenance equipment removed.

(3) Adjustments and repairs.

(a) Any unsafe conditions disclosed by the inspection requirements of WAC 296-24-23519 shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be done only by designated personnel.

(b) Adjustments shall be maintained to assure correct functioning of components. The following are examples:

(i) All functional operating mechanisms.

(ii) Limit switches.

(iii) Control systems.

(iv) Brakes.

(v) Power plants.

(c) Repairs or replacements shall be provided promptly as needed for safe operation. The following are examples:

(i) Accessory components, such as hooks, shall be carefully examined periodically and at the time of annual examination and inspection. Cracked or deformed hooks shall be discarded immediately and not reused on any equipment subject to the provisions of this code.

(ii) Load attachment chains and rope slings showing defects described in WAC 296-24-23519 (2)(d) and (e) respectively.

(iii) All critical parts which are cracked, broken, bent, or excessively worn.

(iv) Pendant control stations shall be kept clean and function labels kept legible.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-23523, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-23523, filed 5/9/73 and Order 73-4, § 296-24-23523, filed 5/7/73.]

WAC 296-24-23525 Rope inspection. (1) Running ropes. A thorough inspection of all ropes shall be made at least once a month and a full written, dated, and signed report of rope condition kept on file where readily available to appointed personnel. Any deterioration, resulting in appreciable loss of original strength, such as described below, shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution or concentration of such broken wires.

(c) Worn outside wires.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn, or improperly applied end connections.

(f) Severe kinking, crushing, cutting, or unstranding.

(2) Other ropes. All rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration and shall be performed by an appointed person whose approval shall be required for further use of the rope. A written and dated report of the rope condition shall be available for inspection.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-23525, filed 11/13/80; Order 73-5, § 296-24-23525, filed 5/9/73 and Order 73-4, § 296-24-23525, filed 5/7/73.]

WAC 296-24-23527 Handling the load. (1) Size of load. The crane shall not be loaded beyond its rated load except for test purposes as provided in WAC 296-24-23521.

(2) Attaching the load.

(a) The hoist chain or hoist rope shall be free from kinks or twists and shall not be wrapped around the load.

(b) The load shall be attached to the load block hook by means of slings or other approved devices.

(c) Care shall be taken to make certain that the sling clears all obstacles.

(3) Moving the load.

(a) The load shall be well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

(b) Before starting to hoist the following conditions shall be noted:

(i) Hoist rope shall not be kinked.

(ii) Multiple part lines shall not be twisted around each other.

(iii) The hook shall be brought over the load in such a manner as to prevent swinging.

(c) During hoisting care shall be taken that:

(i) There is no sudden acceleration or deceleration of the moving load.

(ii) The load does not contact any obstructions.

(d) Cranes shall not be used for side pulls except when specifically authorized by a responsible person who has determined that the stability of the crane is not thereby endangered and that various parts of the crane will not be overstressed.

(e) While any employee is on the load or hook, there shall be no hoisting, lowering, or traveling.

(f) The employer shall require that the operator avoid carrying loads over people.

(g) The operator shall test the brakes each time a load approaching the rated load is handled. The brakes shall be tested by raising the load a few inches and applying the brakes.

(h) The load shall not be lowered below the point where less than two full wraps of rope remain on the hoisting drum.

(i) When two or more cranes are used to lift a load one qualified responsible person shall be in charge of the operation. The qualified person shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

(j) The employer shall assure that the operator does not leave the control position while the load is suspended.

(k) When starting the bridge and when the load or hook approaches near or over personnel, the warning signal shall be sounded.

(4) Hoist limit switch.

(a) At the beginning of each operator's shift, the upper limit switch of each hoist shall be tried out under no load. Extreme care shall be exercised; the block shall be "inched" into the limit or run in at slow speed. If the switch does not operate properly, the appointed person shall be immediately notified.

(b) The hoist limit switch which controls the upper limit of travel of the load block shall never be used as an operating control.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-23527, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-23527, filed 5/9/73 and Order 73-4, § 296-24-23527, filed 5/7/73.]

WAC 296-24-23529 Operators. (1) Cranes shall be operated only be regular crane operators, authorized substitutes who have had adequate experience and training under the supervision of a competent operator, or by crane repairmen or inspectors.

(2) No person should be permitted to operate a crane who cannot speak and read the English language, or who is under eighteen years of age.

(3) No person shall be permitted to operate a crane whose hearing or eye-sight is impaired, or who may be suffering from heart disease or similar ailments. The following physical qualifications shall be minimum requirements for overhead and gantry crane operators and trainees:

(a) They shall have vision of at least 20/30 in one eye, and 20/50 in the other, with or without corrective lenses.

(b) They shall be able to distinguish colors, regardless of position of colors, if color differential is required for operation.

(c) Their hearing, with or without hearing aid, must be adequate for a specific operation.

(d) They shall have sufficient strength, endurance, agility, coordination, and speed of reaction to meet the demands of equipment operation.

(e) They shall have normal depth perception, field of vision, reaction time, manual dexterity, coordination and no tendencies to dizziness or similar undesirable characteristics.

(f) Evidence of physical defects, or emotional instability which could render the operator or trainee a hazard to their self or others, or could interfere with their safe performance may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgments or tests shall be required (which include annual medical certification for recovered heart attack patients).

(g) Evidence that an operator or trainee is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests shall be required to substantiate these conditions.

(4) Persons who have recovered from a heart attack shall be exempted from the provisions of subsection (3) of this section, as it pertains to their heart condition, provided:

(a) A medical release is obtained from their attending medical doctor.

(b) The release shall state that the operation of a crane will not present a hazard to their self or others.

(c) An examination by a medical doctor, and renewal of the work release certification is required annually.

(5) The operator shall be fully familiar with all crane rules and with the crane mechanism and its proper care. Needed adjustments or repairs shall be reported at once to the proper authority.

(6) The operator shall not eat, smoke or read while actually engaged in the operation of the crane, or operate the crane when physically unfit.

(7) The operator or someone especially designated shall properly lubricate all working parts of the crane.

(8) Cranes shall be kept clean.

(9) Whenever the operator finds the main or emergency switch open, it shall not be closed, even when starting on regular duty, until it is determined that no one is on or about the crane. The crane shall not be oiled or repaired unless the main switch is open.

(10) If the power goes off, the operator shall immediately throw all controllers to "off" position until the power is again available.

(11) Before closing the main switch the operator shall make sure that all controllers are in "off" position until the power is again available.

(12) The operator shall recognize signals only from the employee who is supervising the lift. Operating signals shall follow an established standard. Whistle signals may be used where one crane only is in operation.

(13) Bumping into runway stops or other cranes shall be avoided. When the operator is ordered to engage with or push other cranes, it shall be done with special care for the safety of persons on or below cranes.

(14) When lowering a load, the operator shall proceed carefully and make sure the load is under safe control.

(15) When leaving the cage the operator shall throw all controllers to "off" position and open the main switch.

(16) If the crane is located out-of-doors the operator shall lock the crane in a secure position to prevent it from being blown along or off the track by a severe wind.

(17) Operators shall not permit anyone to ride on the load or hooks, unless using a lifeline or safety device approved by the department.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-23529, filed 7/20/94, effective 9/20/94. 89-11-035 (Order 89-03), § 296-24-23529, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-23529, filed 5/9/73 and Order 73-4, § 296-24-23529, filed 5/7/73.]

WAC 296-24-23531 Other requirements—General. (1) Ladders.

(a) The employer shall insure that hands are free from encumbrances while personnel are using ladders.

(b) Articles which are too large to be carried in pockets or belts shall be lifted and lowered by hand line.

(2) Cabs.

(a) Necessary clothing and personal belongings shall be stored in such a manner as not to interfere with access or operation.

(b) Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in the tool box, and shall not be permitted to lie loose in or about the cab.

(3) Fire extinguishers. The employer shall insure that operators are familiar with the operation and care of fire extinguishers provided.

[Order 73-5, § 296-24-23531, filed 5/9/73 and Order 73-4, § 296-24-23531, filed 5/7/73.]

WAC 296-24-23533 Crane and derrick suspended personnel (work) platforms. (1) Scope and application. This standard applies to the design, construction, testing, use and maintenance of personnel platforms, and the hoisting of personnel platforms on the load lines of cranes or derricks.

(2) Definitions. For the purposes of this section, the following definitions apply:

(a) "Failure" means load refusal, breakage, or separation of components.

(b) "Hoist" (or hoisting) means all crane or derrick functions such as lowering, lifting, swinging, booming in and out or up and down, or suspending a personnel platform.

(c) "Load refusal" means the point where the ultimate strength is exceeded.

(d) "Maximum intended load" means the total load of all employees tools, materials, and other loads reasonably anticipated to be applied to a personnel platform or personnel platform component at any one time.

(e) "Runway" means a firm, level surface designed, prepared, and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as long as it meets these criteria.

(3) General requirements. The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous, or is not possible because of structural design or worksite conditions.

(4) Operational criteria.

(a) Hoisting of the personnel platform shall be performed in a slow, controlled, cautious manner with no sudden movements of the crane or derrick, or the platform.

(b) Load lines shall be capable of supporting, without failure, at least seven times the maximum intended load, except that where rotation resistant rope is used, the lines shall be capable of supporting without failure, at least ten times the maximum intended load. The required design factor is achieved by taking the current safety factor of 3.5 and applying the fifty percent derating of the crane capacity.

(c) Load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs shall be engaged when the occupied personnel platform is in a stationary working position.

(d) The load line hoist drum shall have a system or device on the power train, other than the load hoist brake, which regulates the lowering rate of speed of the hoist mechanism (controlled load lowering). Free fall is prohibited.

(e) The crane shall be uniformly level within one percent of level grade and located on firm footing. Cranes equipped with outriggers shall have them all fully deployed following manufacturer's specifications, insofar as applicable, when hoisting employees.

(f) The total weight of the loaded personnel platform and related rigging shall not exceed fifty percent of the rated capacity for the radius and configuration of the crane or derrick.

(g) The use of machines having live booms (booms in which lowering is controlled by a brake without aid from other devices which slow the lowering speeds) is prohibited.

(h) Multiple-part line block: When a multiple-part line block is in use, a substantial strap shall be used between the crane hook and common ring, shackle, or other equivalent device, to eliminate employee exposure to the lines running through the block, and to the block itself.

(5) Rigging.

(a) Lifting bridles on box-type platforms shall consist of four legs of equal length, with one end securely shackled to each corner of the platform and the other end securely attached to a common ring, shackle, or other equivalent device to accommodate the crane hook, or a strap to the crane hook.

(b) Shackle bolts used for rigging of personnel platforms shall be secured against displacement.

(c) A substantial safety line shall pass through the eye of each leg of the bridle adjacent to the common ring, shackle, or equivalent device and be securely fastened with a minimum amount of slack to the lift line above the headache ball or to the crane hook itself.

(d) All eyes in wire rope sling shall be fabricated with thimbles.

(e) Wire rope, shackles, rings, master links, and other rigging hardware must be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant wire rope is used for slings, they shall be capable of supporting without failure at least ten times the maximum intended load.

(f) Hooks on headache ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut, and retaining pin shall be used.

(g) Bridles and associated rigging for attaching the personnel platform to the hoist line shall be used only for the platform and the necessary employees, their tools and the materials necessary to do their work, and shall not be used for any other purpose when not hoisting personnel.

(6) Personnel platforms - design criteria.

(a) The personnel platform and suspension system shall be designed by a qualified engineer or a qualified person competent in structural design.

(b) The suspension system shall be designed to minimize tipping of the platform due to movement of employees occupying the platform.

(c) The personnel platform itself, except the guardrail system and body belt/harness anchorages, shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load based on a minimum allowance of five hundred pounds for the first person with light tools, and an additional two hundred fifty pounds for each additional person.

(d) Criteria for guardrail systems and body belt/harness anchorages are contained in WAC 296-24-75007 and 296-24-82503(31) respectively.

(e) The personnel platform shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity or maximum intended load.

(7) Platform specifications.

(a) Each personnel platform shall be equipped with a guardrail system which meets the requirements of WAC 296-24-75007, and shall be enclosed at least from the toeboard to mid-rail with either solid construction or expanded metal having openings no greater than one-half inch (1.27cm).

(b) A grab rail shall be installed inside the entire perimeter of the personnel platform.

(c) Access gates, if installed, shall not swing outward during hoisting.

(d) Access gates, including sliding or folding gates, shall be equipped with a restraining device to prevent accidental opening.

(e) Headroom shall be provided which allows employees to stand upright in the platform.

(f) In addition to the use of hard hats, employees shall be protected by overhead protection on the personnel platform when employees are exposed to falling objects.

(g) All rough edges exposed to contact by employees shall be surfaced or smoothed in order to prevent injury to employees from punctures or lacerations.

(h) All welding of the personnel platform and its components shall be performed by a qualified welder familiar with the weld grades, types, and material specified in the platform design.

(i) Occupants of all personnel platforms shall wear a safety belt or harness and lanyard which meets the requirements of ANSI A10.14- 1975.

(j) Box-type platform: The workers lanyard shall be secured to the work platform or guardrail of the work platform.

(k) Rescue platform:

(i) If the platform is used as a rescue vehicle, the injured worker shall be strapped into the stretcher or basket.

(ii) The basket shall then be secured by lanyard to an anchorage within the platform.

(l) Boatswains chair: The workers lanyard shall be secured to the lift line above the headache ball or to the crane hook itself.

(m) Barrel-type platform:

(i) The workers lanyard shall be secured to the lift line above the headache ball or to the crane hook itself.

(ii) A solid bar or rod shall be substantially attached in a rigid position to the bottom or side of the platform.

(iii) The side bar or rod shall extend a minimum of eight feet above the floor of the work platform.

(iv) The bottom of the barrel-type platform shall be of a convex shape to cause the platform to lay on its side when lowered to the ground or floor.

(v) Workers shall enter and exit from barrel-type platforms only when they are in an upright position, stable, and securely attached to the load line.

(vi) The employer shall use methods or devices which allow employees to safely enter or exit barrel-type platforms.

(8) Personnel platform loading.

(a) The personnel platform shall not be loaded in excess of its rated load capacity.

(b) The number of employees occupying the personnel platform shall not exceed the number required for the work being performed.

(c) Personnel platforms shall be used only for employees, their tools, and the materials necessary to do their work, and shall not be used to hoist only materials or tools when not hoisting personnel.

(d) Materials and tools for use during a personnel lift shall be secured to prevent displacement.

(e) Materials and tools for use during a personnel lift shall be evenly distributed within the confines of the platform while the platform is suspended.

(9) Trial lift, inspection, and prooftesting.

(a) A trial lift with the unoccupied personnel platform loaded at least to the anticipated liftweight shall be made from ground level, or any other location where employees will enter the platform, to each location at which the personnel platform is to be hoisted and positioned. This trial lift shall be performed immediately prior to placing personnel on the platform. The operator shall determine that all systems, controls, and safety devices are activated and functioning properly; that no interferences exist; and that all configurations necessary to reach those work locations will allow the operator to remain under the fifty percent limit of the hoist's rated capacity. Materials and tools to be used during the actual lift can be loaded in the platform, as provided in subsection (8)(d) and (e) of this section for the trial lift. A single trial lift may be performed at one time for all locations that are to be reached from a single set-up position.

(b) The trial lift shall be repeated prior to hoisting employees whenever the crane or derrick is moved and set up in a new location or returned to a previously used location. Additionally, the trial lift shall be repeated when the lift route is changed unless the operator determines that the route change is not significant (i.e., the route change would not affect the safety of hoisted employees).

(c) After the trial lift, and just prior to hoisting personnel, the platform shall be hoisted a few inches and inspected to ensure that it is secure and properly balanced. Employees shall not be hoisted unless the following conditions are determined to exist:

(i) Hoist ropes shall be free of kinks;

(ii) Multiple part lines shall not be twisted around each other;

(iii) The primary attachment shall be centered over the platform; and

(iv) The hoisting system shall be inspected if the load rope is slack to ensure all ropes are properly stated on drums and in sheaves.

(d) A visual inspection of the crane or derrick, rigging, personnel platform, and the crane or derrick base support or ground shall be conducted by a competent person immediately after the trial lift to determine whether the testing has exposed any defect or produced any adverse effect upon any component or structure.

(e) Any defects found during inspections which create a safety hazard shall be corrected before hoisting personnel.

(f) At each job site, prior to hoisting employees on the personnel platform, and after any repair or modification, the platform and rigging shall be prooftested to one hundred twenty-five percent of the platform's rated capacity by

holding it in a suspended position for five minutes with the test load evenly distributed on the platform (this may be done concurrently with the trial lift). After prooftesting, a competent person shall inspect the platform and rigging. Any deficiencies found shall be corrected and another prooftest shall be conducted. Personnel hoisting shall not be conducted until the prooftesting requirements are satisfied.

(g) The employer shall retain at the jobsite and produce when requested, documentation such as lift capacity information, verifying that the requirements of this standard have been met.

(10) Work practices.

(a) Employees shall keep all parts of the body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.

(b) Before employees exit or enter a hoisted personnel platform that is not landed, the platform shall be secured to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.

(c) Tag lines shall be used unless their use creates an unsafe condition.

(d) The crane or derrick operator shall remain at the controls at all times when the crane engine is running and the platform is occupied.

(e) Hoisting of employees shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.

(f) Employees being hoisted shall remain in continuous sight of and in direct communication with the operator or signal person. In those situations where direct visual contact with the operator is not possible, and the use of a signal person would create a greater hazard for that person, direct communication alone such as by radio may be used.

(g) Hand signals to the operator shall be in accordance with those prescribed by the applicable ANSI standard for the type of crane or lift in use unless voice communication equipment is utilized. Signals shall be discernable or audible at all times.

(h) Except over water, employees occupying the personnel platform shall use a body belt/harness system with lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member within the personnel platform capable of supporting a fall impact for employees using the anchorage.

(i) No lifts shall be made on another of the crane's or derrick's load lines while personnel are suspended on a platform.

(11) Traveling.

(a) Hoisting of employees while the crane is traveling is prohibited except for portal, tower and locomotive cranes, or where the employer demonstrates that there is no less hazardous way to perform the work.

(b) Under any circumstances where a crane would travel while hoisting personnel, the employer shall implement the following procedures to safeguard employees:

(i) Crane travel shall be restricted to a fixed track or runway;

(ii) Travel shall be limited to the load radius of the boom used during the lift; and

(iii) The boom must be parallel to the direction of travel.

(c) A complete trial run shall be performed to test the route of travel before employees are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by subsection (9)(a) of this section which tests the route of the lift.

(d) If travel is done with a rubber tired-carrier, the condition and air pressure of the tires shall be checked. The chart capacity for lifts on rubber shall be used for application of the fifty percent reduction of rated capacity. Notwithstanding subsection (4)(f) of this section, outriggers may be partially retracted as necessary for travel.

(12) Prelift meeting.

(a) A meeting attended by the crane or derrick operator, signal person(s) (if necessary for the lift), employee(s) to be lifted, and the person responsible for the task to be performed shall be held to review the appropriate requirements of this section and the procedures to be followed.

(b) This meeting shall be held prior to the trial lift at each new location, and shall be repeated for any employees newly assigned to the operation.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-23533, filed 1/10/91, effective 2/12/91.]

WAC 296-24-237 Construction, operation and maintenance—Chain and electric hoists. (1) Chain and electric hoists shall be of what is known as "all steel construction." No cast iron shall be used in parts subject to tension except drums, bearings or brake shoes.

(2) The chains shall be made of the best quality steel or iron with welded links.

(3) Chain and electric hoists shall have a factor of safety of at least five.

(4) Chain and electric hoists shall be equipped with an approved device which will automatically lock the load when hoisting is stopped.

(5) Electric hoists shall be provided with an approved limit stop to prevent the hoist block from traveling too far in case the operating handle is not released in time.

[Order 73-5, § 296-24-237, filed 5/9/73 and Order 73-4, § 296-24-237, filed 5/7/73.]

WAC 296-24-238 Air hoists. (1) To prevent piston rod lock nuts from becoming loose and allowing rod to drop when supporting a load, lock nut shall be secured to piston rod by a castellated nut and cotter-pin.

(2) A clevis or other means shall be used to prevent hoists cylinder becoming detached from hanger.

[Order 73-5, § 296-24-238, filed 5/9/73 and Order 73-4, § 296-24-238, filed 5/7/73.]

WAC 296-24-240 Crawler locomotive and truck cranes.

[Order 73-5, § 296-24-240, filed 5/9/73 and Order 73-4, § 296-24-240, filed 5/7/73.]

WAC 296-24-24001 Definitions. (1) A "crawler crane" consists of a rotating superstructure with power plant, operating machinery, and boom, mounted on a base, equipped with crawler treads for travel. Its function is to hoist and swing loads at various radii.

(2) A "locomotive crane" consists of a rotating superstructure with power plant, operating machinery and boom, mounted on a base or car equipped for travel on railroad track. It may be self-propelled or propelled by an outside source. Its function is to hoist and swing loads at various radii.

(3) A "truck crane" consists of a rotating superstructure with power plant, operating machinery and boom, mounted on an automotive truck equipped with a power plant for travel. Its function is to hoist and swing loads at various radii.

(4) A "wheel mounted crane" (wagon crane) consists of a rotating superstructure with power plant, operating machinery and boom, mounted on a base or platform equipped with axles and rubber-tired wheels for travel. The base is usually propelled by the engine in the superstructure, but it may be equipped with a separate engine controlled from the superstructure. Its function is to hoist and swing loads at various radii.

(5) An "accessory" is a secondary part or assembly of parts which contributes to the overall function and usefulness of a machine.

(6) "Appointed" means assigned specific responsibilities by the employer or the employer's representative.

(7) "ANSI" means the American National Standards Institute.

(8) An "angle indicator" (boom) is an accessory which measures the angle of the boom to the horizontal.

(9) The "axis of rotation" is the vertical axis around which the crane superstructure rotates.

(10) "Axle" means the shaft or spindle with which or about which a wheel rotates. On truck- and wheel-mounted cranes it refers to an automotive type of axle assembly including housings, gearing, differential, bearings, and mounting appurtenances.

(11) "Axle" (bogie) means two or more automotive-type axles mounted in tandem in a frame so as to divide the load between the axles and permit vertical oscillation of the wheels.

(12) The "base" (mounting) is the traveling base or carrier on which the rotating superstructure is mounted such as a car, truck, crawlers, or wheel platform.

(13) The "boom" (crane) is a member hinged to the front of the rotating superstructure with the outer end supported by ropes leading to a gantry or "A" frame and used for supporting the hoisting tackle.

(14) The "boom angle" is the angle between the longitudinal centerline of the boom and the horizontal. The boom longitudinal centerline is a straight line between the boom foot pin (heel pin) centerline and boom point sheave pin centerline.

(15) The "boom hoist" is a hoist drum and rope reeving system used to raise and lower the boom. The rope system may be all live reeving or a combination of live reeving and pendants.

(16) The "boom stop" is a device used to limit the angle of the boom at the highest position.

(17) A "brake" is a device used for retarding or stopping motion by friction or power means.

(18) A "cab" is housing which covers the rotating superstructure machinery and/or operator's station. On truck crane trucks a separate cab covers the driver's station.

(19) The "clutch" is a friction, electromagnetic, hydraulic, pneumatic, or positive mechanical device for engagement or disengagement of power.

(20) The "counterweight" is a weight used to supplement the weight of the machine in providing stability for lifting working loads.

(21) "Designated" means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

(22) The "drum" is the cylindrical members around which ropes are wound for raising and lowering the load or boom.

(23) "Dynamic" (loading) means loads introduced into the machine or its components by forces in motion.

(24) The "gantry" (A-frame) is a structural frame, extending above the superstructure, to which the boom supports ropes are reeved.

(25) A "jib" is an extension attached to the boom point to provide added boom length for lifting specified loads. The jib may be in line with the boom or offset to various angles.

(26) "Load" (working) means the external load, in pounds, applied to the crane, including the weight of load-attaching equipment such as load blocks, shackles, and slings.

(27) "Load block" (upper) means the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended from the boom point.

(28) "Load block" (lower) means the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended by the hoisting ropes.

(29) A "load hoist" is a hoist drum and rope reeving system used for hoisting and lowering loads.

(30) "Load ratings" are crane ratings in pounds established by the manufacturer in accordance with WAC 296-24-24005.

(31) "Outriggers" are extendable or fixed metal arms, attached to the mounting base, which rest on supports at the outer ends.

(32) "Rail clamp" means a tong-like metal device, mounted on a locomotive crane car, which can be connected to the track.

(33) "Reeving" means a rope system in which the rope travels around drums and sheaves.

(34) "Rope" refers to a wire rope unless otherwise specified.

(35) "Side loading" means a load applied at an angle to the vertical plane of the boom.

(36) A "standby crane" is a crane which is not in regular service but which is used occasionally or intermittently as required.

(37) A "standing (guy) rope" is a supporting rope which maintains a constant distance between the points of attachment to the two components connected by the rope.

(38) "Structural competence" means the ability of the machine and its components to withstand the stresses imposed by applied loads.

(39) "Superstructure" means the rotating upper frame structure of the machine and the operating machinery mounted thereon.

(40) "Swing" means the rotation of the superstructure for movement of loads in a horizontal direction about the axis of rotation.

(41) "Swing mechanism" means the machinery involved in providing rotation of the superstructure.

(42) "Tackle" is an assembly of ropes and sheaves arranged for hoisting and pulling.

(43) "Transit" means the moving or transporting of a crane from one jobsite to another.

(44) "Travel" means the functions of the machine moving from one location to another, on a jobsite.

(45) The "travel mechanism" is the machinery involved in providing travel.

(46) "Wheelbase" means the distance between centers of front and rear axles. For a multiple axle assembly the axle center for wheelbase measurement is taken as the midpoint of the assembly.

(47) The "whipline" (auxiliary hoist) is a separate hoist rope system of lighter load capacity and higher speed than provided by the main hoist.

(48) A "winch head" is a power driven spool for handling of loads by means of friction between fiber or wire rope and spool.

[Order 73-5, § 296-24-24001, filed 5/9/73 and Order 73-4, § 296-24-24001, filed 5/7/73.]

WAC 296-24-24003 General requirements. (1) Application. This section applies to crawler cranes, locomotive cranes, wheel mounted cranes of both truck and self-propelled wheel type, and any variations thereof which retain the same fundamental characteristics. This section includes only cranes of the above types, which are basically powered by internal combustion engines or electric motors and which utilize drums and ropes. Cranes designed for railway and automobile wreck clearances are excepted. The requirements of these standards are applicable only to machines when used as lifting cranes.

(2) New and existing equipment. All new crawler, locomotive, and truck cranes constructed and utilized on or after the effective date of these standards, shall meet the design specifications of the American National Standard Safety Code for Crawler, Locomotive, and Truck Cranes, ANSI B 30.5-1968. Crawler, locomotive, and truck cranes constructed prior to the effective date of these standards should be modified to conform to those design specifications by December 31, 1973, unless it can be shown that the crane cannot feasibly or economically be altered and that the crane substantially complies with the requirements of this section. Replacement parts shall be of equal or better quality than the original equipment and suitable for the purpose. Repairs or modifications shall be such as to render the equipment equal to or better than the original construction or design.

(3) Designated personnel. Only designated personnel shall be permitted to operate a crane covered by this section.

[Order 74-27, § 296-24-24003, filed 5/7/74; Order 73-5, § 296-24-24003, filed 5/9/73 and Order 73-4, § 296-24-24003, filed 5/7/73.]

WAC 296-24-24005 Load ratings. (1) Load ratings—Where stability governs lifting performance.

(a) The margin of stability for determination of load ratings, with booms of stipulated lengths at stipulated working radii for the various types of crane mountings is established by taking a percentage of the loads which will produce a condition of tipping or balance with the boom in the least stable direction, relative to the mounting. The load ratings shall not exceed the following percentages for cranes, with the indicated types of mounting under conditions stipulated in (1)(b) and (c) of this section.

Type of crane mounting:	Maximum load ratings (percent of tipping loads)
Locomotive, without outriggers;	
Booms 60 feet or less	85
Booms over 60 feet	85[1]
Locomotive, using outriggers fully extended	80
Crawler, without outriggers	75
Crawler, using outriggers fully extended	85
Truck and wheel mounted without outriggers or using outriggers fully extended	85

[1] Unless this results in less than 30,000 pound-feet net stabilizing moment about the rail, which shall be minimum with such booms.

(b) The following stipulation shall govern the application of the values in (1)(a) of this section for locomotive cranes:

(i) Tipping with or without the use of outriggers occurs when half of the wheels farthest from the load leave the rail.

(ii) The crane shall be standing on track which is level within 1 percent grade.

(iii) Radius of the load is the horizontal distance from a projection of the axis of rotation to the rail support surface, before loading, to the center of vertical hoist line or tackle with load applied.

(iv) Tipping loads from which ratings are determined shall be applied under static conditions only, i.e., without dynamic effect of hoisting, lowering, or swinging.

(v) The weight of all auxiliary handling devices such as hoist blocks, hooks, and slings shall be considered a part of the load rating.

(c) Stipulations governing the application of the values in (1)(a) of this section for crawler, truck, and wheel-mounted cranes shall be in accordance with Crane Load-Stability Test Code. Society of Automotive Engineers (SAE) J765.

Note: The effectiveness of these preceding stability factors will be influenced by such additional factors as freely suspended loads, track, wind, or ground conditions, condition and inflation of rubber tires, boom lengths, proper operating speeds for existing conditions, and, in general, careful and competent operation. All of these shall be taken into account by the user.

(2) Rated capacity chart. A chart indicating the manufacturer's rated capacity at all operating radii for all permissible boom lengths and jib lengths with alternate ratings for optional equipment affecting such ratings shall be posted in all mobile type cranes and shall be readily visible to the operator in the normal operating position.

(3) Inspection classification. Initial inspection. Prior to initial use all new and altered cranes shall be inspected to insure compliance with provisions of these standards.

(4) All hooks shall be of the safety latch-type or the hook shall be moused.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-24005, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-24005, filed 7/31/79; Order 73-5, § 296-24-24005, filed 5/9/73 and Order 73-4, § 296-24-24005, filed 5/7/73.]

WAC 296-24-24007 Inspection classification. (1) Regular inspection. Inspection procedure for cranes in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the crane and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as "frequent" and "periodic" with respective intervals between inspections as defined below:

(a) Frequent inspection: Daily to monthly intervals.

(b) Periodic inspection: One- to 12-month intervals, or as specifically recommended by the manufacturer.

(2) Frequent inspection. Items such as the following shall be inspected for defects at intervals as defined in (2)(a) of this section or as specifically indicated including observation during operation for any defects which might appear between regular inspection. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) All control mechanisms for maladjustment interfering with proper operation: Daily.

(b) All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.

(c) All safety devices for malfunction.

(d) Deterioration or leakage in air or hydraulic systems: Daily.

(e) Crane hooks with deformations or cracks. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook.

(f) Rope reeving for noncompliance with manufacturer's recommendations.

(g) Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, and moisture accumulation.

(3) Periodic inspection. Complete inspections of the crane shall be performed at intervals as generally defined in (2)(b) of this section depending upon its activity, severity of service, and environment, or as specifically indicated below. These inspections shall include the requirements of (3) of this section and in addition, items such as the following. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) Deformed, cracked, or corroded members, in the crane structure and boom.

(b) Loose bolts or rivets.

(c) Cracked or worn sheaves and drums.

(d) Worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers and locking devices.

(e) Excessive wear on brake and clutch system parts, linings, pawls, and ratchets.

(f) Load, boom angle, and other indicators over their full range, for any significant inaccuracies.

(g) Gasoline, diesel, electric, or other power plants for improper performance or noncompliance with safety requirements.

(h) Excessive wear of chain-drive sprockets and excessive chain stretch.

(i) Travel steering, braking, and locking devices, for malfunction.

(j) Excessively worn or damaged tires.

(4) Cranes not in regular use.

(a) A crane which has been idle for a period of one month or more, but less than 6 months, shall be given an inspection conforming with requirements of (3) of this section and WAC 296-24-24013 (2)(b) before placing in service.

(b) A crane which has been idle for a period of six months shall be given a complete inspection conforming with requirements of (3) and (4) of this section and WAC 296-24-24013 (2)(b) before placing in service.

(c) Standby cranes shall be inspected at least semiannually in accordance with requirements of (3) of this section and WAC 296-24-24013 (2)(b). Such cranes which are exposed to adverse environment should be inspected more frequently.

(5) Inspection records. Written, dated, and signed inspection reports and records shall be made monthly on critical items in use such as brakes, crane hooks, and ropes. Records shall be kept readily available.

[Order 73-5, § 296-24-24007, filed 5/9/73 and Order 73-4, § 296-24-24007, filed 5/7/73.]

WAC 296-24-24009 Testing. (1) Operational tests.

(a) In addition to prototype tests and quality-control measures, the user of each new production crane shall require that it be tested and related data supplied by the manufacturer to the extent necessary to assure compliance with the operational requirements of this subsection including functions such as the following:

(i) Load hoisting and lowering mechanisms

(ii) Boom hoisting and lower mechanisms

(iii) Swinging mechanism

(iv) Travel mechanism

(v) Safety devices

(b) Where the complete production crane is not supplied by one manufacturer such tests shall be conducted at final assembly.

(c) Certified production-crane test results shall be made available.

(2) Rated load test.

(a) Written reports shall be available showing test procedures and confirming the adequacy of repairs or alterations.

(b) Test loads shall not exceed 110 percent of the rated load at any selected working radius.

(c) Where rerating is necessary:

(i) Crawler, truck, and wheel-mounted cranes shall be tested in accordance with SAE Recommended Practice, Crane Load Stability Test Code J765 (April 1961).

(ii) Locomotive cranes shall be tested in accordance with WAC 296-24-24005 (1)(a) and (b).

(iii) Rerating test report shall be readily available.

(d) No cranes shall be rerated in excess of the original load ratings unless such rating changes are approved by the crane manufacturer or final assembler.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-24009, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-24009, filed 5/9/73 and Order 73-4, § 296-24-24009, filed 5/7/73.]

WAC 296-24-24011 Maintenance procedure. (1) Any unsafe conditions disclosed by the inspection requirements of this section shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be done only by designated personnel.

(2) After adjustments and repairs have been made the crane shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

[Order 73-5, § 296-24-24011, filed 5/9/73 and Order 73-4, § 296-24-24011, filed 5/7/73.]

WAC 296-24-24013 Rope inspection. (1) Running ropes. A thorough inspection of all ropes in use shall be made at least once a month and a full written, dated, and signed report of rope condition kept on file where readily available. All inspections shall be performed by an appointed or authorized person. Any deterioration, resulting in appreciable loss of original strength, such as described below, shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal, or external corrosion or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution of concentration of such broken wires.

(c) Worn outside wires.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn, or improperly applied end connections.

(f) Severe kinking, crushing, cutting, or unstranding.

(2) Other ropes.

(a) Heavy wear and/or broken wires may occur in sections in contact with equalizer sheaves or other sheaves where rope travel is limited, or with saddles. Particular care shall be taken to inspect ropes at these locations.

(b) All rope which has been idle for a period of a month or more due to shut down or storage of a crane on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration and shall be performed by an appointed or authorized person whose approval shall be required for further use of the rope. A written and dated report of the rope condition shall be available.

(c) Particular care shall be taken in the inspection of nonrotating rope.

[Order 73-5, § 296-24-24013, filed 5/9/73 and Order 73-4, § 296-24-24013, filed 5/7/73.]

WAC 296-24-24015 Handling the load. (1) Size of load.

(a) No crane shall be loaded beyond the rated load, except for test purposes as provided in WAC 296-24-24009.

(b) When loads which are limited by structural competence rather than by stability are to be handled, it shall be ascertained that the weight of the load has been determined within plus or minus 10 percent before it is lifted.

(2) Attaching the load.

(a) The hoist rope shall not be wrapped around the load.

(b) The load shall be attached to the hook by means of slings or other approved devices.

(3) Moving the load.

(a) The employer shall assure that:

(i) The crane is level and where necessary blocked properly.

(ii) The load is well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

(b) Before starting to hoist, the following conditions shall be noted:

(i) Hoist rope shall not be kinked.

(ii) Multiple part lines shall not be twisted around each other.

(iii) The hook shall be brought over the load in such a manner as to prevent swinging.

(iv) If there is a slack rope condition, it should be determined that the rope is properly seated on the drum and in the sheaves.

(c) During hoisting care shall be taken that:

(i) There is no sudden acceleration or deceleration of the moving load.

(ii) The load does not contact any obstructions.

(d) Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways.

(e) No hoisting, lowering, swinging, or traveling shall be done while anyone is on the load or hook.

(f) The operator should avoid carrying loads over people.

(g) On truck mounted cranes, no loads shall be lifted over the front area except as approved by the crane manufacturer.

(h) The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.

(i) Outriggers shall be used when the load to be handled at that particular radius exceeds the rated load without outriggers as given by the manufacturer for that crane. Where floats are used they shall be securely attached to the outriggers. Wood blocks used to support outriggers shall:

(i) Be strong enough to prevent crushing.

(ii) Be free from defects.

(iii) Be of sufficient width and length to prevent shifting or toppling under load.

(j) Neither the load nor the boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

(k) Before lifting loads with locomotive cranes without using outriggers, means shall be applied to prevent the load from being carried by the truck springs.

(l) When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. They shall be required to analyze the operation and instruct

all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

(m) In transit the following additional precautions shall be exercised.

(i) The boom shall be carried in line with the direction of motion.

(ii) The superstructure shall be secured against rotation, except when negotiating turns when there is an operator in the cab or the boom is supported on a dolly.

(iii) The empty hook shall be lashed or otherwise restrained so that it cannot swing freely.

(n) Before traveling a crane with load, a designated person shall be responsible for determining and controlling safety. Decisions such as position of load, boom location, ground support, travel route, and speed of movement shall be in accord with their determinations.

(o) A crane with or without load shall not be traveled with the boom so high that it may bounce back over the cab.

(p) When rotating the crane, sudden starts and stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radii at which it can be controlled. A tag or restraint line shall be used when rotation of the load is hazardous.

(q) When a crane is to be operated at a fixed radius, the boom-hoist pawl or other positive locking device shall be engaged.

(r) Ropes shall not be handled on a winch head without the knowledge of the operator.

(s) While a winch head is being used, the operator shall be within convenient reach of the power unit control lever.

(4) Holding the load.

(a) The operator shall not be permitted to leave the control position while the load is suspended.

(b) No person should be permitted to stand or pass under a load on the hook.

(c) If the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction by activating the positive controllable means of the operator's station.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-24015, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-24015, filed 5/9/73 and Order 73-4, § 296-24-24015, filed 5/7/73.]

WAC 296-24-24017 Other requirements. (1) Rail clamps. Rail clamps shall not be used as a means of restraining tipping of a locomotive crane.

(2) Ballast or counterweight. Cranes shall not be operated without the full amount of any ballast or counterweight in place as specified by the maker, but truck cranes that have dropped the ballast or counterweight may be operated temporarily with special care and only for light loads without full ballast or counterweight in place. The ballast or counterweight in place specified by the manufacturer shall not be exceeded.

(3) Cabs.

(a) Necessary clothing and personal belongings shall be stored in such a manner as to not interfere with access or operation.

(b) Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in the tool box, and shall not be permitted to lie loose in or about the cab.

(4) Refueling.

(a) Refueling with small portable containers shall be done with an approved safety type can equipped with an automatic closing cap and flame arrester. Refer to WAC 296-24-58501(19) for definition of approved.

(b) Machines shall not be refueled with the engine running.

(5) Fire extinguishers.

(a) A carbon dioxide, dry chemical, or equivalent fire extinguisher shall be kept in the cab or vicinity of the crane.

(b) Operating and maintenance personnel shall be made familiar with the use and care of the fire extinguishers provided.

(6) Swinging locomotive cranes. A locomotive crane shall not be swung into a position where railway cars on an adjacent track might strike it, until it has been ascertained that cars are not being moved on the adjacent track and proper flag protection has been established.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-24017, filed 11/14/88; Order 73-5, § 296-24-24017, filed 5/9/73 and Order 73-4, § 296-24-24017, filed 5/7/73.]

WAC 296-24-24019 Operating near overhead electric power lines. (1) For operations near overhead electric lines see chapter 296-24 WAC Part L.

(2) Boom guards. Cage-type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not operate to alter the requirements of (1) of this section.

(3) Notification. Before the commencement of operations near electrical lines, the owners of the lines or their authorized representative shall be notified and provided with all pertinent information. The cooperation of the owner shall be requested.

(4) Overhead wires. Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line.

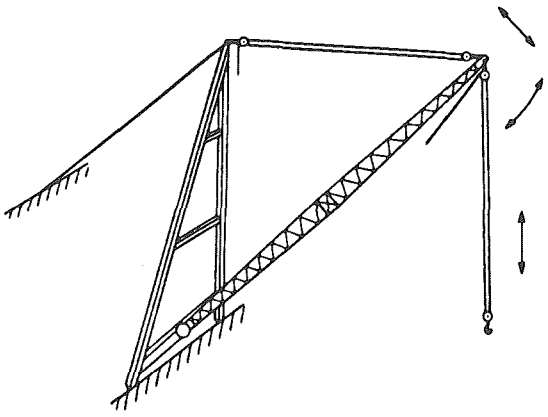
[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-24019, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-24019, filed 5/9/73 and Order 73-4, § 296-24-24019, filed 5/7/73.]

WAC 296-24-245 Derricks.

[Order 73-5, § 296-24-245, filed 5/9/73 and Order 73-4, § 296-24-245, filed 5/7/73.]

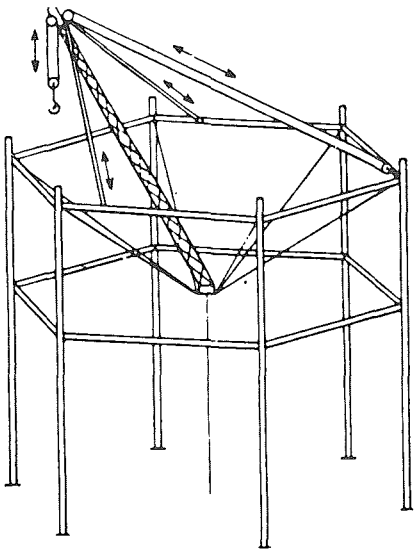
WAC 296-24-24501 Definitions. (1) A "derrick" is an apparatus consisting of a mast or equivalent member held at the head by guys or braces, with or without a boom, for use with a hoisting mechanism and operating ropes.

(2) "A-frame derrick" means a derrick in which the boom is hinged from a cross member between the bottom ends of two upright members spread apart at the lower ends and joined at the top; the boom point secured to the junction of the side members, and the side members are braced or guyed from this junction point.



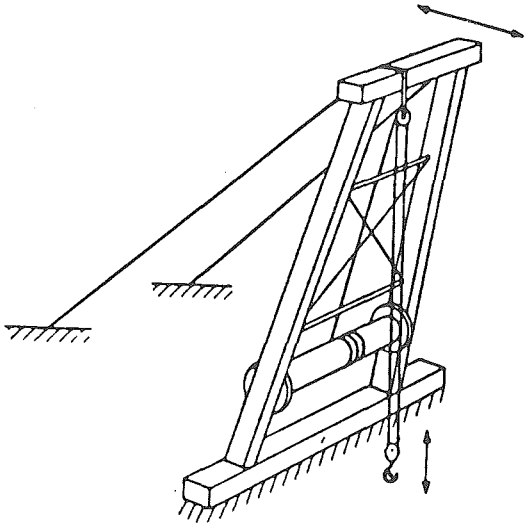
A-FRAME

(3) A "basket derrick" is a derrick without a boom, similar to a gin pole with its base supported by ropes attached to corner posts or other parts of the structure. The base is at a lower elevation than its supports. The location of the base of a basket derrick can be changed by varying the length of the rope supports. The top of the pole is secured with multiple reeved guys to position the top of the pole to the desired location by varying the length of the upper guy lines. The load is raised and lowered by ropes through a sheave or block secured to the top of the pole.



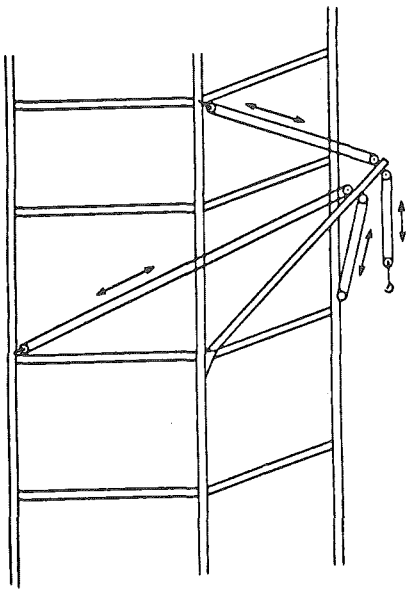
BASKET

(4) "Breast derrick" means a derrick without boom. The mast consists of two side members spread farther apart at the base than at the top and tied together at top and bottom by rigid members. The mast is prevented from tipping forward by guys connected to its top. The load is raised and lowered by ropes through a sheave or block secured to the top crosspiece.



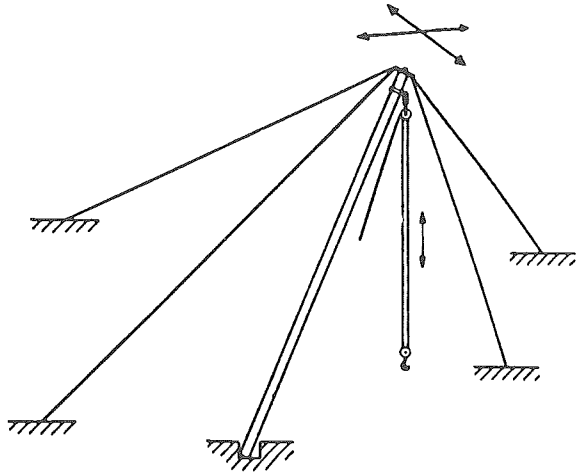
BREAST

(5) "Chicago boom derrick" means a boom which is attached to a structure, and outside upright member of the structure serving as the mast, and the boom being stepped in a fixed socket clamped to the upright. The derrick is complete with load, boom, and boom point swing line falls.



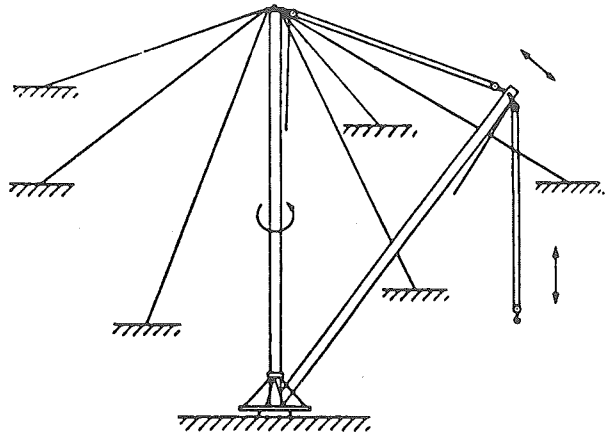
CHICAGO BOOM

(6) A "gin pole derrick" is a derrick without a boom. Its guys are so arranged from its top as to permit leaning the mast in any direction. The load is raised and lowered by ropes reeved through sheaves or blocks at the top of the mast.



GIN POLE

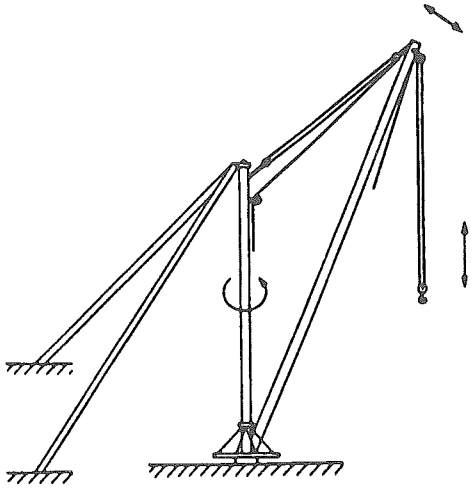
(7) "Guy derrick" means a fixed derrick consisting of a mast capable of being rotated, supported in a vertical position by guys, and a boom whose bottom end is hinged or pivoted to move in a vertical plane with a reeved rope between the head of the mast and the boom point for raising and lowering the boom, and a reeved rope from the boom point for raising and lowering the load.



GUY

(8) "Shearleg derrick" means a derrick without a boom and similar to a breast derrick. The mast, wide at the bottom and narrow at the top, is hinged at the bottom and has its top secured by a multiple reeved guy to permit handling loads at various radii by means of load tackle suspended from the mast top.

(9) A "stiffleg derrick" is a derrick similar to a guy derrick except that the mast is supported or held in place by two or more stiff members, called stifflegs, which are capable of resisting either tensile or compressive forces. Sills are generally provided to connect the lower ends of the stifflegs to the foot of the mast.



STIFF LEG

(10) "Appointed" means assigned specific responsibilities by the employer or the employer's representative.

(11) "ANSI" means the American National Standards Institute.

(12) A boom is a timber or metal section or strut, pivoted or hinged at the heel (lower end) at a location fixed in height on a frame or mast or vertical member, and with its point (upper end) supported by chains, ropes, or rods to the upper end of the frame mast, or vertical member. A rope for raising and lowering the load is reeved through sheaves or a block at the boom point. The length of the boom shall be taken as the straight line distance between the axis of the foot pin and the axis of the boom point sheave pin, or where used, the axis of the upper load block attachment pin.

(13) "Boom harness" means the block and sheave arrangement on the boom point to which the topping lift cable is reeved for lowering and raising the boom.

(14) The "boom point" is the outward end of the top section of the boom.

(15) "Derrick bullwheel" means a horizontal ring or wheel, fastened to the foot of a derrick, for the purpose of turning the derrick by means of ropes leading from this wheel to a powered drum.

(16) "Designated" means selected or assigned by the employer or employer's representative as being qualified to perform specific duties.

(17) "Eye" means a loop formed at the end of a rope by securing the dead end to the live end at the base of the loop.

(18) A "fiddle block" is a block consisting of two sheaves in the same plane held in place by the same cheek plates.

(19) The "foot bearing" or "foot block" (sill block) is the lower support on which the mast rotates.

(20) A "gudgeon pin" is a pin connecting the mast cap to the mast allowing rotation of the mast.

(21) A "guy" is a rope used to steady or secure the mast or other member in the desired position.

(22) "Load, working" means the external load, in pounds, applied to the derrick, including the weight of load attaching equipment such as load blocks, shackles, and slings.

(23) "Load block, lower" means the assembly of sheaves, pins, and frame suspended by the hoisting rope.

(24) "Load block, upper" means the assembly of sheaves, pins, and frame suspended from the boom.

(25) "Mast" means the upright member of the derrick.

(26) "Mast cap (spider)" means the fitting at the top of the mast to which the guys are connected.

(27) "Reeving" means a rope system in which the rope travels around drums and sheaves.

(28) "Rope" refers to wire rope unless otherwise specified.

(29) "Safety hook" means a hook with a latch to prevent slings or load from accidentally slipping off the hook.

(30) "Side loading" is a load applied at an angle to the vertical plane of the boom.

(31) The "sill" is a member connecting the foot block and stiffleg or a member connecting the lower ends of a double member mast.

(32) A "standby derrick" is a derrick not in regular service which is used occasionally or intermittently as required.

(33) "Stiff leg" means a rigid member supporting the mast at the head.

(34) "Swing" means rotation of the mast and/or boom for movements of loads in a horizontal direction about the axis of rotation.

[Order 73-5, § 296-24-24501, filed 5/9/73 and Order 73-4, § 296-24-24501, filed 5/7/73.]

WAC 296-24-24503 General requirements. (1) Application. This section applies to guy, stiffleg, basket, breast, gin pole, Chicago boom and A-frame derricks of the stationary type, capable of handling loads at variable reaches and powered by hoists through systems of rope reeving, used to perform lifting hook work, single or multiple line bucket work, grab, grapple, and magnet work. Derricks may be permanently installed for temporary use as in construction work. The requirements of this section also apply to any modification of these types which retain their fundamental features, except for floating derricks.

(2) New and existing equipment. All new derricks constructed and installed on or after the effective date of these standards shall meet the design specifications of the "American National Standards Institute, Safety Code for Derricks, ANSI B30.6-1969." Derricks constructed prior to the effective date of these standards should be modified to conform to these design specifications by December 31, 1973 unless it can be shown that the derrick cannot feasibly or economically be altered and that the derrick substantially complies with the requirements of this section.

(a) Operating controls shall be marked or an explanation of the controls shall be posted in full view of the operator.

(b) Cranes or derricks having a movable working boom shall have a radius or boom angle indicator installed. This shall be located where the operator can readily read it from the normal operating position.

(c) Top of boom painted. The top six feet of the boom or jib shall be painted bright yellow.

(3) Designated personnel. Only designated personnel shall be permitted to operate a derrick covered by this section.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-24503, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-24503, filed 3/1/76; Order 73-5, § 296-24-24503, filed 5/9/73 and Order 73-4, § 296-24-24503, filed 5/7/73.]

WAC 296-24-24505 Load ratings. (1) Rated load marking. For permanently installed derricks with fixed lengths of boom, guy, and mast, a substantial, durable, and clearly legible rating chart shall be provided with each derrick and securely affixed where it is visible to personnel responsible for the safe operation of the equipment. The chart shall include the following data:

(a) Manufacturer's approved load ratings at corresponding ranges of boom angle or operating radii.

(b) Specific lengths of components on which the load ratings are based.

(c) Required parts for hoist reeving. Size and construction of rope may be shown either on the rating chart or in the operating manual.

(2) Nonpermanent installations. For nonpermanent installations, the employer shall provide sufficient information from which capacity charts can be prepared for the particular installation. The capacity charts shall be located at the derricks or the jobsite office.

[Order 73-5, § 296-24-24505, filed 5/9/73 and Order 73-4, § 296-24-24505, filed 5/7/73.]

WAC 296-24-24507 Inspection. (1) Inspection classification.

(a) Prior to initial use all new and altered derricks shall be inspected to insure compliance with the provisions of these standards.

(b) Inspection procedure for derricks in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the derrick and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as frequent and periodic with respective intervals between inspections as defined below:

(i) Frequent inspection - daily to monthly intervals.

(ii) Periodic inspection - 1- to 12-month intervals, or as specified by the manufacturer.

(2) Frequent inspection. Items such as the following shall be inspected for defects at intervals as defined in (1)(b)(i) of this section or as specifically indicated, including observation during operation for any defects which might appear between regular inspections. Deficiencies shall be carefully examined for any safety hazard.

(a) All control mechanisms: Inspect daily for adjustment, wear, and lubrication.

(b) All chords and lacing: Inspect daily, visually.

(c) Tension in guys: Daily.

(d) Plumb of the mast.

(e) Deterioration or leakage in air or hydraulic systems: Daily.

(f) Derrick hooks for deformations or cracks; for hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook, refer to WAC 296-24-24511 (3)(c).

(g) Rope reeving; visual inspection for noncompliance with derrick manufacturer's recommendations.

(h) Hoist brakes, clutches, and operating levers: Check daily for proper functioning before beginning operations.

(i) Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, and moisture accumulation.

(3) Periodic inspection.

(a) Complete inspections of the derrick shall be performed at intervals as generally defined in (1)(b)(ii) of this section depending upon its activity, severity of service, and environment, or as specifically indicated below. These inspections shall include the requirements of (2) of this section and in addition, items such as the following. Deficiencies shall be carefully examined and a determination made as to whether they constitute a safety hazard:

(i) Structural members for deformations, cracks, and corrosion.

(ii) Bolts or rivets for tightness.

(iii) Parts such as pins, bearings, shafts, gears, sheaves, drums, rollers, locking and clamping devices, for wear, cracks, and distortion.

(iv) Gudgeon pin for cracks, wear, and distortion each time the derrick is to be erected.

(v) Power plants for proper performance and compliance with applicable safety requirements.

(vi) Hooks: Magnetic particle or other suitable crack detecting inspection should be performed at least once each year.

(b) Foundation or supports shall be inspected for continued ability to sustain the imposed loads.

(4) Derricks not in regular use.

(a) A derrick which has been idle for a period of 1 month or more, but less than 6 months, shall be given an inspection conforming with requirements of (2) of this section and WAC 296-24-24513(2) before placing in service.

(b) A derrick which has been idle for a period of over 6 months shall be given a complete inspection conforming with requirements of (2) and (3) of this section and WAC 296-24-24513(3) before placing in service.

(c) Standby derricks shall be inspected at least semiannually in accordance with requirements of (2) of this section and WAC 296-24-24513(3). Those exposed to adverse environment should be inspected more frequently.

[Order 73-5, § 296-24-24507, filed 5/9/73 and Order 73-4, § 296-24-24507, filed 5/7/73.]

WAC 296-24-24509 Testing. (1) Operational tests. Prior to initial use all new and altered derricks shall be tested to ensure compliance with this section including the following functions:

(a) Load hoisting and lowering.

(b) Boom up and down.

(c) Swing.

(d) Operation of clutches and brakes of hoist.

(2) Anchorages. All anchorages shall be approved by the appointed person. Rock and hairpin anchorages may require special testing.

[Order 73-5, § 296-24-24509, filed 5/9/73 and Order 73-4, § 296-24-24509, filed 5/7/73.]

WAC 296-24-24511 Maintenance. (1) Preventive maintenance. A preventive maintenance program based on the derrick manufacturer's recommendations shall be established.

(2) Maintenance procedure.

(a) Before adjustments and repairs are started on a derrick the following precautions shall be taken:

(i) The derrick to be repaired shall be arranged so it will cause the least interference with other equipment and operations in the area.

(ii) All hoist drum dogs shall be engaged.

(iii) The main or emergency switch shall be locked in the open position, if an electric hoist is used.

(iv) Warning or out of order signs shall be placed on the derrick and hoist.

(v) The repairs of booms or derricks shall either be made when the booms are lowered and adequately supported or safely tied off.

(vi) A good communication system shall be set up between the hoist operator and the appointed individual in charge of the derrick operations before any work on the equipment is started.

(vii) Welding repairs shall be approved by an appointed person.

(b) After adjustments and repairs have been made the derrick shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

(3) Adjustments and repairs.

(a) Any unsafe conditions disclosed by inspection shall be corrected before operation of the derrick is resumed.

(b) Adjustments shall be maintained to assure correct functioning of components.

(c) Repairs or replacements shall be provided promptly as needed for safe operation. The following are examples of conditions requiring prompt repair or replacement:

(i) Hooks showing defects described in WAC 296-24-24507 (2)(f) shall be discarded.

(ii) All critical parts which are cracked, broken, bent, or excessively worn.

(iii) Pitted or burned electrical contacts should be corrected only by replacement and in sets. Controller parts should be lubricated as recommended by the manufacturer.

(iv) All replacement and repaired parts shall have at least the original safety factor.

[Order 73-5, § 296-24-24511, filed 5/9/73 and Order 73-4, § 296-24-24511, filed 5/7/73.]

WAC 296-24-24513 Rope inspection. (1) Running ropes. A thorough inspection of all ropes in use shall be made at least once a month and a full written, dated, and signed report of rope condition kept on file where readily available. Any deterioration, resulting in appreciable loss of

original strength, such as described below, shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution or concentration of such broken wires.

(c) Worn outside wires.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn, or improperly applied end connections.

(f) Severe kinking, crushing, cutting, or unstranding.

(2) Idle ropes. All rope which has been idle for a period of a month or more due to shutdown or storage of derrick on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration. A written and dated report of the rope condition shall be available.

(3) Nonrotating ropes. Particular care shall be taken in the inspection of nonrotating rope.

Note: Limited travel ropes. Heavy wear and/or broken wires may occur in sections in contact with equalizer sheaves or other sheaves where rope travel is limited, or with saddles. Particular care shall be taken to inspect ropes at these locations.

[Order 73-5, § 296-24-24513, filed 5/9/73 and Order 73-4, § 296-24-24513, filed 5/7/73.]

WAC 296-24-24515 Operations of derricks. Derrick operation shall be directed only by the individual specifically designated for that purpose.

[Order 73-5, § 296-24-24515, filed 5/9/73 and Order 73-4, § 296-24-24515, filed 5/7/73.]

WAC 296-24-24517 Handling the load. (1) Size of load.

(a) No derrick shall be loaded beyond the rated load.

(b) When loads approach the maximum rating of the derrick, it shall be ascertained that the weight of the load has been determined within plus or minus 10 percent before it is lifted.

(2) Attaching the load.

(a) The hoist rope shall not be wrapped around the load.

(b) The load shall be attached to the hook by means of slings or other suitable devices.

(3) Moving the load.

(a) The load shall be well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

(b) Before starting to hoist, the following conditions shall be noted:

(i) Hoist rope shall not be kinked.

(ii) Multiple part lines shall not be twisted around each other.

(iii) The hook shall be brought over the load in such a manner as to prevent swinging.

(iv) If there is a slack rope condition, it should be determined that the rope is properly seated on the drum and in the sheaves.

(c) During hoisting, care shall be taken that:

(i) There is no sudden acceleration or deceleration of the moving load.

(ii) Load does not contact any obstructions.

(d) A derrick shall not be used for side loading except when specifically authorized by a responsible person who has determined that the various structural components will not be overstressed.

(e) No hoisting, lowering, or swinging shall be done while anyone is on the load or hook.

(f) The operator shall avoid carrying loads over people.

(g) The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.

(h) Neither the load nor boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

(i) When rotating a derrick, sudden starts and stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radius at which it can be controlled.

(j) Boom and hoisting rope systems shall not be twisted.

(4) Holding the load.

(a) The operator shall not be allowed to leave the control position while the load is suspended.

(b) People should not be permitted to stand or pass under a load on the hook.

(c) If the load must remain suspended for any considerable length of time, a dog, or pawl and ratchet, or other equivalent means, rather than the brake alone, shall be used to hold the load.

(5) Use of winch heads.

(a) Ropes shall not be handled on a winch head without the knowledge of the operator.

(b) While a winch head is being used, the operator shall be within convenient reach of the power unit control lever.

(6) Securing boom. Dogs, pawls, or other positive holding mechanism on the hoist shall be engaged. When not in use, the derrick boom shall:

(a) Be laid down;

(b) Be secured to a stationary member, as nearly under the head as possible, by attachment of a sling to the load block; or

(c) Be hoisted to a vertical position and secured to the mast.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-24517, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-24517, filed 5/9/73 and Order 73-4, § 296-24-24517, filed 5/7/73.]

WAC 296-24-24519 Other requirements. (1) Guards.

(a) Exposed moving parts, such as gears, ropes, setscrews, projecting keys, chains, chain sprockets, and reciprocating components, which constitute a hazard under normal operating conditions shall be guarded.

(b) Guards shall be securely fastened.

(c) Each guard shall be capable of supporting without permanent distortion, the weight of a two hundred-pound person unless the guard is located where it is impossible for a person to step on it.

(2) Hooks.

(a) Hooks shall meet the manufacturer's recommendations and shall not be overloaded.

(b) Safety latch type hooks shall be used or the hooks shall be moused.

(3) Fire extinguishers.

(a) A carbon dioxide, dry chemical, or equivalent fire extinguisher shall be kept in the immediate vicinity of the derrick.

(b) Operating and maintenance personnel shall be familiar with the use and care of the fire extinguishers proved.

(4) Refueling.

(a) Refueling with portable containers shall be done with approved safety type containers equipped with automatic closing spout and flame arrester. Refer to WAC 296-24-58501(19) for definition of approved.

(b) Machines shall not be refueled with the engine running.

(5) Operating near electric powerlines. For operations near overhead electric lines see chapter 296-24 WAC Part L.

(6) Cab or operating enclosure.

(a) Necessary clothing and personnel belongings shall be stored in such a manner as to not interfere with access or operation.

(b) Tools, oilcans, waste, extra fuses, and other necessary articles shall be stored in the toolbox, and shall not be permitted to lie loose in or about the cab or operating enclosure.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-24519, filed 11/22/91, effective 12/24/91; 88-23-054 (Order 88-25), § 296-24-24519, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-24519, filed 7/31/79; Order 73-5, § 296-24-24519, filed 5/9/73 and Order 73-4, § 296-24-24519, filed 5/7/73.]

WAC 296-24-260 Helicopters. (1) Helicopter regulations. Helicopter cranes shall be expected to comply with any applicable regulations of the Federal Aviation Administration.

(2) Briefing. Prior to each day's operation, a briefing shall be conducted. This briefing shall set forth the plan of operation for the pilot and ground personnel.

(3) Slings and tag lines. Load shall be properly slung. Tag lines shall be of a length that will not permit their being drawn up into rotors. Pressed sleeve, swedged eyes, or equivalent means shall be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

(4) Cargo hooks. All electrically operated cargo hooks shall have the electrical activating device so designed and installed as to prevent inadvertent operation. In addition, these cargo hooks shall be equipped with an emergency mechanical control for releasing the load. The hooks shall be tested prior to each day's operation to determine that the release functions properly, both electrically and mechanically.

(5) Personal protective equipment.

(a) Personal protective equipment for employees receiving the load shall consist of complete eye protection and hard hats secured by chin straps.

(b) Loose-fitting clothing likely to flap in the downwash and thus be snagged on hoist line shall not be worn.

(6) Loose gear and objects. Every practical precaution shall be taken to provide for the protection of the employees from flying objects in the rotor downwash. All loose gear within one hundred feet of the place of lifting the load, depositing the load, and all other areas susceptible to rotor downwash shall be secured or removed.

(7) Housekeeping. Good housekeeping shall be maintained in all helicopter loading and unloading areas.

(8) Operator responsibility. The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.

(9) Hooking and unhooking loads. Employees shall not perform work under hovering craft except for that limited period of time necessary to guide, secure and unhook loads, or to hook loads. Regardless of whether the hooking or unhooking of a load takes place on the ground or a flat roof, or other location in an elevated work position in structural members, a safe means of access and egress, to include an unprogrammed emergency escape route or routes, shall be provided for the employees who are hooking or unhooking loads.

(10) Static charge. Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

(11) Weight limitation. The weight of an external load shall not exceed the manufacturer's rating.

(12) Ground lines. Hoist wires or other gear, except for pulling lines or conductors that are allowed to "pay out" from a container or roll off a reel, shall not be attached to any fixed ground structure, or allowed to foul on any fixed structure.

(13) Visibility. When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate as far as practical reduced visibility.

(14) Signal systems. Signal systems between aircrew and ground personnel shall be understood and checked in advance of hoisting the load. This applies to either radio or hand signal systems. Handsignals shall be as shown in Figure L-1.

(15) Approach distance. No unauthorized person shall be allowed to approach within fifty feet of the helicopter when the rotor blades are turning.

(16) Approaching helicopter. Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. Employees shall avoid the area from the cockpit or cabin rearward unless authorized by the helicopter operator to work there.

(17) Personnel. Sufficient ground personnel shall be provided when required for safe helicopter loading and unloading operations.

(18) Communications. There shall be constant reliable communication between the pilot, and a designated employee of the ground crew who acts as a signalperson during the period of loading and unloading. This signalperson shall be distinctly recognizable from other ground personnel.

(19) Fires. Open fires shall not be permitted in an area that could result in such fires being spread by the rotor downwash.

(20) Under no circumstances shall the refueling of any type helicopter with either aviation gasoline or Jet B (Turbine) type fuel be permitted while the engines are running.

(21) Helicopters using Jet A (Turbine-Kerosene) type fuel may be refueled with engines running provided the following criteria is met:

(a) No unauthorized persons shall be allowed within fifty feet of the refueling operation or fueling equipment.

(b) A minimum of one thirty-pound fire extinguisher, or a combination of same, good for Class A, B and C fires, shall be provided within one hundred feet on the upwind side of the refueling operation.

(c) All fueling personnel shall be thoroughly trained in the refueling operation and in the use of the available fire extinguishing equipment they may be expected to utilize.

(d) There shall be no smoking, open flames, exposed flame heaters, flare pots, or open flame lights within fifty feet of the refueling area or fueling equipment. All entrances to the refueling area shall be posted with "NO SMOKING" signs.

(e) Due to the numerous causes of static electricity, it shall be considered present at all times. Prior to starting refueling operations, the fueling equipment and the helicopter shall be grounded and the fueling nozzle shall be electrically bonded to the helicopter. The use of conductive hose shall not be accepted to accomplish this bonding. All grounding and bonding connections shall be electrically and mechanically firm, to clean unpainted metal parts.

(f) To control spills, fuel shall be pumped either by hand or power. Pouring or gravity flow shall not be permitted. Self-closing nozzles or deadman controls shall be used and shall not be blocked open. Nozzles shall not be dragged along the ground.

(g) In case of a spill, the fueling operation shall be immediately stopped until such time as the person-in-charge determines that it is safe to resume the refueling operation.

(h) When ambient temperatures have been in the one hundred degrees Fahrenheit range for an extended period of time, all refueling of helicopters with the engines running shall be suspended until such time as conditions become suitable to resume refueling with the engines running.

(22) Helicopters with their engines stopped being refueled with aviation gasoline or Jet B (Turbine) type fuel, shall also comply with subsection (21)(a) through (g) of this section.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-260, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-24-260, filed 5/15/89, effective 6/30/89; Order 76-28, § 296-24-260, filed 9/28/76.]

WAC 296-24-293 "A" frames. (1) All timbers for "A" frames shall be of correct size, length, and condition to sustain the maximum contemplated loads.

(2) "A" frame timbers shall be braced with two spreaders spaced one-quarter the length of the "A" frame from each end. Cross bracing shall cross between the two spreaders. Bracing material shall be not less than two-thirds of the rated strength of the "A" frame timbers.

(3) Tie rods (staybolts) of not less than one-twelfth the diameter of the main "A" frame timbers shall be used. Tie rods shall be placed directly above the upper spreader and directly below the lower spreader. Ends of bolts shall be secured at each end with malleable washers and nuts.

(4) The base of the "A" frame shall be securely anchored. Elevating type "A" frames shall be set in pinion-type sockets. Pinion bases shall be securely anchored.

(5) Guy lines shall be of sufficient strength to carry the load imposed upon them and shall be securely fastened in place.

[Order 73-5, § 296-24-293, filed 5/9/73 and Order 73-4, § 296-24-293, filed 5/7/73.]

WAC 296-24-294 Rigging.

[Order 73-5, § 296-24-294, filed 5/9/73 and Order 73-4, § 296-24-294, filed 5/7/73.]

WAC 296-24-29401 Wire rope. (1) Safe loads. Whenever used in connection with work, employment, occupations or uses to which these standards are applicable, wire rope shall not be subjected to loads in excess of one-fifth the breaking load as given in the schedule of the cable manufacturer. Except as required in standard for material hoists.

(2) Condemned. When cables deteriorate through rust, wear, broken wires, undue strain or other conditions to the extent of fifteen percent of their original strength, use of cables shall be discontinued.

(3) Straps and ribbons. The strap or steel ribbon type of cable shall not be used in the suspension of scaffolding.

(4) Inspections. There shall be not less than monthly inspection of all wire rope in use, and all wire rope must be inspected before put into use.

(5) Fastening. The following methods of fastening and attaching wire rope shall be adhered to:

(a) Sockets. The end of wire rope to be set into socket fittings held securely with molten babbitt or zinc (not lead). The wires of the cable shall be frayed out and each wire bent toward the outside of socket, so that the end of each wire projects well into the depth of the socket. This method of fastening cables should be left in the hands of an experienced workers in this kind of work.

(b) Wrapping. Thimbles spliced into rope and the splice securely wrapped.

(c) Bolted. Thimbles inserted and held in place by at least a three bolt clamp or three U-bolt clips. Clamps shall be of standard size for the sizes of the cable in use.

(d) Lashing. For temporary work, by-passing rope at least twice around large object such as a post, avoiding sharp points and carrying the end back several feet and securing it by clamps, clips or lashing to the cable.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-29401, filed 7/20/94, effective 9/20/94; Order 76-29, § 296-24-29401, filed 9/30/76; Order 73-5, § 296-24-29401, filed 5/9/73 and Order 73-4, § 296-24-29401, filed 5/7/73.]

WAC 296-24-29403 Hemp rope. (1) Quality. Whenever hemp rope is used it shall be first grade long fiber Manila hemp rope.

(2) Strength. Rope shall not be used to support loads in excess of those given in table for hemp and Manila rope.

(3) Lashed. Supporting ropes shall be double lashed at each point of suspension.

(4) Pads. Where supporting ropes are brought over sharp corners of steel, stone, or other material liable to cut the rope, or are in any other way subject to abrasion, they shall be protected at such points by the use of bagging, wooden blocks or other protective padding.

(5) Knot ends. Rope knots shall have their loose and free ends lashed to the standing part in order to prevent their becoming untied.

(6) Inspection. All ropes shall be inspected before used.

(7) Defective rope. Rope badly frayed, rotted, exposed to the action of acid or caustic, or otherwise defective and unsafe, shall be condemned and destroyed to avoid all possibility of future use by mistake.

[Order 73-5, § 296-24-29403, filed 5/9/73 and Order 73-4, § 296-24-29403, filed 5/7/73.]

WAC 296-24-29405 Hemp and wire rope slings. (1) Inspection. All rope slings shall be inspected thoroughly and regularly at intervals of not more than one month, and when not in use, shall be stored in a dry place.

(2) Pads. Rope slings shall be protected with pads or blocks when wrapped around sharp edges of structural shapes, casting, etc.

(3) Slip-noose. Slings shall not be used in single strand slip-noose form.

(4) Acids. Hemp rope shall not be used as slings for handling objects contaminated with acid.

(5) How attached. Hand-ropes (guide-ropes) shall not be attached to slings but to hoisting tackle, or (only when necessary) attached to the object handled.

(6) Strength. All slings shall be of sufficient strength for handling the imposed loads. See tables given for hemp and wire ropes.

(7) Double slings. Double slings shall be used on all horizontal loads over twelve feet in length, and the distance between the points where slings are attached shall be sufficient to prevent the load from tipping up endwise.

(8) Spreaders. Spreaders shall be used where there is a danger of sling ends or "hitches" slipping together.

(9) Defective—Destroyed. Defective and unsafe slings shall be destroyed in order to avoid possibility of their being used by mistake.

[Order 73-5, § 296-24-29405, filed 5/9/73 and Order 73-4, § 296-24-29405, filed 5/7/73.]

WAC 296-24-29407 Guys. Guy wires and ropes shall be of sufficient strength to carry the load imposed upon them and shall be securely fastened in place.

[Order 73-5, § 296-24-29407, filed 5/9/73 and Order 73-4, § 296-24-29407, filed 5/7/73.]

WAC 296-24-29409 Thimbles. Wherever rope is permanently fastened by a single wrap to a metal object less in diameter or shortest measurement than three times the diameter of the rope, a galvanized thimble (of size intended for the rope) shall be inserted between the object and the loop of the rope.

[Order 73-5, § 296-24-29409, filed 5/9/73 and Order 73-4, § 296-24-29409, filed 5/7/73.]

WAC 296-24-29411 Blocks and falls. Blocks and falls shall be carefully inspected before being used. Blocks shall be of substantial construction and maintained in good condition while in use. Blocks shall fit the sizes of ropes they carry and shall not chafe or abrade the ropes running through them.

[Order 73-5, § 296-24-29411, filed 5/9/73 and Order 73-4, § 296-24-29411, filed 5/7/73.]

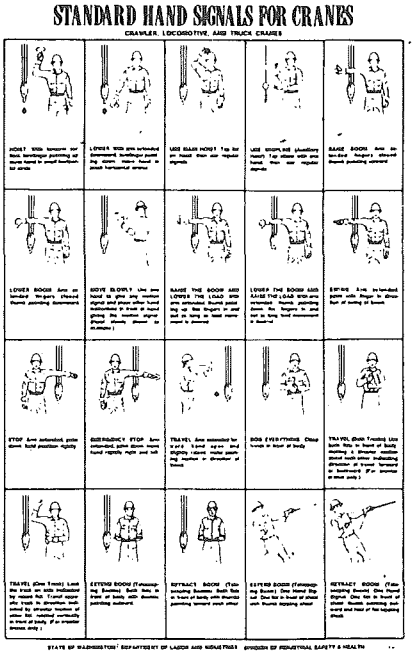
WAC 296-24-29413 Chains and cables. (1) If at any time any three foot length of chain is found to have stretched one-third the length of a link it shall be discarded.

(2) The practice of placing bolts or nails between two links to shorten chains is prohibited.

(3) Splicing broken chains by inserting a bolt between two links with the heads of the bolt and the nut sustaining the load, or passing one link through another and inserting a bolt or nail to hold it, is prohibited.

(4) Wherever annealing of chains is attempted, it shall be done in properly equipped annealing furnaces and under the direct supervision of a competent person thoroughly versed in heat treating.

(5) Cables shall be periodically inspected. A copy of the report of the inspections of each running cable shall be filed in a place readily accessible to the department, or authorized representative.



CRANE SIGNALS

1. Do not remove the load or the crane unless you understand the floor signal clearly.
2. Be careful that the load does not swing to injure your hook-on man/ woman or other floorpersons; make certain they are in the clear.
3. When raising or lowering the load, see that it will safely clear adjacent stockpiles or machinery.
4. Never pick up a load greater than the capacity of your crane. In case of doubt, call your foreperson.
5. Never do ANYTHING that is not safe.

6. Co-operate with your hook-on or floorperson. You and he/she are a team handling a valuable piece of equipment—Never let it become a hazard.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-29413, filed 11/13/80; Order 73-5, § 296-24-29413, filed 5/9/73 and Order 73-4, § 296-24-29413, filed 5/7/73.]

WAC 296-24-29415 Slings. This section applies to slings used in conjunction with other material handling equipment for the movement of material by hoisting, in employments covered by this chapter. The types of slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene).

[Order 76-6, § 296-24-29415, filed 3/1/76.]

WAC 296-24-29417 Definitions. (1) Angle of loading. Means the inclination of a leg or branch of a sling measured from the horizontal or vertical plane as shown in Fig. D-5: *Provided,* That an angle of loading of five degrees or less from the vertical may be considered a vertical angle of loading.

(2) Basket hitch. Means a sling configuration whereby the sling is passed under the load and has both ends, end attachments, eyes or handles on the hook or a single master link.

(3) Braided wire rope. Means a wire rope formed by plaiting component wire ropes.

(4) Bridle wire rope sling. Means a sling composed of multiple wire rope legs with the top ends gathered in a fitting that goes over the lifting hook.

(5) Cable laid endless sling-mechanical joint. Means a wire rope sling made endless by joining the ends of a single length of cable laid rope with one or more metallic fittings.

(6) Cable laid grommet-hand tucked. Means an endless wire rope sling made from one length of rope wrapped six times around a core formed by hand tucking the ends of the rope inside the six wraps.

(7) Cable laid rope. Means a wire rope composed of six wire ropes wrapped around a fiber or wire rope core.

(8) Cable laid rope sling-mechanical joint. Means a wire rope sling made from a cable laid rope with eyes fabricated by pressing or swagging one or more metal sleeves over the rope junction.

(9) Choker hitch. Means a sling configuration with one end of the sling passing under the load and through an end attachment, handle or eye on the other end of the sling.

(10) Coating. Means an elastomer or other suitable material applied to a sling or to a sling component to impart desirable properties.

(11) Cross rod. Means a wire used to join spirals of metal mesh to form a complete fabric. (See Fig. D-2.)

(12) Designated. Means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

(13) Equivalent entity. Means a person or organization (including an employer) which, by possession of equipment, technical knowledge and skills, can perform with equal competence the same repairs and tests as the person or organization with which it is equated.

(14) Fabric (metal mesh). Means the flexible portion of a metal mesh sling consisting of a series of transverse coils and cross rods.

(15) Female handle (choker). Means a handle with a handle eye and a slot of such dimension as to permit passage of a male handle thereby allowing the use of a metal mesh sling in a choker hitch. (See Fig. D-1.)

(16) Handle. Means a terminal fitting to which metal mesh fabric is attached. (See Fig. D-1.)

(17) Handle eye. Means an opening in a handle of a metal mesh sling shaped to accept a hook, shackle or other lifting device. (See Fig. D-1.)

(18) Hitch. Means a sling configuration whereby the sling is fastened to an object or load, either directly to it or around it.

(19) Link. Means a single ring of a chain.

(20) Male handle (triangle). Means a handle with a handle eye.

(21) Master coupling link. Means an alloy steel welded coupling link used as an intermediate link to join alloy steel chain to master links. (See Fig. D-3.)

(22) Master link or gathering ring. Means a forged or welded steel link used to support all members (legs) of an alloy steel chain sling or wire rope sling. (See Fig. D-3.)

(23) Mechanical coupling link. Means a nonwelded, mechanically closed steel link used to attach master links, hooks, etc., to alloy steel chain.

(24) Proof load. Means the load applied in performance of a proof test.

(25) Proof test. Means a nondestructive tension test performed by the sling manufacturer or an equivalent entity to verify construction and workmanship of a sling.

(26) Rated capacity or working load limit. Means the maximum working load permitted by the provisions of this section.

(27) Reach. Means the effective length of an alloy steel chain sling measured from the top bearing surface of the upper terminal component to the bottom bearing surface of the lower terminal component.

(28) Selvage edge. Means the finished edge of synthetic webbing designed to prevent unraveling.

(29) Sling. Means an assembly which connects the load to the material handling equipment.

(30) Sling manufacturer. Means a person or organization that assembles sling components into their final form for sale to users.

(31) Spiral. Means a single transverse coil that is the basic element from which metal mesh is fabricated. (See Fig. D-2.)

(32) Strand laid endless sling-mechanical joint. Means a wire rope sling made endless from one length of rope with the ends joined by one or more metallic fittings.

(33) Strand laid grommet-hand tucked. Means an endless wire rope sling made from one length of strand wrapped six times around a core formed by hand tucking the ends of the strand inside the six wraps.

(34) Strand laid rope. Means a wire rope made with strands (usually six or eight) wrapped around a fiber core, wire strand core, or independent wire rope core (IWRC).

(35) Vertical hitch. Means a method of supporting a load by a single, vertical part or leg of the sling. (See Fig. D-4.)

[Order 76-6, § 296-24-29417, filed 3/1/76.]

WAC 296-24-29419 Safe operating practices. Whenever any sling is used, the following practices shall be observed:

(1) Slings that are damaged or defective shall not be used.

(2) Slings shall not be shortened with knots or bolts or other makeshift devices.

(3) Sling legs shall not be kinked.

(4) Slings shall not be loaded in excess of their rated capacities.

(5) Slings used in a basket hitch shall have the loads balanced to prevent slippage.

(6) Slings shall be securely attached to their loads.

(7) Slings shall be padded or protected from the sharp edges of their loads.

(8) Suspended loads shall be kept clear of all obstructions.

(9) All employees shall be kept clear of loads about to be lifted and of suspended loads.

(10) Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.

(11) Shock loading is prohibited.

(12) A sling shall not be pulled from under a load when the load is resting on the sling.

[Order 76-6, § 296-24-29419, filed 3/1/76.]

WAC 296-24-29421 Inspections. Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

[Order 76-6, § 296-24-29421, filed 3/1/76.]

WAC 296-24-29423 Alloy steel chain slings. (1) Sling identification. Alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity and reach.

(2) Attachments.

(a) Hooks, rings, oblong links, pear shaped links, welded or mechanical coupling links or other attachments shall have a rated capacity at least equal to that of the alloy steel chain with which they are used or the sling shall not be used in excess of the rated capacity of the weakest component.

(b) Makeshift links or fasteners formed from bolts or rods, or other such attachments, shall not be used.

(3) Inspections.

(a) In addition to the inspection required by WAC 296-24-29421, a thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of:

(i) Frequency of sling use;

(ii) Severity of service conditions;

(iii) Nature of lifts being made; and

(iv) Experience gained on the service life of slings used in similar circumstances. Such inspections shall in no event be at intervals greater than once every 12 months.

(b) The employer shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected, and shall make such record available for examination.

(c) The thorough inspection of alloy steel chain slings shall be performed by a competent person designated by the employer, and shall include a thorough inspection for wear, defective welds, deformation and increase in length. Where such defects or deterioration are present, the sling shall be immediately removed from service.

(4) Proof testing. The employer shall ensure that before use, each new, repaired, or reconditioned alloy steel chain sling, including all welded components in the sling assembly, shall be proof tested by the sling manufacturer or equivalent entity, in accordance with paragraph 5.2 of the American Society of Testing and Materials Specification A391-65 (ANSI G61.1-1968). The employer shall retain a certificate of the proof test and shall make it available for examination.

(5) Sling use. Alloy steel chain slings shall not be used with loads in excess of the rated capacities prescribed in Table D-1. Slings not included in this table shall be used only in accordance with the manufacturer's recommendations.

(6) Safe operating temperatures. Alloy steel chain slings shall be permanently removed from service if they are heated above 1000°F. When exposed to service temperatures in excess of 600°F maximum working load limits permitted in Table D-1 shall be reduced in accordance with the chain or sling manufacturer's recommendations.

(7) Repairing and reconditioning alloy steel chain slings.

(a) Worn or damaged alloy steel chain slings or attachments shall not be used until repaired. When welding or heat testing is performed, slings shall not be used unless repaired, reconditioned and proof tested by the sling manufacturer or an equivalent entity.

(b) Mechanical coupling links or low carbon steel repair links shall not be used to repair broken lengths of chain.

(8) Effects of wear. If the chain size at any point of any links is less than that stated in Table D-2, the sling shall be removed from service.

(9) Deformed attachments.

(a) Alloy steel chain sling with cracked or deformed master links, coupling links or other components shall be removed from service.

(b) Slings shall be removed from service if hooks are cracked, have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

[Order 76-29, § 296-24-29423, filed 9/30/76; Order 76-6, § 296-24-29423, filed 3/1/76.]

WAC 296-24-29425 Wire rope slings. (1) Sling use. Wire rope slings shall not be used with loads in excess of the rated capacities shown in Tables D-3 through D-14. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Minimum sling lengths.

[Order 76-6, § 296-24-29417, filed 3/1/76.]

WAC 296-24-29419 Safe operating practices. Whenever any sling is used, the following practices shall be observed:

(1) Slings that are damaged or defective shall not be used.

(2) Slings shall not be shortened with knots or bolts or other makeshift devices.

(3) Sling legs shall not be kinked.

(4) Slings shall not be loaded in excess of their rated capacities.

(5) Slings used in a basket hitch shall have the loads balanced to prevent slippage.

(6) Slings shall be securely attached to their loads.

(7) Slings shall be padded or protected from the sharp edges of their loads.

(8) Suspended loads shall be kept clear of all obstructions.

(9) All employees shall be kept clear of loads about to be lifted and of suspended loads.

(10) Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.

(11) Shock loading is prohibited.

(12) A sling shall not be pulled from under a load when the load is resting on the sling.

[Order 76-6, § 296-24-29419, filed 3/1/76.]

WAC 296-24-29421 Inspections. Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

[Order 76-6, § 296-24-29421, filed 3/1/76.]

WAC 296-24-29423 Alloy steel chain slings. (1) Sling identification. Alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity and reach.

(2) Attachments.

(a) Hooks, rings, oblong links, pear shaped links, welded or mechanical coupling links or other attachments shall have a rated capacity at least equal to that of the alloy steel chain with which they are used or the sling shall not be used in excess of the rated capacity of the weakest component.

(b) Makeshift links or fasteners formed from bolts or rods, or other such attachments, shall not be used.

(3) Inspections.

(a) In addition to the inspection required by WAC 296-24-29421, a thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of:

(i) Frequency of sling use;

(ii) Severity of service conditions;

(iii) Nature of lifts being made; and

(iv) Experience gained on the service life of slings used in similar circumstances. Such inspections shall in no event be at intervals greater than once every 12 months.

(b) The employer shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected, and shall make such record available for examination.

(c) The thorough inspection of alloy steel chain slings shall be performed by a competent person designated by the employer, and shall include a thorough inspection for wear, defective welds, deformation and increase in length. Where such defects or deterioration are present, the sling shall be immediately removed from service.

(4) Proof testing. The employer shall ensure that before use, each new, repaired, or reconditioned alloy steel chain sling, including all welded components in the sling assembly, shall be proof tested by the sling manufacturer or equivalent entity, in accordance with paragraph 5.2 of the American Society of Testing and Materials Specification A391-65 (ANSI G61.1-1968). The employer shall retain a certificate of the proof test and shall make it available for examination.

(5) Sling use. Alloy steel chain slings shall not be used with loads in excess of the rated capacities prescribed in Table D-1. Slings not included in this table shall be used only in accordance with the manufacturer's recommendations.

(6) Safe operating temperatures. Alloy steel chain slings shall be permanently removed from service if they are heated above 1000°F. When exposed to service temperatures in excess of 600°F maximum working load limits permitted in Table D-1 shall be reduced in accordance with the chain or sling manufacturer's recommendations.

(7) Repairing and reconditioning alloy steel chain slings.

(a) Worn or damaged alloy steel chain slings or attachments shall not be used until repaired. When welding or heat testing is performed, slings shall not be used unless repaired, reconditioned and proof tested by the sling manufacturer or an equivalent entity.

(b) Mechanical coupling links or low carbon steel repair links shall not be used to repair broken lengths of chain.

(8) Effects of wear. If the chain size at any point of any links is less than that stated in Table D-2, the sling shall be removed from service.

(9) Deformed attachments.

(a) Alloy steel chain sling with cracked or deformed master links, coupling links or other components shall be removed from service.

(b) Slings shall be removed from service if hooks are cracked, have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

[Order 76-29, § 296-24-29423, filed 9/30/76; Order 76-6, § 296-24-29423, filed 3/1/76.]

WAC 296-24-29425 Wire rope slings. (1) Sling use. Wire rope slings shall not be used with loads in excess of the rated capacities shown in Tables D-3 through D-14. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Minimum sling lengths.

(a) Cable laid and 6x19 and 6x37 slings shall have a minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves or end fittings.

(b) Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.

(c) Cable laid grommets, strand laid grommets and endless slings shall have a minimum circumferential length of 96 times their body diameter.

(3) Safe operating temperatures. Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200°F. When nonfiber core wire rope slings of any grade are used at temperatures above 400°F or below minus 60°F, recommendations of the sling manufacturer regarding use at that temperature shall be followed.

(4) End attachments.

(a) Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling.

(b) All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of the proof test, and make it available for examination.

(5) Removal from service. Wire rope slings shall be immediately removed from service if any of the following conditions are present:

(a) Ten randomly distributed broken wires in one rope lay, or five broken wires in one strand in one rope lay.

(b) Wear or scraping of one-third the original diameter of outside individual wires.

(c) Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.

(d) Evidence of heat damage.

(e) End attachments that are cracked, deformed or worn.

(f) Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

(g) Corrosion of the rope or end attachments.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-29425, filed 7/31/79; Order 76-6, § 296-24-29425, filed 3/1/76.]

WAC 296-24-29427 Metal mesh slings. (1) Sling marking. Each metal mesh sling shall have permanently affixed to it a durable marking that states the rated capacity for vertical basket hitch and choker hitch loadings.

(2) Handles. Handles shall have a rated capacity at least equal to the metal fabric and exhibit no deformation after proof testing.

(3) Attachments of handles to fabric. The fabric and handles shall be joined so that:

(a) The rated capacity of the sling is not reduced.

(b) The load is evenly distributed across the width of the fabric.

(c) Sharp edges will not damage the fabric.

(4) Sling coatings. Coatings which diminish the rated capacity of a sling shall not be applied.

(5) Sling testing. All new and repaired metal mesh slings, including handles, shall not be used unless proof tested by the manufacturer or equivalent entity at a minimum of 1-1/2 times their rated capacity. Elastomer impregnated slings shall be proof tested before coating.

(6) Proper use of metal mesh slings. Metal mesh slings shall not be used to lift loads in excess of their rated capacities as prescribed in Table D-15. Slings not included in this table shall be used only in accordance with the manufacturer's recommendations.

(7) Safe operating temperatures. Metal mesh slings which are not impregnated with elastomers may be used in a temperature range from minus 20°F to plus 550°F without decreasing the working load limit. Metal mesh slings impregnated with polyvinyl chloride or neoprene may be used only in a temperature range from zero degrees to plus 200°F. For operations outside these temperature ranges or for metal mesh slings impregnated with other materials, the sling manufacturer's recommendations shall be followed.

(8) Repairs.

(a) Metal mesh slings which are repaired shall not be used unless repaired by a metal mesh sling manufacturer or an equivalent entity.

(b) Once repaired, each sling shall be permanently marked or tagged, or a written record maintained, to indicate the date and nature of the repairs and the person or organization that performed the repairs. Records of repairs shall be made available for examination.

(9) Removal from service. Metal mesh slings shall be immediately removed from service if any of the following conditions are present:

(a) A broken weld or broken brazed joint along the sling edge.

(b) Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion.

(c) Lack of flexibility due to distortion of the fabric.

(d) Distortion of the female handle so that the depth of the slot is increased more than 10 percent.

(e) Distortion of either handle so that the width of the eye is decreased more than 10 percent.

(f) A 15 percent reduction of the original cross sectional area of metal at any point around the handle eye.

(g) Distortion of either handle out of its plane.

[Order 76-6, § 296-24-29427, filed 3/1/76.]

WAC 296-24-29429 Natural and synthetic fiber rope slings. (1) Sling use.

(a) Fiber rope slings made from conventional three strand construction fiber rope shall not be used with loads in excess of the rated capacities prescribed in Tables D-16 through D-19.

(b) Fiber rope slings shall have a diameter of curvature meeting at least the minimums specified in Figs. D-4 and D-5.

(c) Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Safe operating temperatures. Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20°F to plus 180°F without decreasing the working load limit. For operations

outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.

(3) Splicing. Spliced fiber rope slings shall not be used unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:

(a) In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.

(b) In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.

(c) Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under one inch in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope one inch in diameter and larger, the tail shall project at least six inches beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

(d) Fiber rope slings shall have a minimum clear length of rope between eye splices equal to 10 times the rope diameter.

(e) Knots shall not be used in lieu of splices.

(f) Clamps not designed specifically for fiber ropes shall not be used for splicing.

(g) For all eye splices, the eye shall be of such size to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.

(4) End attachments. Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.

(5) Removal from service. Natural and synthetic fiber rope slings shall be immediately removed from service if any of the following conditions are present:

(a) Abnormal wear.

(b) Powdered fiber between strands.

(c) Broken or cut fibers.

(d) Variations in the size or roundness of strands.

(e) Discoloration or rotting.

(f) Distortion of hardware in the sling.

(6) Repairs. Only fiber rope slings made from new rope shall be used. Use of repaired or reconditioned fiber rope slings is prohibited.

[Order 76-6, § 296-24-29429, filed 3/1/76.]

WAC 296-24-29431 Synthetic web slings. (1) Sling identification. Each sling shall be marked or coded to show the rated capacities for each type of hitch and type of synthetic web material.

(2) Webbing. Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

(3) Fittings. Fittings shall be:

(a) Of a minimum breaking strength equal to that of the sling; and

(b) Free of all sharp edges that could in any way damage the webbing.

(4) Attachment of end fittings to webbing and formation of eyes. Stitching shall be the only method used to attach end fittings to webbing and to form eyes. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

(5) Sling use. Synthetic web slings illustrated in Figure D-6 shall not be used with loads in excess of the rated capacities specified in Tables D-20 through D-22. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(6) Environmental conditions. When synthetic web slings are used, the following precautions shall be taken:

(a) Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.

(b) Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

(c) Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

(7) Safe operating temperatures. Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180°F. Polypropylene web slings shall not be used at temperatures in excess of 200°F.

(8) Repairs.

(a) Synthetic web slings which are repaired shall not be used unless repaired by a sling manufacturer or an equivalent entity.

(b) Each repaired sling shall be proof tested by the manufacturer or equivalent entity to twice the rated capacity prior to its return to service. The employer shall retain a certificate of the proof test and make it available for examination.

(c) Slings, including webbing and fittings, which have been repaired in a temporary manner shall not be used.

(9) Removal from service. Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

(a) Acid or caustic burns;

(b) Melting or charring of any part of the sling surface;

(c) Snags, punctures, tears or cuts;

(d) Broken or worn stitches; or

(e) Distortion of fittings.

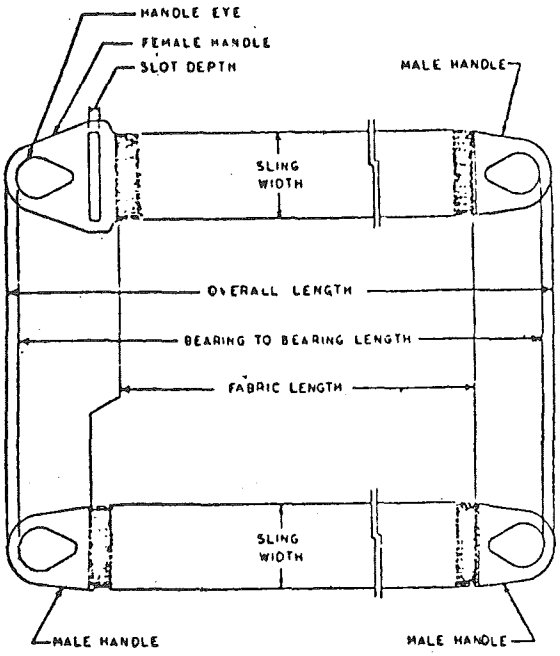


Figure D-1

Metal Mesh Sling (Typical)

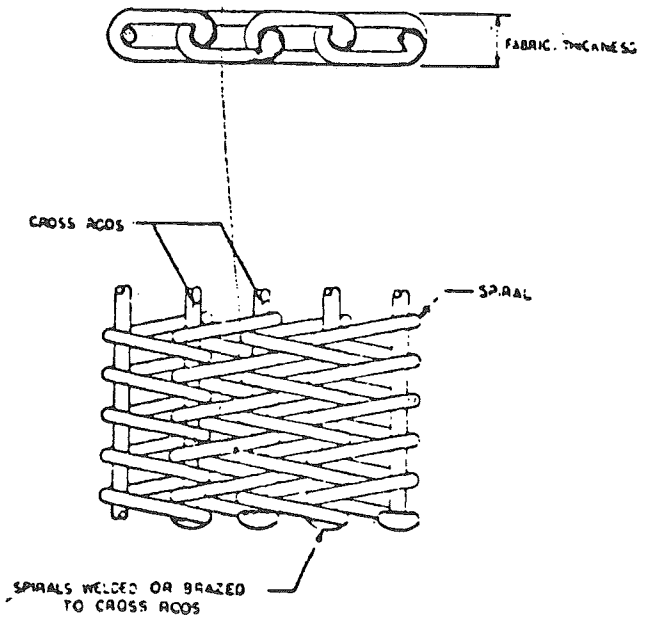


Figure D-2

Metal Mesh Construction

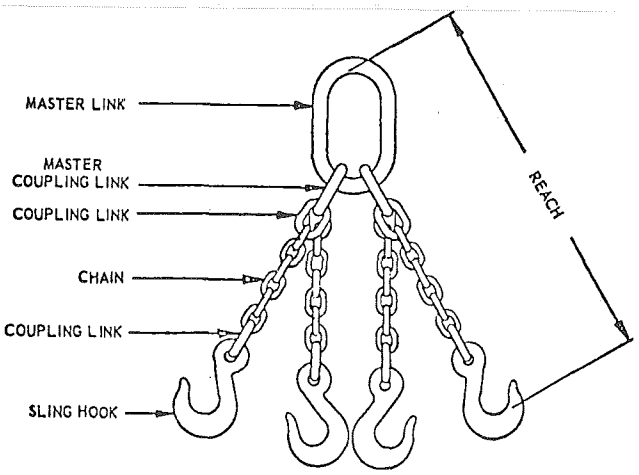


Figure D-3

Major Components of a Quadruple Sling

TABLE D-1

RATED CAPACITY (WORKING LOAD LIMIT), FOR ALLOY STEEL CHAIN SLINGS* RATED CAPACITY (WORKING LOAD LIMIT), POUNDS

TABLE D-1: Part 1—Double Slings

Chain Size, Inches	Single Branch Sling - 90 degree Loading	Double Sling Vertical Angle[1] 30 degree	45 degree	60 degree
		Horizontal Angle[2] 60 degree	45 degree	30 degree
1/4	3,250	5,650	4,550	3,250
3/8	6,600	11,400	9,300	6,600
1/2	11,250	19,500	15,900	11,250
5/8	16,500	28,500	23,300	16,500
3/4	23,000	39,800	32,500	23,000
7/8	28,750	49,800	40,600	28,750
1	38,750	67,100	54,800	38,750
1–1/8	44,500	77,000	63,000	44,500
1- 1/4	57,500	99,500	81,000	57,500
1- 3/8	67,000	116,000	94,000	67,000
1- 1/2	80,000	138,000	112,500	80,000
1- 3/4	100,000	172,000	140,000	100,000

(1)Rating of multileg slings adjusted for angle of loading measured as the included angle between the inclined leg and the vertical as shown in Figure D-5.

(2)Rating of multileg slings adjusted for angle of loading between the inclined leg and the horizontal plane of the load, as shown in Figure D-5.

(3)Quadruple sling rating is same as triple sling because normal lifting practice may not distribute load uniformly to all 4 legs.

TABLE D-1: Part 2—Triple and Quadruple Slings

Chain Size, Inches	Single Branch Sling - 90 degree Loading	Triple and Quadruple Sling[3] Vertical Angle[1] 30 degree / 60 degree Horizontal Angle[2]	Triple and Quadruple Sling[3] Vertical Angle[1] 45 degree / 45 degree Horizontal Angle[2]	Triple and Quadruple Sling[3] Vertical Angle[1] 60 degree / 30 degree Horizontal Angle[2]
1/4	3,250	8,400	6,800	4,900
3/8	6,600	17,000	14,000	9,900
1/2	11,250	29,000	24,000	17,000
5/8	16,500	43,000	35,000	24,500
3/4	23,000	59,500	48,500	34,500
7/8	28,750	74,500	61,000	43,000
1	38,750	101,000	82,000	58,000
1- 1/8	44,500	115,500	94,500	66,500
1- 1/4	57,500	149,000	121,500	86,000
1- 3/8	67,000	174,000	141,000	100,500
1- 1/2	80,000	207,000	169,000	119,500
1- 3/4	100,000	258,000	210,000	150,000

[1]Rating of multileg slings adjusted for angle of loading measured as the included angle between the inclined leg and the vertical as shown in Figure D-5.

[2]Rating of multileg slings adjusted for angle of loading between the inclined leg and the horizontal plane of the load, as shown in Figure D-5.

[3]Quadruple sling rating is same as triple sling because normal lifting practice may not distribute load uniformly to all 4 legs.

TABLE D-2

MINIMUM ALLOWABLE CHAIN SIZE AT ANY POINT OF LINK

Chain Size, Inches	Minimum Allowable Chain Size, Inches
1/4	13/64
3/8	19/64
1/2	25/64
5/8	31/64
3/4	19/32
7/8	45/64
1	13/16
1-1/8	29/32
1-1/4	1
1-3/8	1- 3/32
1-1/2	1- 3/16
1-3/4	1-13/32

TABLE D-3

RATED CAPACITIES FOR SINGLE LEG SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH FIBER CORE (FC)

Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical HT	Vertical MS	Vertical S	Choker HT	Choker MS	Choker S	Vertical Basket* HT	Vertical Basket* MS	Vertical Basket* S
1/4	6x19	0.49	0.51	0.55	0.37	0.38	0.41	0.99	1.0	1.1
5/16	6x19	0.76	0.79	0.85	0.57	0.59	0.64	1.5	1.6	1.7
3/8	6x19	1.1	1.1	1.2	0.80	0.85	0.91	2.1	2.2	2.4
7/16	6x19	1.4	1.5	1.6	1.1	1.1	1.2	2.9	3.0	3.3
1/2	6x19	1.8	2.0	2.1	1.4	1.5	1.6	3.7	3.9	4.3
9/16	6x19	2.3	2.5	2.7	1.7	1.9	2.0	4.6	5.0	5.4
5/8	6x19	2.8	3.1	3.3	2.1	2.3	2.5	5.6	6.2	6.7
3/4	6x19	3.9	4.4	4.8	2.9	3.3	3.6	7.8	8.8	9.5
7/8	6x19	5.1	5.9	6.4	3.9	4.5	4.8	10.0	12.0	13.0
1	6x19	6.7	7.7	8.4	5.0	5.8	6.3	13.0	15.0	17.0
1- 1/8	6x19	8.4	9.5	10.0	6.3	7.1	7.9	17.0	19.0	21.0
1- 1/4	6x37	9.8	11.0	12.0	7.4	8.3	9.2	20.0	22.0	25.0
1- 3/8	6x37	12.0	13.0	15.0	8.9	10.0	11.0	24.0	27.0	30.0
1- 1/2	6x37	14.0	16.0	17.0	10.0	12.0	13.0	28.0	32.0	35.0
1- 5/8	6x37	16.0	18.0	21.0	12.0	14.0	15.0	33.0	37.0	41.0
1- 3/4	6x37	19.0	21.0	24.0	14.0	16.0	18.0	38.0	43.0	48.0
2	6x37	25.0	28.0	31.0	18.0	21.0	23.0	49.0	55.0	62.0

HT = Hand tucked splice and hidden tuck splice
For hidden tuck splice (IWRC) use value in HT columns.
MS = Mechanical splice.
S = Swaged or zinc poured socket.
* These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S slings is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

TABLE D-4

RATED CAPACITIES FOR SINGLE LEG SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH INDEPENDENT WIRE ROPE CORE (IWRC)

Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical HT	Vertical MS	Vertical S	Choker HT	Choker MS	Choker S	Vertical Basket* HT	Vertical Basket* MS	Vertical Basket* S
1/4	6x19	0.53	0.56	0.59	0.40	0.42	0.44	1.0	1.1	1.2
5/16	6x19	0.81	0.87	0.92	0.61	0.65	0.69	1.6	1.7	1.8
3/8	6x19	1.1	1.2	1.3	0.86	0.93	0.98	2.3	2.5	2.6
7/16	6x19	1.5	1.7	1.8	1.2	1.3	1.3	3.1	3.4	3.5
1/2	6x19	2.0	2.2	2.3	1.5	1.6	1.7	3.9	4.4	4.6
9/16	6x19	2.5	2.7	2.9	1.8	2.1	2.2	4.9	5.5	5.8
5/8	6x19	3.0	3.4	3.6	2.2	2.5	2.7	6.0	6.8	7.2
3/4	6x19	4.2	4.9	5.1	3.1	3.6	3.8	8.4	9.7	10.0
7/8	6x19	5.5	6.6	6.9	4.1	4.9	5.2	11.0	13.0	14.0
1	6x19	7.2	8.5	9.0	5.4	6.4	6.7	14.0	17.0	18.0
1- 1/8	6x19	9.0	10.0	11.0	6.8	7.8	8.5	18.0	21.0	23.0
1- 1/4	6x37	10.0	12.0	13.0	7.9	9.2	9.9	21.0	24.0	26.0
1- 3/8	6x37	13.0	15.0	16.0	9.6	11.0	12.0	25.0	29.0	32.0
1- 1/2	6x37	15.0	17.0	19.0	11.0	13.0	14.0	30.0	35.0	38.0
1- 5/8	6x37	18.0	20.0	22.0	13.0	15.0	17.0	35.0	41.0	44.0
1- 3/4	6x37	20.0	24.0	26.0	15.0	18.0	19.0	41.0	47.0	51.0
2	6x37	26.0	30.0	33.0	20.0	23.0	25.0	53.0	61.0	66.0

HT = Hand tucked splice.
For hidden tuck splice (IWRC) use Table 1 values in HT column.
MS = Mechanical splice.
S = Swaged or zinc poured socket.
* These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S slings is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

TABLE D-5

RATED CAPACITIES FOR SINGLE LEG SLINGS CABLE LAID ROPE - MECHANICAL SPLICE ONLY 7x7x7 AND 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

Rope		Rated Capacities, Tons (2,000 lb)		
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
1/4	7x7x7	0.50	0.38	1.0
3/8	7x7x7	1.1	0.81	2.0
1/2	7x7x7	1.8	1.4	3.7
5/8	7x7x7	2.8	2.1	5.5
3/4	7x7x7	3.8	2.9	7.6
5/8	7x7x19	2.9	2.2	5.8
3/4	7x7x19	4.1	3.0	8.1
7/8	7x7x19	5.4	4.0	11.0
1	7x7x19	6.9	5.1	14.0
1- 1/8	7x7x19	8.2	6.2	16.0
1- 1/4	7x7x19	9.9	7.4	20.0
3/4	7x6x19 IWRC	3.8	2.8	7.6
7/8	7x6x19 IWRC	5.0	3.8	10.0
1	7x6x19 IWRC	6.4	4.8	13.0
1- 1/8	7x6x19 IWRC	7.7	5.8	15.0
1- 1/4	7x6x19 IWRC	9.2	6.9	18.0
1- 5/16	7x6x19 IWRC	10.0	7.5	20.0
1- 3/8	7x6x19 IWRC	11.0	8.2	22.0
1- 1/2	7x6x19 IWRC	13.0	9.6	26.0

* These values only apply when the D/d ratio is 10 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

TABLE D-6

RATED CAPACITIES FOR SINGLE LEG SLINGS 8-PART AND 6-PART BRAIDED ROPE 6x7 AND 6x19 CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE 7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

Component Ropes		Rated Capacities, Tons (2,000 lb)					
Diameter (inches)	Constr.	Vertical		Choker		Basket Vertical to 30 degrees*	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6x7	0.42	0.32	0.32	0.24	0.74	0.55
1/8	6x7	0.76	0.57	0.57	0.42	1.3	0.98
3/16	6x7	1.7	1.3	1.3	0.94	2.9	2.2
3/32	7x7	0.51	0.39	0.38	0.29	0.89	0.67
1/8	7x7	0.95	0.71	0.71	0.53	1.6	1.2
3/16	7x7	2.1	1.5	1.5	1.2	3.6	2.7
3/16	6x19	1.7	1.3	1.3	0.98	3.0	2.2
1/4	6x19	3.1	2.3	2.3	1.7	5.3	4.0
5/16	6x19	4.8	3.6	3.6	2.7	8.3	6.2
3/8	6x19	6.8	5.1	5.1	3.8	12.0	8.9
7/16	6x19	9.3	6.9	6.9	5.2	16.0	12.0
1/2	6x19	12.0	9.0	9.0	6.7	21.0	15.0
9/16	6x19	15.0	11.0	11.0	8.5	26.0	20.0
5/8	6x19	19.0	14.0	14.0	10.0	32.0	24.0
3/4	6x19	27.0	20.0	20.0	15.0	46.0	35.0
7/8	6x19	36.0	27.0	27.0	20.0	62.0	47.0
1	6x19	47.0	35.0	35.0	26.0	81.0	61.0

* These values only apply when the D/d ratio is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of component rope.

TABLE D-7

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH FIBER CORE (FC)

TABLE D-7: Part 1— 2-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	0.85	0.88	0.70	0.72	0.49	0.51
5/16	6x19	1.3	1.4	1.1	1.1	0.76	0.79
3/8	6x19	1.8	1.9	1.5	1.6	1.1	1.1
7/16	6x19	2.5	2.6	2.0	2.2	1.4	1.5
1/2	6x19	3.2	3.4	2.6	2.8	1.8	2.0
9/16	6x19	4.0	4.3	3.2	3.5	2.3	2.5
5/8	6x19	4.8	5.3	4.0	4.4	2.8	3.1
3/4	6x19	6.8	7.6	5.5	6.2	3.9	4.4
7/8	6x19	8.9	10.0	7.3	8.4	5.1	5.9
1	6x19	11.0	13.0	9.4	11.0	6.7	7.7
1-1/8	6x19	14.0	16.0	12.0	13.0	8.4	9.5
1-1/4	6x37	17.0	19.0	14.0	16.0	9.8	11.0
1-3/8	6x37	20.0	23.0	17.0	19.0	12.0	13.0
1-1/2	6x37	24.0	27.0	20.0	22.0	14.0	16.0
1-5/8	6x37	28.0	32.0	23.0	26.0	16.0	18.0
1-3/4	6x37	33.0	37.0	27.0	30.0	19.0	21.0
2	6x37	43.0	48.0	35.0	39.0	25.0	28.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-7: Part 2— 3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Slings					
Dia. (Inches)	Constr.	Ver 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	1.3	1.3	1.0	1.1	0.74	0.76
5/16	6x19	2.0	2.0	1.6	1.7	1.1	1.2
3/8	6x19	2.8	2.9	2.3	2.4	1.6	1.7
7/16	6x19	3.7	4.0	3.0	3.2	2.1	2.3
1/2	6x19	4.8	5.1	3.9	4.2	2.8	3.0
9/16	6x19	6.0	6.5	4.9	5.3	3.4	3.7
5/8	6x19	7.3	8.0	5.9	6.5	4.2	4.6

3/4	6x19	10.0	11.0	8.3	9.3	5.8	6.6
7/8	6x19	13.0	15.0	11.0	13.0	7.7	8.9
1	6x19	17.0	20.0	14.0	16.0	10.0	11.0
1-1/8	6x19	22.0	24.0	18.0	20.0	13.0	14.0
1-1/4	6x37	25.0	29.0	21.0	23.0	15.0	17.0
1-3/8	6x37	31.0	35.0	25.0	28.0	18.0	20.0
1-1/2	6x37	36.0	41.0	30.0	33.0	21.0	24.0
1-5/8	6x37	43.0	48.0	35.0	39.0	25.0	28.0
1-3/4	6x37	49.0	56.0	40.0	45.0	28.0	32.0
2	6x37	64.0	72.0	52.0	59.0	37.0	41.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-8

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH INDEPENDENT WIRE ROPE CORE (IWRC)

TABLE D-8: Part 1— 2-Leg Bridle Sling

Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	0.92	0.97	0.75	0.79	0.53	0.56
5/16	6x19	1.4	1.5	1.1	1.2	0.81	0.87
3/8	6x19	2.0	2.1	1.6	1.8	1.1	1.2
7/16	6x19	2.7	2.9	2.2	2.4	1.5	1.7
1/2	6x19	3.4	3.8	2.8	3.1	2.0	2.2
9/16	6x19	4.3	4.8	3.5	3.9	2.5	2.7
5/8	6x19	5.2	5.9	4.2	4.8	3.0	3.4
3/4	6x19	7.3	8.4	5.9	6.9	4.2	4.9
7/8	6x19	9.6	11.0	7.8	9.3	5.5	6.6
1	6x19	12.0	15.0	10.0	12.0	7.2	8.5
1-1/8	6x19	16.0	18.0	13.0	15.0	9.0	10.0
1-1/4	6x37	18.0	21.0	15.0	17.0	10.0	12.0
1-3/8	6x37	22.0	25.0	18.0	21.0	13.0	15.0
1-1/2	6x37	26.0	30.0	21.0	25.0	15.0	17.0
1-5/8	6x37	31.0	35.0	25.0	29.0	18.0	20.0
1-3/4	6x37	35.0	41.0	29.0	33.0	20.0	24.0
2	6x37	46.0	53.0	37.0	43.0	26.0	30.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-8: Part 2— 3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Sling					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	1.4	1.4	1.1	1.2	0.79	0.84
5/16	6x19	2.1	2.3	1.7	1.8	1.2	1.3
3/8	6x19	3.0	3.2	2.4	2.6	1.7	1.9
7/16	6x19	4.0	4.4	3.3	3.6	2.3	2.5
1/2	6x19	5.1	5.7	4.2	4.6	3.0	3.3
9/16	6x19	6.4	7.1	5.2	5.8	3.7	4.1
5/8	6x19	7.8	8.8	6.4	7.2	4.5	5.1
3/4	6x19	11.0	13.0	8.9	10.0	6.3	7.3
7/8	6x19	14.0	17.0	12.0	14.0	8.3	9.9
1	6x19	19.0	22.0	15.0	18.0	11.0	13.0
1-1/8	6x19	23.0	27.0	19.0	22.0	13.0	16.0
1-1/4	6x37	27.0	32.0	22.0	26.0	16.0	18.0
1-3/8	6x37	33.0	38.0	27.0	31.0	19.0	22.0
1-1/2	6x37	39.0	45.0	32.0	37.0	23.0	26.0
1-5/8	6x37	46.0	53.0	38.0	43.0	27.0	31.0
1-3/4	6x37	53.0	61.0	43.0	50.0	31.0	35.0
2	6x37	68.0	79.0	56.0	65.0	40.0	46.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-9

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS CABLE LAID ROPE - MECHANICAL SPLICE ONLY 7x7x7 AND 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

TABLE D-9: Part 1— 2-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Sling		
Dia. (Inches)	Constr.	Vert 30 deg Horz 60 deg	45 degree Angle	Vert 60 deg Horz 30 deg
1/4	7x7x7	0.87	0.71	0.50
3/8	7x7x7	1.9	1.5	1.1
1/2	7x7x7	3.2	2.6	1.8
5/8	7x7x7	4.8	3.9	2.8
3/4	7x7x7	6.6	5.4	3.8
5/8	7x7x19	5.0	4.1	2.9
3/4	7x7x19	7.0	5.7	4.1
7/8	7x7x19	9.3	7.6	5.4
1	7x7x19	12.0	9.7	6.9
1-1/8	7x7x19	14.0	12.0	8.2
1-1/4	7x7x19	17.0	14.0	9.9
3/4	7x6x19 IWRC	6.6	5.4	3.8
7/8	7x6x19 IWRC	8.7	7.1	5.0
1	7x6x19 IWRC	11.0	9.0	6.4
1-1/8	7x6x19 IWRC	13.0	11.0	7.7
1-1/4	7x6x19 IWRC	16.0	13.0	9.2
1-5/16	7x6x19 IWRC	17.0	14.0	10.0
1-3/8	7x6x19 IWRC	19.0	15.0	11.0
1-1/2	7x6x19 IWRC	22.0	18.0	13.0

TABLE D-9: Part 2— 3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Sling		
Dia. (Inches)	Constr.	Vert 30 deg Horz 60 deg	45 degree Angle	Vert 60 deg Horz 30 deg
1/4	7x7x7	1.3	1.1	0.75
3/8	7x7x7	2.8	2.3	1.6
1/2	7x7x7	4.8	3.9	2.8

5/8	7x7x7	7.2	5.9	4.2
3/4	7x7x7	9.9	8.1	5.7
5/8	7x7x19	7.5	6.1	4.3
3/4	7x7x19	10.0	8.6	6.1
7/8	7x7x19	14.0	11.0	8.1
1	7x7x19	18.0	14.0	10.0
1-1/8	7x7x19	21.0	17.0	12.0
1-1/4	7x7x19	26.0	21.0	15.0
3/4	7x6x19 IWRC	9.9	8.0	5.7
7/8	7x6x19 IWRC	13.0	11.0	7.5
1	7x6x19 IWRC	17.0	13.0	9.6
1-1/8	7x6x19 IWRC	20.0	16.0	11.0
1-1/4	7x6x19 IWRC	24.0	20.0	14.0
1-5/16	7x6x19 IWRC	26.0	21.0	15.0
1-3/8	7x6x19 IWRC	28.0	23.0	16.0
1-1/2	7x6x19 IWRC	33.0	27.0	19.0

TABLE D-10

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS 8-PART AND 6-PART BRAIDED ROPE 6x7 AND 6x19 CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE 7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

TABLE D-10: Part 1— 2-Leg Bridle Slings

Component		Rated Capacities, Tons (2,000 lb)					
Rope		2-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6x7	0.74	0.55	0.60	0.45	0.42	0.32
1/8	6x7	1.3	0.98	1.1	0.80	0.76	0.57
3/16	6x7	2.9	2.2	2.4	1.8	1.7	1.3
3/32	7x7	0.89	0.67	0.72	0.55	0.51	0.39
1/8	7x7	1.6	1.2	1.3	1.0	0.95	0.71
3/16	7x7	3.6	2.7	2.9	2.2	2.1	1.5
3/16	6x19	3.0	2.2	2.4	1.8	1.7	1.3
1/4	6x19	5.3	4.0	4.3	3.2	3.1	2.3
5/16	6x19	8.3	6.2	6.7	5.0	4.8	3.6
3/8	6x19	12.0	8.9	9.7	7.2	6.8	5.1
7/16	6x19	16.0	12.0	13.0	9.8	9.3	6.9
1/2	6x19	21.0	15.0	17.0	13.0	12.0	9.0
9/16	6x19	26.0	20.0	21.0	16.0	15.0	11.0
5/8	6x19	32.0	24.0	26.0	20.0	19.0	14.0
3/4	6x19	46.0	35.0	38.0	28.0	27.0	20.0
7/8	6x19	62.0	47.0	51.0	38.0	36.0	27.0
1	6x19	81.0	61.0	66.0	50.0	47.0	35.0

TABLE D-10: Part 2— 3-Leg Bridle Slings

Component		Rated Capacities, Tons (2,000 lb)					
Rope		3-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6x7	1.1	0.83	0.90	0.68	0.64	0.48
1/8	6x7	2.0	1.5	1.6	1.2	1.1	0.85
3/16	6x7	4.4	3.3	3.6	2.7	2.5	1.9
3/32	7x7	1.3	1.0	1.1	0.82	0.77	0.58
1/8	7x7	2.5	1.8	2.0	1.5	1.4	1.1
3/16	7x7	5.4	4.0	4.4	3.3	3.1	2.3
3/16	6x19	4.5	3.4	3.7	2.8	2.6	1.9
1/4	6x19	8.0	6.0	6.5	4.9	4.6	3.4
5/16	6x19	12.0	9.3	10.0	7.6	7.1	5.4
3/8	6x19	18.0	13.0	14.0	11.0	10.0	7.7
7/16	6x19	24.0	18.0	20.0	15.0	14.0	10.0
1/2	6x19	31.0	23.0	25.0	19.0	18.0	13.0
9/16	6x19	39.0	29.0	32.0	24.0	23.0	17.0
5/8	6x19	48.0	36.0	40.0	30.0	28.0	21.0
3/4	6x19	69.0	52.0	56.0	42.0	40.0	30.0
7/8	6x19	94.0	70.0	76.0	57.0	54.0	40.0
1	6x19	122.0	91.0	99.0	74.0	70.0	53.0

TABLE D-11

RATED CAPACITIES FOR STRAND LAID GROMMET - HAND TUCKED IMPROVED PLOW STEEL GRADE ROPE

ROPE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
1/4	7x19	0.85	0.64	1.7
5/16	7x19	1.3	1.0	2.6
3/8	7x19	1.9	1.4	3.8
7/16	7x19	2.6	1.9	5.2
1/2	7x19	3.3	2.5	6.7
9/16	7x19	4.2	3.1	8.4
5/8	7x19	5.2	3.9	10.00
3/4	7x19	7.4	5.6	15.0
7/8	7x19	10.0	7.5	20.0
1	7x19	13.0	9.7	26.0
1-1/8	7x19	16.0	12.0	32.0
1-1/4	7x37	18.0	14.0	37.0
1-3/8	7x37	22.0	16.0	44.0
1-1/2	7x37	26.0	19.0	52.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which rope is bent.
d = Diameter of rope body.

TABLE D-12

RATED CAPACITIES FOR CABLE LAID GROMMET - HAND TUCKED 7x6x7 AND 7x6x19 CONSTRUCTIONS IMPROVED PLOW STEEL GRADE ROPE 7x7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

CABLE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
3/8	7x6x7	1.3	0.95	2.5
9/16	7x6x7	2.8	2.1	5.6
5/8	7x6x7	3.8	2.8	7.6
3/8	7x7x7	1.6	1.2	3.2
9/16	7x7x7	3.5	2.6	6.9
5/8	7x7x7	4.5	3.4	9.0
5/8	7x6x19	3.9	3.0	7.9
3/4	7x6x19	5.1	3.8	10.0
15/16	7x6x19	7.9	5.9	16.0
1-1/8	7x6x19	11.0	8.4	22.0
1-5/16	7x6x19	15.0	11.0	30.0
1-1/2	7x6x19	19.0	14.0	39.0
1-11/16	7x6x19	24.0	18.0	49.0
1-7/8	7x6x19	30.0	22.0	60.0
2-1/4	7x6x19	42.0	31.0	84.0
2-5/8	7x6x19	56.0	42.0	112.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which cable body is bent.
d = Diameter of cable body.

TABLE D-13

RATED CAPACITIES FOR STRAND LAID ENDLESS SLINGS - MECHANICAL JOINT IMPROVED PLOW STEEL GRADE ROPE

ROPE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
1/4	6x19 IWRC	0.92	0.69	1.8
3/8	6x19 IWRC	2.0	1.5	4.1
1/2	6x19 IWRC	3.6	2.7	7.2
5/8	6x19 IWRC	5.6	4.2	11.0
3/4	6x19 IWRC	8.0	6.0	16.0
7/8	6x19 IWRC	11.0	8.1	21.0
1	6x19 IWRC	14.0	10.0	28.0
1-1/8	6x19 IWRC	18.0	13.0	35.0
1-1/4	6x37 IWRC	21.0	15.0	41.0
1-3/8	6x37 IWRC	25.0	19.0	50.0
1-1/2	6x37 IWRC	29.0	22.0	59.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which rope is bent.
d = Diameter of rope body.

TABLE D-14

RATED CAPACITIES FOR CABLE LAID ENDLESS SLINGS - MECHANICAL JOINT 7x7x7 AND 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

CABLE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
1/4	7x7x7	0.83	0.62	1.6
3/8	7x7x7	1.8	1.3	3.5
1/2	7x7x7	3.0	2.3	6.1
5/8	7x7x7	4.5	3.4	9.1
3/4	7x7x7	6.3	4.7	12.0
5/8	7x7x19	4.7	3.5	9.5
3/4	7x7x19	6.7	5.0	13.0
7/8	7x7x19	8.9	6.6	18.0
1	7x7x19	11.0	8.5	22.0
1-1/8	7x7x19	14.0	10.0	28.0
1-1/4	7x7x19	17.0	12.0	33.0
3/4	7x6x19 IWRC	6.2	4.7	12.0
7/8	7x6x19 IWRC	8.3	6.2	16.0
1	7x6x19 IWRC	10.0	7.9	21.0
1-1/8	7x6x19 IWRC	13.0	9.7	26.0
1-1/4	7x6x19 IWRC	16.0	12.0	31.0
1-3/8	7x6x19 IWRC	18.0	14.0	37.0
1-1/2	7x6x19 IWRC	22.0	16.0	43.0

* These values only apply when the D/d value is 5 or greater where:
D = Diameter of curvature around which cable body is bent.
d = Diameter of cable body.

TABLE D-15

RATED CAPACITIES
CARBON STEEL AND STAINLESS STEEL
METAL MESH SLINGS

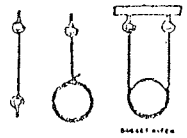
SLING WIDTH IN INCHES	 VERTICAL OR CHOKER	VERTICAL BASKET	EFFECT OF ANGLE ON RATED CAPACITIES IN BASKET HITCH  30 deg Vertical 60 deg Horizontal	45 deg Vertical 45 deg Horizontal	60 deg Vertical 30 deg Horizontal
Heavy Duty-10 Ga 35 Spirals/Ft of sling width					
2	1,500	3,000	2,600	2,100	1,500
3	2,700	5,400	4,700	3,800	2,700
4	4,000	8,000	6,900	5,600	4,000
6	6,000	12,000	10,400	8,400	6,000
8	8,000	16,000	13,800	11,300	8,000
10	10,000	20,000	17,000	14,100	10,000
12	12,000	24,000	20,700	16,900	12,000
14	14,000	28,000	24,200	19,700	14,000
16	16,000	32,000	27,700	22,600	16,000
18	18,000	36,000	31,100	25,400	18,000
20	20,000	40,000	34,600	28,200	20,000
Medium Duty-12 Ga 43 Spirals/Ft of sling width					
2	1,350	2,700	2,300	1,900	1,400
3	2,000	4,000	3,500	2,800	2,000
4	2,700	5,400	4,700	3,800	2,700
6	4,500	9,000	7,800	6,400	4,500
8	6,000	12,000	10,400	8,500	6,000
10	7,500	15,000	13,000	10,600	7,500
12	9,000	18,000	15,600	12,700	9,000
14	10,500	21,000	18,200	14,800	10,500
16	12,000	24,000	20,800	17,000	12,000
18	13,500	27,000	23,400	19,100	13,500
20	15,000	30,000	26,000	21,200	15,000
Light Duty-14 Ga 59 Spirals/Ft of sling width					
2	900	1,800	1,600	1,300	900
3	1,400	2,800	2,400	2,000	1,400
4	2,000	4,000	3,500	2,800	2,000
6	3,000	6,000	5,200	4,200	3,000
8	4,000	8,000	6,900	5,700	4,000
10	5,000	10,000	8,600	7,100	5,000
12	6,000	12,000	10,400	8,500	6,000
14	7,000	14,000	12,100	9,900	7,000
16	8,000	16,000	13,900	11,300	8,000
18	9,000	18,000	15,600	12,700	9,000
20	10,000	20,000	17,300	14,100	10,000

TABLE D-16

MANILA ROPE SLINGS

TABLE D-16: Part 1—Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING Vertical Hitch	Choker Hitch	BASKET HITCH Angle of Rope to Horizontal 90°	60°	45°	30°
				Angle of Rope to Vertical 0°	30°	45°	60°
1/2	7.5	480	240	960	830	680	480
9/16	10.4	620	310	1,240	1,070	875	620
5/8	13.3	790	395	1,580	1,370	1,120	790
3/4	16.7	970	485	1,940	1,680	1,370	970
13/16	19.5	1,170	585	2,340	2,030	1,650	1,170
7/8	22.5	1,390	695	2,780	2,410	1,970	1,390
1"	27.0	1,620	810	3,240	2,810	2,290	1,620
1 1/16	31.3	1,890	945	3,780	3,270	2,670	1,890
1 1/8	36.0	2,160	1,080	4,320	3,740	3,050	2,160
1 1/4	41.7	2,430	1,220	4,860	4,210	3,440	2,430
1 5/16	47.9	2,700	1,350	5,400	4,680	3,820	2,700
1 1/2	59.9	3,330	1,670	6,660	5,770	4,710	3,330
1 5/8	74.6	4,050	2,030	8,100	7,010	5,730	4,050
1 3/4	89.3	4,770	2,390	9,540	8,260	6,740	4,770
2"	107.5	5,580	2,790	11,200	9,660	7,890	5,580
2 1/8	125.0	6,480	3,240	13,000	11,200	9,160	6,480
2 1/4	146.0	7,380	3,690	14,800	12,800	10,400	7,380
2 1/2	166.7	8,370	4,190	16,700	14,500	11,800	8,370
2 5/8	190.8	9,360	4,680	18,700	16,200	13,200	9,360

See Figures D-4 and D-5 for sling configuration description.

TABLE D-16: Part 2—Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING Vertical Hitch	Choker Hitch	BASKET HITCH Angle of Rope to Horizontal 90°	60°	45°	30°
				Angle of Rope to Vertical 0°	30°	45°	60°
1/2	7.5	865	430	1,730	1,500	1,220	865
9/16	10.4	1,120	560	2,230	1,930	1,580	1,120
5/8	13.3	1,420	710	2,840	2,460	2,010	1,420
3/4	16.7	1,750	875	3,490	3,020	2,470	1,750
13/16	19.5	2,110	1,050	4,210	3,650	2,980	2,110
7/8	22.5	2,500	1,250	5,000	4,330	3,540	2,500
1"	27.0	2,920	1,460	5,830	5,050	4,120	2,920
1 1/16	31.3	3,400	1,700	6,800	5,890	4,810	3,400

1 1/8	36.0	3,890	1,940	7,780	6,730	5,500	3,890
1 1/4	41.7	4,370	2,190	8,750	7,580	6,190	4,370
1 5/16	47.9	4,860	2,430	9,720	8,420	6,870	4,860
1 1/2	59.9	5,990	3,000	12,000	10,400	8,480	5,990
1 5/8	74.6	7,290	3,650	14,600	12,600	10,300	7,290
1 3/4	89.3	8,590	4,290	17,200	14,900	12,100	8,590
2"	107.5	10,000	5,020	20,100	17,400	14,200	10,000
2 1/8	125.0	11,700	5,830	23,300	20,200	16,500	11,700
2 1/4	146.0	13,300	6,640	26,600	23,000	18,800	13,300
2 1/2	166.7	15,100	7,530	30,100	26,100	21,300	15,100
2 5/8	190.8	16,800	8,420	33,700	29,200	23,800	16,800

See Figures D-4 and D-5 for sling configuration description.

TABLE D-17

NYLON ROPE SLINGS

TABLE D-17: Part 1—Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
				Angle of Rope to Vertical			
		Vertical Hitch	Choker Hitch	0°	30°	45°	60°
1/2	6.5	635	320	1,270	1,100	900	635
9/16	8.3	790	395	1,580	1,370	1,120	790
5/8	10.5	1,030	515	2,060	1,780	1,460	1,030
3/4	14.5	1,410	705	2,820	2,440	1,990	1,410
13/16	17.0	1,680	840	3,360	2,910	2,380	1,680
7/8	20.0	1,980	990	3,960	3,430	2,800	1,980
1"	26.0	2,480	1,240	4,960	4,300	3,510	2,480
1 1/16	29.0	2,850	1,430	5,700	4,940	4,030	2,850
1 1/8	34.0	3,270	1,640	6,540	5,660	4,620	3,270
1 1/4	40.0	3,710	1,860	7,420	6,430	5,250	3,710
1 5/16	45.0	4,260	2,130	8,520	7,380	6,020	4,260
1 1/2	55.0	5,250	2,630	10,500	9,090	7,420	5,250
1 5/8	68.0	6,440	3,220	12,900	11,200	9,110	6,440
1 3/4	83.0	7,720	3,860	15,400	13,400	10,900	7,720
2"	95.0	9,110	4,560	18,200	15,800	12,900	9,110
2 1/8	109.0	10,500	5,250	21,000	18,200	14,800	10,500
2 1/4	129.0	12,400	6,200	24,800	21,500	17,500	12,400
2 1/2	149.0	13,900	6,950	27,800	24,100	19,700	13,900
2 5/8	168.0	16,000	8,000	32,000	27,700	22,600	16,000

See Figures D-4 and D-5 for sling configuration description.

TABLE D-17: Part 2—Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
				Angle of Rope to Vertical			
		Vertical Hitch	Choker Hitch	0°	30°	45°	60°
1/2	6.5	1,140	570	2,290	1,980	1,620	1,140
9/16	8.3	1,420	710	2,840	2,460	2,010	1,420
5/8	10.5	1,850	925	3,710	3,210	2,620	1,850
3/4	14.5	2,540	1,270	5,080	4,400	3,590	2,540
13/16	17.0	3,020	1,510	6,050	5,240	4,280	3,020
7/8	20.0	3,560	1,780	7,130	6,170	5,040	3,560
1"	26.0	4,460	2,230	8,930	7,730	6,310	4,460
1 1/16	29.0	5,130	2,570	10,300	8,890	7,260	5,130
1 1/8	34.0	5,890	2,940	11,800	10,200	8,330	5,890
1 1/4	40.0	6,680	3,340	13,400	11,600	9,450	6,680
1 5/16	45.0	7,670	3,830	15,300	13,300	10,800	7,670
1 1/2	55.0	9,450	4,730	18,900	16,400	13,400	9,450
1 5/8	68.0	11,600	5,800	23,200	20,100	16,400	11,600
1 3/4	83.0	13,900	6,950	27,800	24,100	19,700	13,900
2"	95.0	16,400	8,200	32,800	28,400	23,200	16,400
2 1/8	109.0	18,900	9,450	37,800	32,700	26,700	18,900
2 1/4	129.0	22,300	11,200	44,600	38,700	31,600	22,300
2 1/2	149.0	25,000	12,500	50,000	43,300	35,400	25,000
2 5/8	168.0	28,800	14,400	57,600	49,900	40,700	28,800

See Figures D-4 and D-5 for sling configuration description.

TABLE D-18

POLYESTER ROPE SLINGS

TABLE D-18: Part 1—Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
				Angle of Rope to Vertical			
		Vertical Hitch	Choker Hitch	0°	30°	45°	60°
1/2	8.0	635	320	1,270	1,100	900	635
9/16	10.2	790	395	1,580	1,370	1,120	790
5/8	13.0	990	495	1,980	1,710	1,400	990
3/4	17.5	1,240	620	2,480	2,150	1,750	1,240
13/16	21.0	1,540	770	3,080	2,670	2,180	1,540
7/8	25.0	1,780	890	3,560	3,080	2,520	1,780
1"	30.5	2,180	1,090	4,360	3,780	3,080	2,180
1 1/16	34.5	2,530	1,270	5,060	4,380	3,580	2,530

1 1/8	40.0	2,920	1,460	5,840	5,060	4,130	2,920
1 1/4	46.3	3,290	1,650	6,580	5,700	4,650	3,290
1 5/16	52.5	3,710	1,860	7,420	6,430	5,250	3,710
1 1/2	66.8	4,630	2,320	9,260	8,020	6,550	4,630
1 5/8	82.0	5,640	2,820	11,300	9,770	7,980	5,640
1 3/4	98.0	6,710	3,360	13,400	11,600	9,490	6,710
2"	118.0	7,920	3,960	15,800	13,700	11,200	7,920
2 1/8	135.0	9,110	4,460	18,200	15,800	12,900	9,110
2 1/4	157.0	10,600	5,300	21,200	18,400	15,000	10,600
2 1/2	181.0	12,100	6,050	24,200	21,000	17,100	12,100
2 5/8	205.0	13,600	6,800	27,200	23,600	19,200	13,600

See Figures D-4 and D-5 for sling configuration description.

TABLE D-18: Part 2—Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical			
				0°	30°	45°	60°
1/2	8.0	1,140	570	2,290	1,980	1,620	1,140
9/16	10.2	1,420	710	2,840	2,460	2,010	1,420
5/8	13.0	1,780	890	3,570	3,090	2,520	1,780
3/4	17.5	2,230	1,120	4,470	3,870	3,160	2,230
13/16	21.0	2,770	1,390	5,540	4,800	3,920	2,770
7/8	25.0	3,200	1,600	6,410	5,550	4,530	3,200
1"	30.5	3,920	1,960	7,850	6,800	5,550	3,920
1 1/16	34.5	4,550	2,280	9,110	7,990	6,440	4,550
1 1/8	40.0	5,260	2,630	10,500	9,100	7,440	5,260
1 1/4	46.3	5,920	2,960	11,800	10,300	8,380	5,920
1 5/16	52.5	6,680	3,340	13,400	11,600	9,450	6,680
1 1/2	66.8	8,330	4,170	16,700	14,400	11,800	8,330
1 5/8	82.0	10,200	5,080	20,300	17,600	14,400	10,200
1 3/4	98.0	12,100	6,040	24,200	20,900	17,100	12,100
2"	118.0	14,300	7,130	28,500	24,700	20,200	14,300
2 1/8	135.0	16,400	8,200	32,800	28,400	23,200	16,400
2 1/4	157.0	19,100	9,540	38,200	33,100	27,000	19,100
2 1/2	181.0	21,800	10,900	43,600	37,700	30,800	21,800
2 5/8	205.0	24,500	12,200	49,000	42,400	34,600	24,500

See Figures D-4 and D-5 for sling configuration description.

TABLE D-19

POLYPROPYLENE ROPE SLINGS

TABLE D-19: Part 1—Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical			
				0°	30°	45°	60°
1/2	4.7	645	325	1,290	1,120	910	645
9/16	6.1	780	390	1,560	1,350	1,100	780
5/8	7.5	950	475	1,900	1,650	1,340	950
3/4	10.7	1,300	650	2,600	2,250	1,840	1,300
13/16	12.7	1,520	760	3,040	2,630	2,150	1,520
7/8	15.0	1,760	880	3,520	3,050	2,490	1,760
1"	18.0	2,140	1,070	4,280	3,700	3,030	2,140
1 1/16	20.4	2,450	1,230	4,900	4,240	3,460	2,450
1 1/8	23.7	2,800	1,400	5,600	4,850	3,960	2,800
1 1/4	27.0	3,210	1,610	6,420	5,560	4,540	3,210
1 5/16	30.5	3,600	1,800	7,200	6,240	5,090	3,600
1 1/2	38.5	4,540	2,270	9,080	7,860	6,420	4,540
1 5/8	47.5	5,510	2,760	11,000	9,540	7,790	5,510
1 3/4	57.0	6,580	3,290	13,200	11,400	9,300	6,580
2"	69.0	7,960	3,980	15,900	13,800	11,300	7,960
2 1/8	80.0	9,330	4,670	18,700	16,200	13,200	9,330
2 1/4	92.0	10,600	5,300	21,200	18,400	15,000	10,600
2 1/2	107.0	12,200	6,100	24,400	21,100	17,300	12,200
2 5/8	120.0	13,800	6,900	27,600	23,900	19,600	13,800

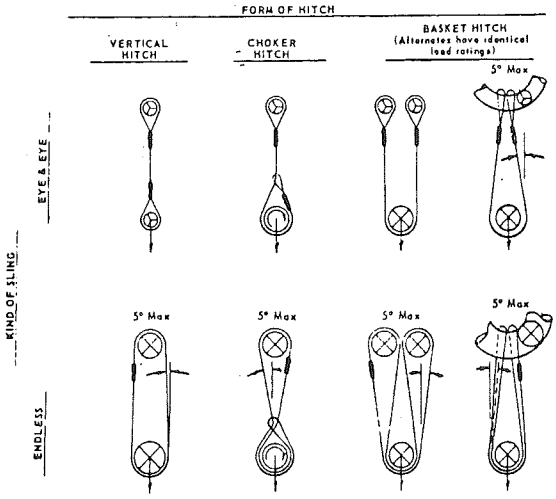
See Figures D-4 and D-5 for sling configuration description.

TABLE D-19: Part 2—Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical			
				0°	30°	45°	60°
1/2	4.7	1,160	580	2,320	2,010	1,640	1,160
9/16	6.1	1,400	700	2,810	2,430	1,990	1,400
5/8	7.5	1,710	855	3,420	2,960	2,420	1,710
3/4	10.7	2,340	1,170	4,680	4,050	3,310	2,340
13/16	12.7	2,740	1,370	5,470	4,740	3,870	2,740
7/8	15.0	3,170	1,580	6,340	5,490	4,480	3,170
1"	18.0	3,850	1,930	7,700	6,670	5,450	3,860
1 1/16	20.4	4,410	2,210	8,820	7,640	6,240	4,410

1 1/8	23.7	5,040	2,520	10,100	8,730	7,130	5,040
1 1/4	27.0	5,780	2,890	11,600	10,000	8,170	5,780
1 5/16	30.5	6,480	3,240	13,000	11,200	9,170	6,480
1 1/2	38.5	8,170	4,090	16,300	14,200	11,600	8,170
1 5/8	47.5	9,920	4,960	19,800	17,200	14,000	9,920
1 3/4	57.0	11,800	5,920	23,700	20,500	16,800	11,800
2"	69.0	14,300	7,160	28,700	24,800	20,300	14,300
2 1/8	80.0	16,800	8,400	33,600	29,100	23,800	16,800
2 1/4	92.0	19,100	9,540	38,200	33,100	27,000	19,100
2 1/2	107.0	22,000	11,000	43,900	38,000	31,100	22,000
2 5/8	120.0	24,800	12,400	49,700	43,000	35,100	24,800

See Figures D-4 and D-5 for sling configuration description.



Notes: Angles of 5° or less from the vertical may be considered vertical angles.

For slings with legs more than 5° off vertical, the actual angle as shown in Figure D-5 must be considered.

EXPLANATION OF SYMBOLS: Minimum diameter of curvature

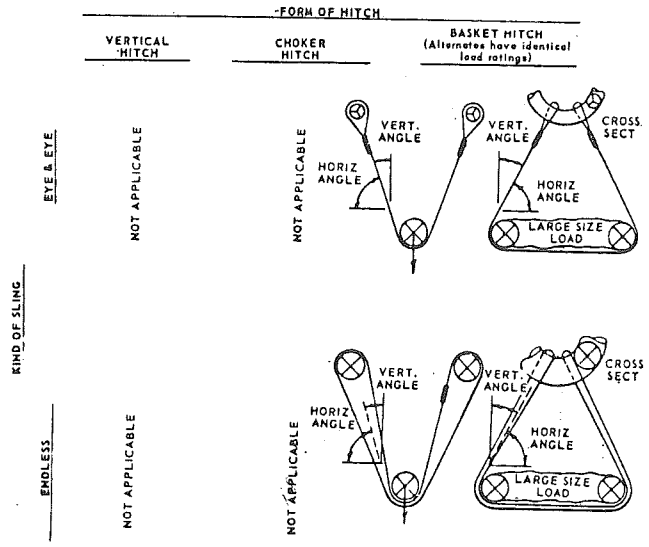
Represents a contact surface which shall have a diameter of curvature at least double the diameter of the rope.

Represents a contact surface which shall have a diameter of curvature at least 8 times the diameter of the rope.

Represents a load in a choker hitch and illustration the rotary force on the load and/or the slippage of the rope in contact with the load. Diameter of curvature of load surface shall be at least double the diameter of the rope.

Figure D-4

Basic Sling Configurations with Vertical Legs



Notes: For vertical angles of 5° or less, refer to Figure D-4 "basic sling configuration with vertical legs."

See Figure D-4 for explanation of symbols.

Figure D-5

Sling Configurations with Angled Legs

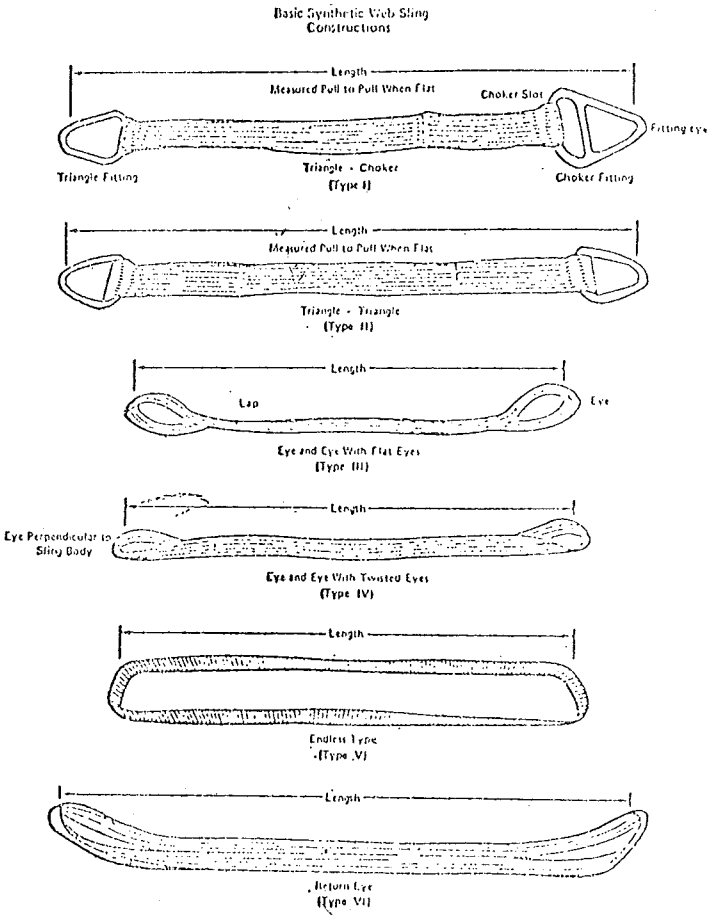


Figure D-6

Basic Synthetic Web Sling Constructions

TABLE D-20

RATED CAPACITY IN POUNDS SYNTHETIC WEB SLINGS 1,000 LBS. PER INCH OF WIDTH SINGLE PLY

(TABLE D-20: Part 1—Types I, II, III, and IV)

Sling Body Width, Inches	Triangle - Choker Slings, Type I Triangle - Triangle Slings, Type II Eye & Eye with Flat Eye Slings, Type III Eye & Eye with Twisted Eye Slings, Type IV					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,000	750	2,000	1,700	1,400	1,000
2	2,000	1,500	4,000	3,500	2,800	2,000
3	3,000	2,200	6,000	5,200	4,200	3,000
4	4,000	3,000	8,000	6,900	5,700	4,000
5	5,000	3,700	10,000	8,700	7,100	5,000
6	6,000	4,500	12,000	10,400	8,500	6,000

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-20: Part 2—Type V)

Sling Body Width, Inches	Endless Slings, Type V					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,600	1,300	3,200	2,800	2,300	1,600
2	3,200	2,600	6,400	5,500	4,500	3,200
3	4,800	3,800	9,600	8,300	6,800	4,800
4	6,400	5,100	12,800	11,100	9,000	6,400
5	8,000	6,400	16,000	13,900	11,300	8,000
6	9,600	7,700	19,200	16,600	13,600	9,600

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-20: Part 3—Type VI)

Sling Body Width, Inches	Return Eye Slings, Type VI					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	800	650	1,600	1,400	1,150	800
2	1,600	1,300	3,200	2,800	2,300	1,600
3	2,400	1,950	4,800	4,150	3,400	2,400
4	3,200	2,600	6,400	5,500	4,500	3,200
5	4,000	3,250	8,000	6,900	5,650	4,000
6	4,800	3,800	9,600	8,300	6,800	4,800

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

TABLE D-21

RATED CAPACITY IN POUNDS SYNTHETIC WEB SLINGS 1,200 LBS. PER INCH OF WIDTH SINGLE PLY

(TABLE D-21: Part 1—Types I, II, III, and IV)

Sling Body Width, Inches	Triangle - Choker Slings, Type I Triangle - Triangle Slings, Type II Eye & Eye with Flat Eye Slings, Type III Eye & Eye with Twisted Eye Slings, Type IV					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,200	900	2,400	2,100	1,700	1,200
2	2,400	1,800	4,800	4,200	3,400	2,400
3	3,600	2,700	7,200	6,200	5,100	3,600
4	4,800	3,600	9,600	8,300	6,800	4,800
5	6,000	4,500	12,000	10,400	8,500	6,000
6	7,200	5,400	14,400	12,500	10,200	7,200

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-21: Part 2—Type V)

Sling Body Width, Inches	Endless Slings, Type V					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,900	1,500	3,800	3,300	2,700	1,900
2	3,800	3,000	7,600	6,600	5,400	3,800
3	5,800	4,600	11,600	10,000	8,200	5,800
4	7,700	6,200	15,400	13,300	10,900	7,700
5	9,600	7,700	19,200	16,600	13,600	9,600
6	11,500	9,200	23,000	19,900	16,300	11,500

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-21: Part 3—Type VI)

Sling Body Width, Inches	Return Eye Slings, Type VI					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	950	750	1,900	1,650	1,350	950
2	1,900	1,500	3,800	3,300	2,700	1,900
3	2,850	2,250	5,700	4,950	4,050	2,850
4	3,800	3,000	7,600	6,600	5,400	3,800
5	4,750	3,750	9,500	8,250	6,750	4,750
6	5,800	4,600	11,600	10,000	8,200	5,800

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

TABLE D-22

RATED CAPACITY IN POUNDS SYNTHETIC WEB SLINGS 1,600 LBS. PER INCH OF WIDTH SINGLE PLY

(TABLE D-22: Part 1—Types I, II, III, and IV)

Sling Body Width, Inches	Triangle - Choker Slings, Type I Triangle - Triangle Slings, Type II Eye & Eye with Flat Eye Slings, Type III Eye & Eye with Twisted Eye Slings, Type IV					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,600	1,200	3,200	2,800	2,300	1,600
2	3,200	2,400	6,400	5,500	4,500	3,200
3	4,800	3,600	9,600	8,300	6,800	4,800
4	6,400	4,800	12,800	11,100	9,000	6,400
5	8,000	6,000	16,000	13,800	11,300	8,000
6	9,600	7,200	19,200	16,600	13,600	9,600

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

Sling Body Width, Inches	Endless Slings, Type V					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	2,600	2,100	5,200	4,500	3,700	2,600
2	5,100	4,100	10,200	8,800	7,200	5,100
3	7,700	6,200	15,400	13,300	10,900	7,700
4	10,100	8,200	20,400	17,700	14,400	10,200
5	12,800	10,200	25,600	22,200	18,100	12,800
6	15,400	12,300	30,800	26,700	21,800	15,400

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-22: Part 3—Type VI)

Sling Body Width, Inches	Return Eye Slings, Type VI					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,050	1,050	2,600	2,250	1,850	1,300
2	2,600	2,100	5,200	4,500	3,700	2,600
3	3,900	3,150	7,800	6,750	5,500	3,900
4	5,100	4,100	10,200	8,800	7,200	5,100
5	6,400	5,150	12,800	11,050	9,050	6,400
6	7,700	6,200	15,400	13,300	10,900	7,700

Notes:

1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

[Order 76-6, § 296-24-29431, filed 3/1/76.]

PART E
HAZARDOUS MATERIALS, FLAMMABLE AND COMBUSTIBLE LIQUIDS, SPRAY FINISHING, DIP TANKS

Hazardous materials

WAC 296-24-295 Compressed gases (general requirements).

[Order 73-5, § 296-24-295, filed 5/9/73 and Order 73-4, § 296-24-295, filed 5/7/73.]

WAC 296-24-29501 Inspection of compressed gas cylinders. Each employer shall determine that compressed gas cylinders under the employer's control are in a safe condition to the extent that this can be determined by visual inspection. Visual and other inspections shall be conducted as prescribed in the hazardous materials regulations of the department of transportation (49 CFR Parts 171-179 and 14 CFR Part 103). Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6-1968 and C-8-1962.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-29501, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-29501, filed 5/9/73 and Order 73-4, § 296-24-29501, filed 5/7/73.]

WAC 296-24-29503 Compressed gases. The in-plant handling, storage, and utilization of all compressed gases in cylinders, portable tanks, rail tankcars, or motor vehicle cargo tanks shall be in accordance with Compressed Gas Association Pamphlet P-1-1965.

[Order 73-5, § 296-24-29503, filed 5/9/73 and Order 73-4, § 296-24-29503, filed 5/7/73.]

WAC 296-24-29505 Safety relief devices for compressed gas containers. Compressed gas cylinders, portable tanks, and cargo tanks shall have pressure relief devices installed and maintained in accordance with Compressed Gas Association Pamphlets S-1.1-1963 and 1965 addenda and S-1.2-1963.

[Order 73-5, § 296-24-29505, filed 5/9/73 and Order 73-4, § 296-24-29505, filed 5/7/73.]

WAC 296-24-310 Acetylene.

[Order 73-5, § 296-24-310, filed 5/9/73 and Order 73-4, § 296-24-310, filed 5/7/73.]

WAC 296-24-31001 Cylinders. The in-plant transfer, handling, storage, and utilization of acetylene in cylinders shall be in accordance with Compressed Gas Association Pamphlet G-1-1966.

[Order 73-5, § 296-24-31001, filed 5/9/73 and Order 73-4, § 296-24-31001, filed 5/7/73.]

WAC 296-24-31003 Piped systems. The piped systems for the in-plant transfer and distribution of acetylene shall be designed, installed, maintained, and operated in accordance with Compressed Gas Association Pamphlet G-1.3-1959.

[Order 73-5, § 296-24-31003, filed 5/9/73 and Order 73-4, § 296-24-31003, filed 5/7/73.]

WAC 296-24-31005 Generators and filling cylinders. Plants for the generation of acetylene and the charging (filling) of acetylene cylinders shall be designed, constructed, and tested in accordance with the standards prescribed in Compressed Gas Association Pamphlet G-1.4-1966.

[Order 73-5, § 296-24-31005, filed 5/9/73 and Order 73-4, § 296-24-31005, filed 5/7/73.]

WAC 296-24-315 Hydrogen.

[Order 73-5, § 296-24-315, filed 5/9/73 and Order 73-4, § 296-24-315, filed 5/7/73.]

WAC 296-24-31501 General. (1) Definitions as used in this section.

(a) Gaseous hydrogen system is one in which the hydrogen is delivered, stored and discharged in the gaseous form to consumer's piping. The system includes stationary or movable containers, pressure regulators, safety relief devices, manifolds, interconnecting piping and controls. The system terminates at the point where hydrogen at service pressure first enters the consumer's distribution piping.

(b) Approved—Means unless otherwise indicated, listed or approved by a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(c) Listed—See "approved."

(d) ASME—American Society of Mechanical Engineers.

(e) DOT specifications—Regulations of the department of transportation published in 49 CFR Chapter I.

(f) DOT regulations—See WAC 296-24-315.

(2) Scope.

(a) Gaseous hydrogen systems.

(i) WAC 296-24-31503 applies to the installation of gaseous hydrogen systems on consumer premises where the hydrogen supply to the consumer premises originates outside the consumer premises and is delivered by mobile equipment.

(ii) WAC 296-24-31503 does not apply to gaseous hydrogen systems having a total hydrogen content of less than four hundred cubic feet, nor to hydrogen manufacturing plants or other establishments operated by the hydrogen supplier or their agent for the purpose of storing hydrogen and refilling portable containers, trailers, mobile supply trucks, or tank cars.

(b) Liquefied hydrogen systems.

(i) WAC 296-24-31505 applies to the installation of liquefied hydrogen systems on consumer premises.

(ii) WAC 296-24-31505 does not apply to liquefied hydrogen portable containers of less than one hundred fifty liters (39.63 gallons) capacity; nor to liquefied hydrogen manufacturing plants or other establishments operated by the hydrogen supplier or supplier's agent for the sole purpose of storing liquefied hydrogen and refilling portable containers, trailers, mobile supply trucks or tank cars.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-31501, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-31501, filed 11/14/88; Order 73-5, § 296-24-31501, filed 5/9/73 and Order 73-4, § 296-24-31501, filed 5/7/73.]

WAC 296-24-31503 Gaseous hydrogen systems. (1) Design.

(a) Containers.

(i) Hydrogen containers shall comply with one of the following:

(A) Designed, constructed, and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968.

(B) Designed, constructed, tested and maintained in accordance with U.S. Department of Transportation specifications and regulations.

(ii) Permanently installed containers shall be provided with substantial noncombustible supports on firm noncombustible foundations.

(iii) Each portable container shall be legibly marked with the name "hydrogen" in accordance with "marking compressed gas containers to identify the material contained" ANSI Z48.1-1954. Each manifolded hydrogen supply unit shall be legibly marked with the name hydrogen or a legend such as "this unit contains hydrogen."

(b) Safety relief devices.

(i) Hydrogen containers shall be equipped with safety relief devices as required by the ASME Boiler and Pressure Vessel Code, Section VIII Unfired Pressure Vessels, 1968 or the DOT specifications and regulations under which the container is fabricated.

(ii) Safety relief devices shall be arranged to discharge upward and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container, adjacent structure of personnel. This requirement does not apply to DOT specification containers having an internal volume of 2 cubic feet or less.

(iii) Safety relief devices or vent piping shall be designed or located so that moisture cannot collect and freeze in a manner which would interfere with proper operation of the device.

(c) Piping, tubing, and fittings.

(i) Piping, tubing, and fittings shall be suitable for hydrogen service and for the pressures and temperatures involved. Case iron pipe and fittings shall not be used.

(ii) Piping and tubing shall conform to Section 2—"Industrial Gas and Air Piping"—Code for Pressure Piping, ANSI B31.1-1967 with addenda B31.1-1969.

(iii) Joints in piping and tubing may be made by welding or brazing or by use of flanged, threaded, socket, or compression fittings. Gaskets and thread sealants shall be suitable for hydrogen service.

(d) Equipment assembly.

(i) Valves, gauges, regulators, and other accessories shall be suitable for hydrogen service.

(ii) Installation of hydrogen systems shall be supervised by personnel familiar with proper practices with reference to their construction and use.

(iii) Storage containers, piping, valves, regulating equipment, and other accessories shall be readily accessible, and shall be protected against physical damage and against tampering.

(iv) Cabinets or housings containing hydrogen control or operating equipment shall be adequately ventilated.

(v) Each mobile hydrogen supply unit used as part of a hydrogen system shall be adequately secured to prevent movement.

(vi) Mobile hydrogen supply units shall be electrically bonded to the system before discharging hydrogen.

(e) Marking. The hydrogen storage location shall be permanently placarded as follows: "HYDROGEN—FLAMMABLE GAS—NO SMOKING—NO OPEN FLAMES," or equivalent.

(f) Testing. After installations, all piping, tubing, and fittings shall be tested and proved hydrogen gas tight at maximum operating pressure.

(2) Location.

(a) General.

(i) The system shall be located so that it is readily accessible to delivery equipment and to authorized personnel.

(ii) Systems shall be located above ground.

(iii) Systems shall not be located beneath electric power lines.

(iv) Systems shall not be located close to flammable liquid piping or piping of other flammable gases.

(v) Systems near aboveground flammable liquid storage shall be located on ground higher then the flammable liquid storage except when dikes, diversion curbs, grading, or separating solid walls are used to prevent accumulation of flammable liquids under the system.

(b) Specific requirements.

(i) The location of a system, as determined by the maximum total contained volume of hydrogen, shall be in the order of preference as indicated by Roman numerals in Table H-1.

TABLE H-1

Nature of location	Size of hydrogen system		
	Less than 3,000 CF	3,000 CF to 15,000 CF	In excess of 15,000 CF
Outdoors	I	I	I.
In a separate building	II	II	II.
In a special room	III	III	Not permitted.
Inside buildings not in a special room and exposed to other occupancies	IV	Not permitted.	Not permitted.

(ii) The minimum distance in feet from a hydrogen system of indicated capacity located outdoors, in separate buildings or in special rooms to any specified outdoor exposure shall be in accordance with Table H-2.

(iii) The distances in Table H-2 Items 1, 14, and 3 to 10 inclusive do not apply where protective structures such as adequate fire walls are located between the system and the exposure.

(iv) Hydrogen systems of less than 3,000 CF when located inside buildings and exposed to other occupancies shall be situated in the building so that the system will be as follows:

(A) In an adequately ventilated area as in (3)(b)(ii) of this section.

(B) Twenty feet from stored flammable materials or oxidizing gases.

(C) Twenty-five feet from open flames, ordinary electrical equipment or other sources of ignition.

(D) Twenty-five feet from concentrations of people.

(E) Fifty feet from intakes of ventilation or air-conditioning equipment and air compressors.

(F) Fifty feet from other flammable gas storage.

(G) Protected against damage or injury due to falling objects or working activity in the area.

(H) More than one system of 3,000 CF or less may be installed in the same room, provided the systems are separated by at least 50 feet. Each such system shall meet all of the requirements of this section.

(3) Design consideration at specific locations.

(a) Outdoor locations.

(i) Where protective walls or roofs are provided, they shall be constructed of noncombustible materials.

(ii) Where the enclosing sides adjoin each other, the area shall be properly ventilated.

(iii) Electrical equipment shall meet the requirements for Class I, Division 2 hazardous locations of WAC 296-24-95613.

(b) Separate buildings.

(i) Separate buildings shall be built of at least noncombustible construction. Windows and doors shall be located so as to be readily accessible in case of emergency. Windows shall be of glass or plastic in metal frames.

(ii) Adequate ventilation to the outdoors shall be provided. Inlet openings shall be located near the floor in exterior walls only. Outlet openings shall be located at the high point of the room in exterior walls or roof. Inlet and outlet openings shall each have minimum total area of one square foot per 1,000 cubic feet of room volume. Discharge from outlet openings shall be directed or conducted to a safe location.

(iii) Explosion venting shall be provided in exterior walls or roof only. The venting area shall be equal to not less than 1 square foot per 30 cubic feet of room volume and may consist of any one or any combination of the following: Walls of light noncombustible material, preferably single thickness, single strength glass; lightly fastened hatch covers; lightly fastened swinging doors in exterior walls opening outward; lightly fastened walls or roof designed to relieve at a maximum pressure of 25 pounds per square foot.

(iv) There shall be no sources of ignition from open flames, electrical equipment, or heating equipment.

(v) Electrical equipment shall meet the requirements of chapter 296-24 WAC Part L.

(vi) Heating, if provided, shall be by steam, hot water, or other indirect means.

(c) Special rooms.

(i) Floor, walls, and ceiling shall have a fire-resistance rating of at least 2 hours. Walls or partitions shall be continuous from floor to ceiling and shall be securely anchored. At least one wall shall be an exterior wall. Openings to other parts of the building shall not be permitted. Windows and doors shall be in exterior walls and shall

be located so as to be readily accessible in case of emergency. Windows shall be of glass or plastic in metal frames.

(ii) Ventilation shall be as provided in (3)(b)(ii) of this section.

(iii) Explosion venting shall be as provided in (3)(b)(iii) of this section.

(iv) There shall be no sources of ignition from open flames, electrical equipment or heating equipment.

(v) Electrical equipment shall meet the requirements of chapter 296-24 WAC Part L.

(vi) Heating, if provided, shall be by steam, hot water, or indirect means.

(4) Operating instructions. For installations which require any operation of equipment by the user, legible instructions shall be maintained at operating locations.

(5) Maintenance.

(a) The equipment and functioning of each charged gaseous hydrogen system shall be maintained in a safe operating condition in accordance with the requirements of this section. The area within 15 feet of any hydrogen container shall be kept free of dry vegetation and combustible material.

TABLE H-2

Type of outdoor exposure		Size of hydrogen system: Less than 3,000 CF	3,000 CF to 15,000 CF	In excess of 15,000 CF
1. Building or structure	Wood frame construction*	10	25	50
	Heavy timber, noncombustible or ordinary construction*	0	10	**25
	Fire-resistive construction*	0	0	0
2. Wall openings	Not above any part of a system	10	10	10
	Above any part of a system	25	25	25
3. Flammable liquids above ground	0 to 1,000 gallons	10	25	25
	In excess of 1,000 gallons	25	50	50
4. Flammable liquids below ground—0 to 1,000 gallons	Tank	10	10	10
	Vent or fill opening of tank	25	25	25
5. Flammable liquids below ground—in excess of 1,000 gallons	Tank	20	20	20
	Vent or fill opening of tank	25	25	25
6. Flammable gas storage, either high pressure or low pressure	0 to 15,000 CF capacity	10	25	25
	In excess of 15,000 CF capacity	25	50	50
7. Oxygen storage	12,000 CF or less	Refer to NFPA No. 51, gas systems for welding and cutting (1969).		
	More than 12,000 CF	Refer to NFPA No. 566, bulk oxygen systems at consumer sites (1969).		
8. Fast burning solids such as ordinary lumber, excelsior or paper		50	50	25
9. Slow burning solids such as heavy timber or coal		25	25	25
10. Open flames and other sources of ignition		25	25	50
11. Air compressor intakes or inlets to ventilating or air-condition equipment		50	50	50
12. Concentration of people***		25	50	50
13. Public sidewalks		15	15	15
14. Line of adjoining property which may be built upon		5	5	5

*Refer to NFPA No. 220 standard types of building construction for definitions of various types of construction. (1969 Ed.)

**But not less than one-half the height of adjacent side wall of the structure.

***In congested areas such as offices, lunchrooms, locker rooms, time-clock areas, and places of public assembly.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-31503, filed 11/22/91, effective 12/24/91; 88-23-054 (Order 88-25), § 296-24-31503, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-31503, filed 4/19/85; Order 76-6, § 296-24-31503, filed 3/1/76; Order 73-5, § 296-24-31503, filed 5/9/73 and Order 73-4, § 296-24-31503, filed 5/7/73.]

WAC 296-24-31505 Liquefied hydrogen systems.

(1) Design.

(a) Containers.

(i) Hydrogen containers shall comply with the following: Storage containers shall be designed, constructed, and tested in accordance with appropriate requirements of the ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels (1968) or applicable provisions of API Standard 620, Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks, Second Edition (June 1963) and Appendix R (April 1965).

(ii) Portable containers shall be designed, constructed and tested in accordance with DOT specifications and regulations.

(b) Supports. Permanently installed containers shall be provided with substantial noncombustible supports securely anchored on firm noncombustible foundations. Steel supports in excess of 18 inches in height shall be protected with a protective coating having a 2-hour fire-resistance rating.

(c) Marking. Each container shall be legibly marked to indicate "LIQUEFIED HYDROGEN—FLAMMABLE GAS."

(d) Safety relief devices.

(i) Stationary liquefied hydrogen containers shall be equipped with safety relief devices sized in accordance with CGA Pamphlet S-1-1966, Part 3, Safety Relief Device Standards for Compressed Gas Storage Containers.

(A) Portable liquefied hydrogen containers complying with the U.S. Department of Transportation regulations shall be equipped with safety relief devices as required in the U.S. Department of Transportation specifications and regulations. Safety relief devices shall be sized in accordance with the requirements of CGA Pamphlet S-1-1966, Safety Relief Device Standards, Part 1, Compressed Gas Cylinders and Part 2, Cargo and Portable Tank Containers.

(ii) Safety relief devices shall be arranged to discharge unobstructed to the outdoors and in such a manner as to prevent impingement of escaping liquid or gas upon the container, adjacent structures or personnel. See (2)(a)(vi) of this section for venting of safety relief devices in special locations.

(iii) Safety relief devices or vent piping shall be designed or located so that moisture cannot collect and freeze in a manner which would interfere with proper operation of the device.

(iv) Safety relief devices shall be provided in piping wherever liquefied hydrogen could be trapped between closures

(e) Piping, tubing, and fittings.

(i) Piping, tubing, and fittings and gasket and thread sealants shall be suitable for hydrogen service at the pressures and temperatures involved. Consideration shall be given to the thermal expansion and contraction of piping systems when exposed to temperature fluctuations of ambient to liquefied hydrogen temperatures.

(ii) Gaseous hydrogen piping and tubing (above—20°F) shall conform to the applicable sections of Pressure Piping Section 2—Industrial Gas and Air Piping, ANSI B31.1-1967 with addenda B31.1-1969. Design of liquefied hydrogen or cold (-20°F or below) gas piping shall use Petroleum Refinery Piping ANSI B31.3-1966 or Refrigeration Piping ANSI B31.5-1966 with addenda B31.5a-1968 as a guide.

(iii) Joints in piping and tubing shall preferably be made by welding or brazing; flanged, threaded, socket, or suitable compression fittings may be used.

(iv) Means shall be provided to minimize exposure of personnel to piping operating at low temperatures and to prevent air condensate from contacting piping, structural members, and surfaces not suitable for cryogenic temperatures. Only those insulating materials which are rated nonburning in accordance with ASTM Procedures D1692-68 may be used. Other protective means may be used to protect personnel. The insulation shall be designed to have a vapor-tight seal in the outer covering to prevent the condensation of air and subsequent oxygen enrichment within the insulation. The insulation material and outside shield shall also be of adequate design to prevent attrition of the insulation due to normal operating conditions.

(v) Uninsulated piping and equipment which operate at liquefied-hydrogen temperature shall not be installed above asphalt surfaces or other combustible materials in order to prevent contact of liquid air with such materials. Drip pans may be installed under uninsulated piping and equipment to retain and vaporize condensed liquid air.

(f) Equipment assembly.

(i) Valves, gauges, regulators, and other accessories shall be suitable for liquefied hydrogen service and for the pressures and temperatures involved.

(ii) Installation of liquefied hydrogen systems shall be supervised by personnel familiar with proper practices and with reference to their construction and use.

(iii) Storage containers, piping, valves, regulating equipment, and other accessories shall be readily accessible and shall be protected against physical damage and against tampering. A shutoff valve shall be located in liquid product withdrawal lines as close to the container as practical. On containers of over 2,000 gallons capacity, this shutoff valve shall be of the remote control type with no connections, flanges, or other appurtenances (other than a welded manual shutoff valve) allowed in the piping between the shutoff valve and its connection to the inner container.

(iv) Cabinets or housings containing hydrogen control equipment shall be ventilated to prevent any accumulation of hydrogen gas.

(g) Testing.

(i) After installation, all field-erected piping shall be tested and proved hydrogen gas-tight at operating pressure and temperature.

(ii) Containers if out of service in excess of 1 year shall be inspected and tested as outlined in (1) of this section. The safety relief devices shall be checked to determine if they are operable and properly set.

(h) Liquefied hydrogen vaporizers.

(i) The vaporizer shall be anchored and its connecting piping shall be sufficiently flexible to provide for the effect of expansion and contraction due to temperature changes.

(ii) The vaporizer and its piping shall be adequately protected on the hydrogen and heating media sections with safety relief devices.

(iii) Heat used in a liquefied hydrogen vaporizer shall be indirectly supplied utilizing media such as air, steam, water, or water solutions.

(iv) A low temperature shutoff switch shall be provided in the vaporizer discharge piping to prevent flow of liquefied hydrogen in the event of the loss of the heat source.

(i) Electrical systems.

(i) Electrical wiring and equipment located within 3 feet of a point where connections are regularly made and disconnected, shall meet the requirements of chapter 296-24 WAC Part L for Class I, Division 1 locations.

(ii) Except as provided in (l) of this section, electrical wiring, and equipment located within 25 feet of a point where connections are regularly made and disconnected or within 25 feet of a liquid hydrogen storage container, shall meet the requirements of chapter 296-24 WAC Part L for Class I, Division 2 locations. When equipment approved for Class I, environments is not commercially available, the equipment may be:

(A) Purged or ventilated in accordance with NFPA No. 496-1967, Standard for Purged Enclosures for Electrical Equipment in Hazardous Locations,

(B) Intrinsically safe, or

(C) Approved for Class I, Group C atmospheres. This requirement does not apply to electrical equipment which is installed on mobile supply trucks or tank cars from which the storage container is filled.

(j) Bonding and grounding. The liquefied hydrogen container and associated piping shall be electrically bonded and grounded.

(2) Location of liquefied hydrogen storage.

(a) General requirements.

(i) The storage containers shall be located so that they are readily accessible to mobile supply equipment at ground level and to authorized personnel.

(ii) The containers shall not be exposed by electric power lines, flammable liquid lines, flammable gas lines, or lines carrying oxidizing materials.

(iii) When locating liquefied hydrogen storage containers near above-ground flammable liquid storage or liquid oxygen storage, locate the liquefied hydrogen container on ground higher than flammable liquid storage or liquid oxygen storage.

(iv) Where it is necessary to locate the liquefied hydrogen container on ground that is level with or lower than adjacent flammable liquid storage or liquid oxygen storage, suitable protective means shall be taken (such as by diking, diversion, curbs, grading), with respect to the adjacent flammable liquid storage or liquid oxygen storage, to prevent accumulation of liquids within 50 feet of the liquefied hydrogen container.

(v) Storage sites shall be fenced and posted to prevent entrance by unauthorized personnel. Sites shall also be placarded as follows: "Liquefied hydrogen—Flammable gas—No smoking—No open flames."

(vi) If liquefied hydrogen is located in (as specified in Table H-3) a separate building, in a special room, or inside buildings when not in a special room and exposed to other occupancies, containers shall have the safety relief devices vented unobstructed to the outdoors at a minimum elevation of 25 feet above grade to a safe location as required in (l)(d)(ii) of this section.

(b) Specific requirements.

(i) The location of liquefied hydrogen storage, as determined by the maximum total quantity of liquefied hydrogen, shall be in the order of preference as indicated by Roman numerals in the following Table H-3.

TABLE H-3

MAXIMUM TOTAL QUANTITY OF LIQUEFIED HYDROGEN STORAGE PERMITTED

Nature of location	Size of hydrogen storage (capacity in gallons)			
	39.63 (150 liters) to 50	51 to 300	301 to 600	In excess of 600
Outdoors	I	I	I	I
In a separate building	II	II	II	Not permitted.
In a special room	III	III	Not permitted	Not permitted.
Inside buildings not in a special room and exposed to other occupancies	IV	Not permitted	Not permitted	Not permitted.

Note: This table does not apply to the storage in dewars of the type generally used in laboratories for experimental purposes.

(ii) The minimum distance in feet from liquefied hydrogen systems of indicated storage capacity located outdoors, in a separate building, or in a special room to any specified exposure shall be in accordance with Table H-4.

TABLE H-4

MINIMUM DISTANCE (FEET) FROM LIQUEFIED HYDROGEN SYSTEMS TO EXPOSURE

Type of exposure	Liquefied hydrogen storage (capacity in gallons)		
	39.63 (150 liters) to 3,500	3,501 to 15,000	15,001 to 30,000
1. Fire-resistive building and fire walls*	5	5	5
2. Noncombustible building*	25	50	75
3. Other buildings*	50	75	100
4. Wall openings, air-compressor intakes, inlets for air-conditioning or ventilating equipment	75	75	75
5. Flammable liquids (above ground and vent or fill openings if below ground) (see 513 and 514)	50	75	100
6. Between stationary liquefied hydrogen containers	5	5	5
7. Flammable gas storage	50	75	100
8. Liquid oxygen storage and other oxidizers (see 513 and 514)	100	100	100
9. Combustible solids	50	75	100
10. Open flames, smoking, and welding	50	50	50
11. Concentrations of people**	75	75	75
12. Public ways, railroads, and property lines	25	50	75

* Refer to standard types of building construction, NFPA No. 220-1969 for definitions of various types of construction.

** In congested areas such as offices, lunchrooms, locker rooms, time-clock areas, and places of public assembly.

Note 1: The distance in Nos. 2, 3, 5, 7, 9, and 12 in Table H-4 may be reduced where protective structures, such as firewalls equal to height of top of the container, to safeguard the liquefied hydrogen storage system, are located between the liquefied hydrogen storage installation and the exposure.

Note 2: Where protective structures are provided, ventilation and confinement of product should be considered. The 5-foot distance in Nos. 1 and 6 facilitates maintenance and enhances ventilation.

(c) Handling of liquefied hydrogen inside buildings other than separate buildings and special rooms. Portable liquefied hydrogen containers of 50 gallons or less capacity

as permitted in Table H-3 and in compliance with (2)(a)(vi) of this section when housed inside buildings not located in a special room and exposed to other occupancies shall comply with the following minimum requirements:

(i) Be located 20 feet from flammable liquids and readily combustible materials such as excelsior or paper.

(ii) Be located 25 feet from ordinary electrical equipment and other sources of ignition including process or analytical equipment.

(iii) Be located 25 feet from concentrations of people.

(iv) Be located 50 feet from intakes of ventilation and air-conditioning equipment or intakes of compressors.

(v) Be located 50 feet from storage of other flammable-gases or storage of oxidizing gases.

(vi) Containers shall be protected against damage or injury due to falling objects or work activity in the area.

(vii) Containers shall be firmly secured and stored in an upright position.

(viii) Welding or cutting operations, and smoking shall be prohibited while hydrogen is in the room.

(ix) The area shall be adequately ventilated. Safety relief devices on the containers shall be vented directly outdoors or to a suitable hood. See (1)(d)(ii) of this section and (2)(a)(vi) of this section.

(3) Design considerations at specific locations.

(a) Outdoor locations.

(i) Outdoor location shall mean outside of any building or structure, and includes locations under a weather shelter or canopy provided such locations are not enclosed by more than two walls set at right angles and are provided with vent-space between the walls and vented roof or canopy.

(ii) Roadways and yard surfaces located below liquefied hydrogen piping, from which liquid air may drop, shall be constructed of noncombustible materials.

(iii) If protective walls are provided, they shall be constructed of noncombustible materials and in accordance with the provisions of (3)(a)(i) of this section as applicable.

(iv) Electrical wiring and equipment shall comply with chapter 296-24 WAC Part L.

(v) Adequate lighting shall be provided for nighttime transfer operation.

(b) Separate buildings.

(i) Separate buildings shall be of light noncombustible construction on a substantial frame. Walls and roofs shall be lightly fastened and designed to relieve at a maximum internal pressure of 25 pounds per square foot. Windows shall be of shatterproof glass or plastic in metal frames. Doors shall be located in such a manner that they will be readily accessible to personnel in an emergency.

(ii) Adequate ventilation to the outdoors shall be provided. Inlet openings shall be located near the floor level in exterior walls only. Outlet openings shall be located at the high point of the room in exterior walls or roof. Both the inlet and outlet vent openings shall have a minimum total area of 1 square foot per 1,000 cubic feet of room volume. Discharge from outlet openings shall be directed or conducted to a safe location.

(iii) There shall be no sources of ignition.

(iv) Electrical wiring and equipment shall comply with chapter 296-24 WAC Part L.

(v) Heating, if provided, shall be by steam, hot water, or other indirect means.

(c) Special rooms.

(i) Floors, walls, and ceilings shall have a fire resistance rating of at least 2 hours. Walls or partitions shall be continuous from floor to ceiling and shall be securely anchored. At least one wall shall be an exterior wall. Openings to other parts of the building shall not be permitted. Windows and doors shall be in exterior walls and doors shall be located in such a manner that they will be accessible in an emergency. Windows shall be of shatterproof glass or plastic in metal frames.

(ii) Ventilation shall be as provided in (3)(b)(ii) of this section.

(iii) Explosion venting shall be provided in exterior walls or roof only. The venting area shall be equal to not less than 1 square foot per 30 cubic feet of room volume and may consist of any one or any combination of the following: Walls of light noncombustible material; lightly fastened hatch covers; lightly fastened swinging doors opening outward in exterior walls; lightly fastened walls or roofs designed to relieve at a maximum pressure of 25 pounds per square foot.

(iv) There shall be no sources of ignition.

(v) Electrical wiring and equipment shall comply with chapter 296-24 WAC Part L.

(vi) Heating, if provided, shall be steam, hot water, or by other indirect means.

(4) Operating instructions.

(a) Written instructions. For installation which require any operation of equipment by the user, legible instructions shall be maintained at operating locations.

(b) Attendant. A qualified person shall be in attendance at all times while the mobile hydrogen supply unit is being unloaded.

(c) Security. Each mobile liquefied hydrogen supply unit used as part of a hydrogen system shall be adequately secured to prevent movement.

(d) Grounding. The mobile liquefied hydrogen supply unit shall be grounded for static electricity.

(5) Maintenance.

(a) The equipment and functioning of each charged liquefied hydrogen system shall be maintained in a safe operating condition in accordance with the requirements of this section. Weeds or similar combustibles shall not be permitted within 25 feet of any liquified hydrogen equipment.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-31505, filed 11/22/91, effective 12/24/91; 88-23-054 (Order 88-25), § 296-24-31505, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-31505, filed 4/19/85; Order 76-6, § 296-24-31505, filed 3/1/76; Order 73-5, § 296-24-31505, filed 5/9/73 and Order 73-4, § 296-24-31505, filed 5/7/73.]

WAC 296-24-320 Oxygen.

[Order 73-5, § 296-24-320, filed 5/9/73 and Order 73-4, § 296-24-320, filed 5/7/73.]

WAC 296-24-32001 Scope. This section applies to the installation of bulk oxygen systems on industrial and institutional consumer premises. This section does not apply to oxygen manufacturing plants or other establishments operated by the oxygen supplier or supplier's agent for the purpose of storing oxygen and refilling portable containers,

trailers, mobile supply trucks, or tank cars, nor to systems having capacities less than those stated in WAC 296-24-32003(1).

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-32001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-32001, filed 5/9/73 and Order 73-4, § 296-24-32001, filed 5/7/73.]

WAC 296-24-32003 Bulk oxygen systems. (1) Definitions. As used in this section: A bulk oxygen system is an assembly of equipment, such as oxygen storage containers, pressure regulators, safety devices, vaporizers, manifolds, and interconnecting piping, which has storage capacity of more than 13,000 cubic feet of oxygen, normal temperature and pressure (NTP), connected in service or ready for service, or more than 25,000 cubic feet of oxygen (NTP) including unconnected reserves on hand at the site. The bulk oxygen system terminates at the point where oxygen at service pressure first enters the supply line. The oxygen containers may be stationary or movable, and the oxygen may be stored as gas or liquid.

(2) Location.

(a) General. Bulk oxygen storage systems shall be located above ground out of doors, or shall be installed in a building of noncombustible construction, adequately vented, and used for that purpose exclusively. The location selected shall be such that containers and associated equipment shall not be exposed by electric power lines, flammable or combustible liquid lines, or flammable gas lines.

(b) Accessibility. The system shall be located so that it is readily accessible to mobile supply equipment at ground level and to authorized personnel.

(c) Leakage. Where oxygen is stored as a liquid, noncombustible surfacing shall be provided in an area in which any leakage of liquid oxygen might fall during operation of the system and filling of a storage container. For purposes of these standards, asphaltic or bituminous paving is considered to be combustible.

(d) Elevation. When locating bulk oxygen systems near above ground flammable or combustible liquid storage which may be either indoors or outdoors, it is advisable to locate the system on ground higher than the flammable or combustible liquid storage.

(e) Dikes. Where it is necessary to locate a bulk oxygen system on ground lower than adjacent flammable or combustible liquid storage suitable means shall be taken (such as by diking, diversion curbs, or grading) with respect to the adjacent flammable or combustible liquid storage to prevent accumulation of liquids under the bulk oxygen system.

(3) Distance between systems and exposures.

(a) General. The minimum distance from any bulk oxygen storage container to exposures, measured in the most direct line except as indicated in (3)(f) and (g) of this section shall be as indicated in (3)(b) to (r) of this section inclusive.

(b) Combustible structures. Fifty feet from any combustible structures.

(c) Fire resistive structures. Twenty-five feet from any structures with fire-resistive exterior walls or sprinklered buildings or other construction, but not less than one-half the height of adjacent side wall of the structure.

(d) Openings. At least 10 feet from any opening in adjacent walls of fire resistive structures. Spacing from such structures shall be adequate to permit maintenance, but shall not be less than 1 foot.

(e) Flammable liquid storage above ground.

Distance (feet)	Capacity (gallons)
50	0-1000
90	1001 or more

(f) Flammable liquid storage below ground.

Distance measured horizontally from oxygen storage container to flammable liquid tank (feet)	Distance from oxygen storage container to filling and vent connections or openings to flammable liquid tank (feet)	Capacity gallons
15	50	0-1000
30	50	1001 or more

(g) Combustible liquid storage above ground.

Distance (feet)	Capacity (gallons)
25	0-1000
50	1001 or more

(h) Combustible liquid storage below ground.

Distance measured horizontally from oxygen storage container to combustible liquid tank (feet)	Distance from oxygen storage container to filling and vent connections or openings to combustible liquid tank (feet)
15	40

(i) Flammable gas storage. (Such as compressed flammable gases, liquefied flammable gases and flammable gases in low pressure gas holders):

Distance (feet)	Capacity (cu. ft. NTP)
50	Less than 5000
90	5000 or more

(j) Highly combustible materials. Fifty feet from solid materials which burn rapidly, such as excelsior or paper.

(k) Slow-burning materials. Twenty-five feet from solid materials which burn slowly, such as coal and heavy timber.

(l) Ventilation. Seventy-five feet in one direction and 35 feet in approximately 90° direction from confining walls (not including firewalls less than 20 feet high) to provide adequate ventilation in courtyards and similar confining areas.

(m) Congested areas. Twenty-five feet from congested areas such as offices, lunchrooms, locker rooms, time clock areas, and similar locations where people may congregate.

(n) Public areas. Fifty feet from places of public assembly.

(o) Patients. Fifty feet from areas occupied by nonambulatory patients.

(p) Sidewalks. Ten feet from any public sidewalk.

(q) Adjacent property. Five feet from any line of adjoining property.

(r) Exceptions. The distances in (3)(b), (c), (e) to (k) inclusive, and (p) and (q) of this section do not apply where protective structures such as firewalls of adequate height to safeguard the oxygen storage systems are located between the bulk oxygen storage installation and the exposure. In such cases, the bulk oxygen storage installation may be a minimum distance of 1 foot from the firewall.

(4) Storage containers.

(a) Foundations and supports. Permanently installed containers shall be provided with substantial noncombustible supports on firm noncombustible foundations.

(b) Construction—Liquid. Liquid oxygen storage containers shall be fabricated from materials meeting the impact test requirements of paragraph UG-84 of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968. Containers operating at pressures above 15 pounds per square inch gage (p.s.i.g.) shall be designed, constructed, and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VII—Unfired Pressure Vessels—1968. Insulation surrounding the liquid oxygen container shall be noncombustible.

(c) Construction—Gaseous. High-pressure gaseous oxygen containers shall comply with one of the following:

(i) Designed, constructed, and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968.

(ii) Designed, constructed, tested, and maintained in accordance with DOT specifications and regulations.

(5) Piping, tubing, and fittings.

(a) Selection. Piping, tubing, and fittings shall be suitable for oxygen service and for the pressures and temperatures involved.

(b) Specification. Piping and tubing shall conform to Section 2—Gas and Air Piping Systems of Code for Pressure Piping, ANSI, B31.1-1967 with addenda B31.10a-1969.

(c) Fabrication. Piping or tubing for operating temperatures below -20°F shall be fabricated from materials meeting the impact test requirements of paragraph UG-84 of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968, when tested at the minimum operating temperature to which the piping may be subjected in service.

(6) Safety relief devices.

(a) General. Bulk oxygen storage containers, regardless of design pressure shall be equipped with safety relief devices as required by the ASME code or the DOT specifications and regulations.

(b) DOT containers. Bulk oxygen storage containers designed and constructed in accordance with DOT specification shall be equipped with safety relief devices as required thereby.

(c) ASME containers. Bulk oxygen storage containers designed and constructed in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessel—1968 shall be equipped with safety relief devices meeting the provisions of the Compressed Gas Association Pamphlet "Safety Relief Device Standards for Compressed Gas Storage Containers," S-1, Part 3.

(d) Insulation. Insulation casings on liquid oxygen containers shall be equipped with suitable safety relief devices.

(e) Reliability. All safety relief devices shall be so designed or located that moisture cannot collect and freeze in a manner which would interfere with proper operation of the device.

(7) Liquid oxygen vaporizers.

(a) Mounts and couplings. The vaporizer shall be anchored and its connecting piping be sufficiently flexible to provide for the effect of expansion and contraction due to temperature changes.

(b) Relief devices. The vaporizer and its piping shall be adequately protected on the oxygen and heating medium sections with safety relief devices.

(c) Heating. Heat used in an oxygen vaporizer shall be indirectly supplied only through media such as steam, air, water, or water solutions which do not react with oxygen.

(d) Grounding. If electric heaters are used to provide the primary source of heat, the vaporizing system shall be electrically grounded.

(8) Equipment assembly and installation.

(a) Cleaning. Equipment making up a bulk oxygen system shall be cleaned in order to remove oil, grease or other readily oxidizable materials before placing the system in service.

(b) Joints. Joints in piping and tubing may be made by welding or by use of flanged, threaded, slip, or compression fittings. Gaskets or thread sealants shall be suitable for oxygen service.

(c) Accessories. Valves, gages, regulators, and other accessories shall be suitable for oxygen service.

(d) Installation. Installation of bulk oxygen systems shall be supervised by personnel familiar with proper practices with reference to their construction and use.

(e) Testing. After installation all field erected piping shall be tested and proved gas tight at maximum operating pressure. Any medium used for testing shall be oil free and nonflammable.

(f) Security. Storage containers, piping, valves, regulating equipment, and other accessories shall be protected against physical damage and against tampering.

(g) Venting. Any enclosure containing oxygen control or operating equipment shall be adequately vented.

(h) Placarding. The bulk oxygen storage location shall be permanently placarded to indicate: "OXYGEN—NO SMOKING—NO OPEN FLAMES," or an equivalent warning.

(i) Electrical wiring. Bulk oxygen installations are not hazardous locations as defined and covered by chapter 296-24 WAC Part L. Therefore, general purpose or weatherproof types of electrical wiring and equipment are acceptable depending upon whether the installation is indoors or outdoors. Such equipment shall be installed according to chapter 296-24 WAC Part L.

(9) Operating instructions. For installations which require any operation of equipment by the user, legible instructions shall be maintained at operating locations.

(10) Maintenance.

(a) The equipment and functioning of each charged bulk oxygen system shall be maintained in a safe operating

condition in accordance with the requirements of this section. Wood and long dry grass shall be cut back within 15 feet of any bulk oxygen storage container.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-32003, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-32003, filed 4/19/85; Order 76-6, § 296-24-32003, filed 3/1/76; Order 73-5, § 296-24-32003, filed 5/9/73 and Order 73-4, § 296-24-32003, filed 5/7/73.]

WAC 296-24-325 Nitrous oxide. The piped systems for the in-plant transfer and distribution of nitrous oxide shall be designed, installed, maintained, and operated in accordance with Compressed Gas Association Pamphlet G8.1-1964.

[Order 73-5, § 296-24-325, filed 5/9/73 and Order 73-4, § 296-24-325, filed 5/7/73.]

WAC 296-24-330 Flammable and combustible liquids.

[Order 73-5, § 296-24-330, filed 5/9/73 and Order 73-4, § 296-24-330, filed 5/7/73.]

WAC 296-24-33001 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-330 in the section number.

(1) Aerosol shall mean a material which is dispensed from its container as a mist, spray, or foam by a propellant under pressure.

(2) Atmospheric tank shall mean a storage tank which has been designed to operate at pressures from atmospheric through 0.5 p.s.i.g.

(3) Automotive service station shall mean that portion of property where flammable or combustible liquids used as motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles and shall include any facilities available for the sale and service of tires, batteries, and accessories, and for minor automotive maintenance work. Major automotive repairs, painting, body and fender work are excluded.

(4) Basement shall mean a story of a building or structure having one-half or more of its height below ground level and to which access for fire fighting purposes is unduly restricted.

(5) Boiling point shall mean the boiling point of a liquid at a pressure of 14.7 pounds per square inch absolute (p.s.i.a.) (760 mm.). Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for purposes of this section the ten percent point of a distillation performed in accordance with the Standard Method of Test for Distillation of Petroleum Products, ASTM D-86-62, may be used as the boiling point of the liquid.

(6) Boilover shall mean the expulsion of crude oil (or certain other liquids) from a burning tank. The light fractions of the crude oil burnoff producing a heat wave in the residue, which on reaching a water strata may result in the expulsion of a portion of the contents of the tank in the form of froth.

(7) Bulk plant shall mean that portion of a property where flammable or combustible liquids are received by tank vessel, pipelines, tank car, or tank vehicle, and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, or container.

(8) Chemical plant shall mean a large integrated plant or that portion of such a plant other than a refinery or distillery where flammable or combustible liquids are produced by chemical reactions or used in chemical reactions.

(9) Closed container shall mean a container as herein defined, so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.

(10) Crude petroleum shall mean hydrocarbon mixtures that have a flash point below 150°F and which have not been processed in a refinery.

(11) Distillery shall mean a plant or that portion of a plant where flammable or combustible liquids produced by fermentation are concentrated, and where the concentrated products may also be mixed, stored, or packaged.

(12) Fire area shall mean an area of a building separated from the remainder of the building by construction having a fire resistance of at least one hour and having all communicating openings properly protected by an assembly having a fire resistance rating of at least one hour.

(13) Fire resistance or fire resistive construction shall mean construction to resist the spread of fire.

(14) Flammable aerosol shall mean an aerosol which is required to be labeled "Flammable" under the Federal Hazardous Substances Labeling Act (15 U.S.C. 1261). For the purposes of WAC 296-24-33009, such aerosols are considered Class IA liquids.

(15) "Flashpoint" means the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, and shall be determined as follows:

(a) For a liquid which has a viscosity of less than 45 SUS at 100°F (37.8°C), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the Standard Method of Test for Flashpoint by Tag Closed Tester (ASTM D-56-70) shall be used.

(b) For a liquid which has a viscosity of 45 SUS or more at 100°F (37.8°C), or contains suspended solids, or has a tendency to form a surface film while under test, the Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester (ASTM D-93-71) shall be used, except that the methods specified in Note 1 to section 1.1 of ASTM D-93-71 may be used for the respective materials specified in the note.

(c) For a liquid that is a mixture of compounds that have different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in (a) or (b) of this subsection on the liquid in the form it is shipped. If the flashpoint, as determined by this test, is 100°F (37.8°C) or higher, an additional flashpoint determination shall be run on a sample of the liquid evaporated to ninety percent of its original volume, and the lower value of the two tests shall be considered the flashpoint of the material.

(d) Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified in this section.

(16) Hotel shall mean buildings or groups of buildings under the same management in which there are sleeping accommodations for hire primarily used by transients who are lodged with or without meals including but not limited to inns, clubs, motels, and apartment hotels.

(17) Institutional occupancy shall mean the occupancy or use of a building or structure or any portion thereof by persons harbored or detained to receive medical, charitable or other care or treatment, or by persons involuntarily detained.

(18) Liquid shall mean, for the purpose of these standards, any material which has a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM Test for Penetration for Bituminous Materials, D-5-65. When not otherwise identified, the term liquid shall include both flammable and combustible liquids.

(19) "Combustible liquid" means any liquid having a flashpoint at or above 100°F (37.8°C). Combustible liquids shall be divided into two classes as follows:

(a) "Class II liquids" shall include those with flashpoints at or above 100°F (37.8°C) and below 140°F (60°C), except any mixture having components with flashpoints of 200°F (93.3°C) or higher, the volume of which make up ninety-nine percent or more of the total volume of the mixture.

(b) "Class III liquids" shall include those with flashpoints at or above 140°F (60°C). Class III liquids are subdivided into two subclasses:

(i) "Class IIIA liquids" shall include those with flashpoints at or above 140°F (60°C) and below 200°F (93.3°C) except any mixture having components with flashpoints of 200°F (93.3°C) or higher, the total volume of which make up ninety-nine percent or more of the total volume of the mixture.

(ii) "Class IIIB liquids" shall include those with flashpoints at or above 200°F (93.3°C). This section does not cover Class IIIB liquids. Where the term "Class III liquids" is used in this section, it shall mean only Class IIIA liquids.

(c) When a combustible liquid is heated for use to within 30°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for the next lower class of liquids.

(20) "Flammable liquid" means any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C), or higher, the total of which make up ninety-nine percent or more of the total volume of the mixture. Flammable liquids shall be known as Class I liquids. Class I liquids are divided into three classes as follows:

(a) Class IA shall include liquids having flashpoints below 73°F (22.8°C) and having a boiling point below 100°F (37.8°C).

(b) Class IB shall include liquids having flashpoints below 73°F (22.8°C) and having a boiling point at or above 100°F (37.8°C).

(c) Class IC shall include liquids having flashpoints at or above 73°F (22.8°C) and below 100°F (37.8°C).

(21) Unstable (reactive) liquid shall mean a liquid which in the pure state or as commercially produced or transported will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure, or temperature.

(22) Low-pressure tank shall mean a storage tank which has been designed to operate at pressures above 0.5 p.s.i.g. but not more than 15 p.s.i.g.

(23) Marine service station shall mean that portion of a property where flammable or combustible liquids used as fuels are stored and dispensed from fixed equipment on shore, piers, wharves, or floating docks into the fuel tanks or self-propelled craft, and shall include all facilities used in connection therewith.

(24) Mercantile occupancy shall mean the occupancy or use of a building or structure or any portion thereof for the displaying, selling, or buying of goods, wares, or merchandise.

(25) Office occupancy shall mean the occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services.

(26) Portable tank shall mean a closed container having a liquid capacity over sixty United States gallons and not intended for fixed installation.

(27) Pressure vessel shall mean a storage tank or vessel which has been designed to operate at pressures above 15 p.s.i.g.

(28) Protection for exposure shall mean adequate fire protection for structures on property adjacent to tanks, where there are employees of the establishment.

(29) Refinery shall mean a plant in which flammable or combustible liquids are produced on a commercial scale from crude petroleum, natural gasoline, or other hydrocarbon sources.

(30) Safety can shall mean an approved container, of not more than five gallons capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

(31) Vapor pressure shall mean the pressure, measured in pounds per square inch (absolute) exerted by a volatile liquid as determined by the "Standard Method of Test for Vapor Pressure of Petroleum Products (Reid Method)," American Society for Testing and Materials ASTM D323-68.

(32) Ventilation as specified in these standards is for the prevention of fire and explosion. It is considered adequate if it is sufficient to prevent accumulation of significant quantities of vapor-air mixtures in concentration over one-fourth of the lower flammable limit.

(33) Storage: Flammable or combustible liquids shall be stored in a tank or in a container that complies with WAC 296-24-33009(2).

(34) Barrel shall mean a volume of forty-two United States gallons.

(35) Container shall mean any can, barrel, or drum.

(36) Approved unless otherwise indicated, approved, or listed by a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(37) Listed see subsection (36) of this section.

(38) "SUS" means Saybolt Universal Seconds as determined by the Standard Method of Test for Saybolt Viscosity (ASTM D-88-56), and may be determined by use of the SUS conversion tables specified in ASTM Method D2161-66 following determination of viscosity in accordance with the procedures specified in the Standard Method of Test

for Viscosity of Transparent and Opaque Liquids (ASTM D445-65).

(39) "Viscous" means a viscosity of 45 SUS or more.

Note: The volatility of liquids is increased when artificially heated to temperatures equal to or higher than their flashpoints. When so heated Class II and III liquids shall be subject to the applicable requirements for Class I or II liquids. These standards may also be applied to high flashpoint liquids when so heated even though these same liquids when not heated are outside of its scope.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-33001, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-33001, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-33001, filed 11/13/80; Order 76-29, § 296-24-33001, filed 9/30/76; Order 76-6, § 296-24-33001, filed 3/1/76; Order 74-27, § 296-24-33001, filed 5/7/74; Order 73-5, § 296-24-33001, filed 5/9/73 and Order 73-4, § 296-24-33001, filed 5/7/73.]

WAC 296-24-33003 Scope. This section applies to the handling, storage, and use of flammable and combustible liquids with a flash point below 200°F. This section does not apply to:

(1) Bulk transportation of flammable and combustible liquids;

(2) Storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment;

(3) This section shall apply to agriculture March 1, 1995. Liquids without flashpoints that may be flammable under some conditions, such as certain halogenated hydrocarbons and mixtures containing halogenated hydrocarbons;

(4) Mists, sprays, or foams, except flammable aerosols covered in WAC 296-24-33009; or

(5) Installations made in accordance with requirements of the following standards:

(a) National Fire Protection Association Standard for Drycleaning Plants, NFPA No. 32-1970;

(b) National Fire Protection Association Standard for the Manufacture of Organic Coatings, NFPA No. 35-1970;

(c) National Fire Protection Association Standard for Solvent Extraction Plants, NFPA No. 36-1967; or

(d) National Fire Protection Association Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, NFPA No. 37-1970.

[Statutory Authority: Chapter 49.17 RCW. 94-06-068 (Order 93-17), § 296-24-33003, filed 3/2/94, effective 3/1/95; Order 73-5, § 296-24-33003, filed 5/9/73 and Order 73-4, § 296-24-33003, filed 5/7/73.]

WAC 296-24-33005 Tank storage. (1) Design and construction of tanks.

(a) Materials.

(i) Tanks shall be built of steel except as provided in (1)(a)(ii) through (v) of this section.

(ii) Tanks may be built of materials other than steel for installation underground or if required by the properties of the liquid stored. Tanks located above ground or inside buildings shall be of noncombustible construction.

(iii) Tanks built of materials other than steel shall be designed to specifications embodying principles recognized as good engineering design for the material used.

(iv) Unlined concrete tanks may be used for storing flammable or combustible liquids having a gravity of 40°API or heavier. Concrete tanks with special lining may be used for other services provided the design is in accordance with sound engineering practice.

(v) Tanks may have combustible or noncombustible linings.

(vi) Special engineering consideration shall be required if the specific gravity of the liquid to be stored exceeds that of water or if the tanks are designed to contain flammable or combustible liquids at a liquid temperature below 0°F.

(b) Fabrication.

(i) Tanks may be of any shape or type consistent with sound engineering design.

(ii) Metal tanks shall be welded, riveted, and caulked, brazed, or bolted, or constructed by use of a combination of these methods. Filler metal used in brazing shall be nonferrous metal or an alloy having a melting point above 1000°F and below that of the metal joined.

(c) Atmospheric tanks.

(i) Atmospheric tanks shall be built in accordance with acceptable good standards of design. Atmospheric tanks may be built in accordance with:

(A) Underwriters' Laboratories, Inc., Subjects No. 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, 1968; No. 58, Standards for Steel Underground Tanks for Flammable and COMBUSTIBLE Liquids, Fifth Edition, December 1961; or No. 80, Standard for Steel Inside Tanks for Oil-Burner Fuel, September 1963.

(B) American Petroleum Institute Standards No. 12A, Specification for Oil Storage Tanks with Riveted Shells, Seventh Edition, September 1951, or No. 650, Welded Steel Tanks for Oil Storage, Third Edition, 1966.

(C) American Petroleum Institute Standards No. 12B, Specification for Bolted Production Tanks, Eleventh Edition, May 1958, and Supplement 1, March 1962; No. 12D, Specification for Large Welded Production Tanks, Seventh Edition, August 1957; or No. 12F, Specification for Small Welded Production Tanks, Fifth Edition, March 1961. Tanks built in accordance with these standards shall be used only as production tanks for storage of crude petroleum in oil-producing areas.

(ii) Tanks designed for underground service not exceeding 2,500 gallons capacity may be used aboveground.

(iii) Low-pressure tanks and pressure vessels may be used as atmospheric tanks.

(iv) Atmospheric tanks shall not be used for the storage of a flammable or combustible liquid at a temperature at or above its boiling point.

(d) Low pressure tanks.

(i) The normal operating pressure of the tank shall not exceed the design pressure of the tank.

(ii) Low-pressure tanks shall be built in accordance with acceptable standards of design. Low-pressure tanks may be built in accordance with:

(A) American Petroleum Institute Standard No. 620, Recommended Rules for the Design and Construction of Large, Welded, Low-Pressure Storage Tanks, Third Edition, 1966.

(B) The principles of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessels Code, 1968.

(iii) Atmospheric tanks built according to the Underwriters' Laboratories, Inc., requirements in (1)(c)(i) of this section may be used for operating pressures not exceeding 1

p.s.i.g. and shall be limited to 2.5 p.s.i.g. under emergency venting conditions. Pressure vessels may be used as low-pressure tanks.

(e) Pressure vessels.

(i) The normal operating pressure of the vessel shall not exceed the design pressure of the vessel.

(ii) Pressure vessels shall be built in accordance with the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code, 1968.

(f) Provisions for internal corrosion. When tanks are not designed in accordance with the American Petroleum Institute, American Society of Mechanical Engineers, or the Underwriters' Laboratories, Inc.'s standards, or if corrosion is anticipated beyond that provided for in the design formulas used, additional metal thickness or suitable protective coatings or linings shall be provided to compensate for the corrosion loss expected during the design life of the tank.

(2) Installation of outside aboveground tanks.

(a) Location with respect to property lines and public ways.

(i) Every aboveground tank for the storage of flammable or combustible liquids, except those liquids with boil-over characteristics and unstable liquids, operating at pressures not in excess of 2.5 p.s.i.g. and equipped with emergency venting which will not permit pressures to exceed 2.5 p.s.i.g. shall be located in accordance with Table H-5.

(ii) Every aboveground tank for the storage of flammable or combustible liquids, except those liquids with boil-over characteristics and unstable flammable or combustible liquids, operating at pressures exceeding 2.5 p.s.i.g. or equipped with emergency venting which will permit pressures to exceed 2.5 p.s.i.g. shall be located in accordance with Table H-6.

(iii) Every aboveground tank for the storage of flammable or combustible liquids with boil-over characteristics shall be located in accordance with Table H-7.

(iv) Every aboveground tank for the storage of unstable liquids shall be located in accordance with Table H-8.

(v) Reference minimum distances for use in Tables H-5 to H-8 inclusive.

(vi) Where end failure or horizontal pressure tanks and vessels may expose property, the tank shall be placed with the longitudinal axis parallel to the nearest important exposure.

TABLE H-5

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building and shall be not less than 5 feet.
Floating roof	Protection for exposures.	1/2 times diameter of tank but need not exceed 90 ft.	1/6 times diameter of tank but need not exceed 30 ft.
	None	Diameter of tank but need not exceed 175 ft.	1/6 times diameter of tank but need not exceed 30 ft.
Vertical with weak roof to shell seam	Approved foam or inerting system on the tank.	1/2 times diameter of tank but need not exceed 90 ft. and shall not be less than 5 ft.	1/6 times diameter of tank but need not exceed 30 ft.
	Protection for exposures.	Diameter of tank but, need not exceed 175 ft.	1/3 times diameter of tank but need not exceed 60 ft.
	None	2 times diameter of tank but need not exceed 350 ft.	1/3 times diameter of tank but need not exceed 60 ft.
Horizontal and vertical, with emergency relief venting to limit pressures to 2.5 p.s.i.g.	Approved inerting system on the tank or approved foam system on vertical tanks.	1/2 times Table H-9 but shall not be less than 5 ft.	1/2 times Table H-9.
	Protection for exposures.	Table H-9	Table H-9
	None	2 times table	Table H-9

TABLE H-6

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
Any type	Protection for exposures.	1 1/2 times Table H-9 but shall not be less than 25 ft.	1 1/2 times Table H-9 but shall not be less than 25 ft.
	None	3 times Table H-9 but shall not be less than 50 ft.	1 1/2 times Table H-9 but shall not be less than 25 ft.

TABLE H-7

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
Floating roof	Protection for exposures.	Diameter of tank but need not exceed 175 ft.	1/3 times diameter of tank but need not exceed 60 ft.
	None	2 times diameter of tank but need not exceed 350 ft.	1/3 times diameter of tank but need not exceed 60 ft.
Fixed roof	Approved foam or inerting system.	Diameter of tank but need not exceed 175 ft.	1/3 times diameter of tank but need not exceed 60 ft.
	Protection for exposures.	2 times diameter of tank but need not exceed 350 ft.	2/3 times diameter of tank but need not exceed 120 ft.
	None	4 times diameter of tank but need not exceed 350 ft.	2/3 times diameter of tank but need not exceed 120 ft.

TABLE H-8

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
Horizontal and vertical tanks with emergency relief venting to permit pressure not in excess of 2.5 p.s.i.g.	Tank protected with any of the following: Approved water spray, approved inerting, approved insulation and refrigeration, approved barricade.	See Table H-9, but the distance may be not less than 25 ft.	Not less than 25 ft.
	Protection for exposures.	2 1/2 times Table H-9 but not less than 50 ft.	Not less than 50 ft.
	None	5 times Table H-9 but not less than 100 ft.	Not less than 100 ft.
Horizontal and vertical tanks with emergency relief venting to permit pressure over 2.5 p.s.i.g.	Tank protected with any one of the following: Approved water spray, approved inerting, approved insulation and refrigeration, approved barricade.	2 times Table H-9 but not less than 50 ft.	Not less than 50 ft.
	Protection for exposures.	4 times Table H-9 but not less than 100 ft.	Not less than 100 ft.
	None	8 times Table H-9 but not less than 150 ft.	Not less than 150 ft.

TABLE H-9

Capacity tank gallons	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
275 or less	5	5
276 to 750	10	5
751 to 12,000	15	5
12,001 to 30,000	20	5
30,001 to 50,000	30	10
50,001 to 100,000	50	15
100,001 to 500,000	80	25
500,001 to 1,000,000	100	35
1,000,001 to 2,000,000	135	45
2,000,001 to 3,000,000	165	55
3,000,001 or more	175	60

(b) Spacing (shell-to-shell) between aboveground tanks.

(i) The distance between any two flammable or combustible liquid storage tanks shall not be less than 3 feet.

(ii) Except as provided in (2)(b)(iii) of this section, the distance between any two adjacent tanks shall not be less than one-sixth the sum of their diameters. When the diameter of one tank is less than one-half the diameter of the adjacent tank, the distance between the two tanks shall not be less than one-half the diameter of the smaller tank.

(iii) Where crude petroleum in conjunction with production facilities are located in noncongested areas and have capacities not exceeding 126,000 gallons (3,000 barrels), the distance between such tanks shall not be less than 3 feet.

(iv) Where unstable flammable or combustible liquids are stored, the distance between such tanks shall not be less than one-half the sum of their diameters.

(v) When tanks are compacted in three or more rows or in an irregular pattern, greater spacing or other means shall be provided so that inside tanks are accessible for fire fighting purposes.

(vi) The minimum separation between a liquefied petroleum gas container and a flammable or combustible liquid storage tank shall be 20 feet, except in the case of flammable or combustible liquid tanks operating at pressures exceeding 2.5 p.s.i.g. or equipped with emergency venting which will permit pressures to exceed 2.5 p.s.i.g. in which case the provisions of (2)(b)(i) and (ii) of this section shall apply. Suitable means shall be taken to prevent the accumulation of flammable or combustible liquids under adjacent liquefied petroleum gas containers such as by diversion curbs or grading. When flammable or combustible liquid storage tanks are within a diked area, the liquefied petroleum gas containers shall be outside the diked area and at least 10 feet away from the centerline of the wall of the diked area. The foregoing provisions shall not apply when liquefied petroleum gas containers of 125 gallons or less capacity are installed adjacent to fuel oil supply tanks of 550 gallons or less capacity.

(c) Location of outside aboveground tanks with respect to important buildings on same property. Every outside aboveground tank shall be separated from important buildings on the same property by distances not less than those specified in (2)(a)(i), (ii), (iii) and (iv) of this section, whichever is applicable. The appropriate distance column in Tables H-5, H-6, H-7, H-8, or H-9, that shall be used shall be the one reading: "Minimum distance in feet from nearest side of any public way or from nearest important building."

(d) Normal venting for aboveground tanks. (i) Atmospheric storage tanks shall be adequately vented to prevent the development of vacuum or pressure sufficient to distort the roof of a cone roof tank or exceed the design pressure in the case of other atmospheric tanks, as a result of filling or emptying, and atmospheric temperature changes.

(ii) Normal vents shall be sized either in accordance with: (A) The American Petroleum Institute Standard 2000 (1968), Venting Atmospheric and Low-Pressure Storage Tanks; or (B), other accepted standard; or (C) shall be at least as large as the filling or withdrawal connection, whichever is larger but in no case less than 1 1/4 inch nominal inside diameter.

(iii) Low-pressure tanks and pressure vessels shall be adequately vented to prevent development of pressure or

vacuum, as a result of filling or emptying and atmospheric temperature changes, from exceeding the design pressure of the tank or vessel. Protection shall also be provided to prevent over-pressure from any pump discharging into the tank or vessel when the pump discharge pressure can exceed the design pressure of the tank or vessel.

(iv) If any tank or pressure vessel has more than one fill or withdrawal connection and simultaneous filling or withdrawal can be made, the vent size shall be based on the maximum anticipated simultaneous flow.

(v) Unless the vent is designed to limit the internal pressure 2.5 p.s.i. or less, the outlet of vents and vent drains shall be arranged to discharge in such a manner as to prevent localized overheating of any part of the tank in the event vapors from such vents are ignited.

(vi) Tanks and pressure vessels storing Class IA liquids shall be equipped with venting devices which shall be normally closed except when venting to pressures or vacuum conditions. Tanks and pressure vessels storing Class IB and IC liquids shall be equipped with venting devices which shall be normally closed except when venting under pressure or vacuum conditions, or with approved flame arresters.

Exemption: Tanks of 3,000 bbls. capacity or less containing crude petroleum in crude-producing areas; and, outside aboveground atmospheric tanks under 1,000 gallons capacity containing other than Class IA flammable liquids may have open vents. (See (2)(f)(ii) of this section.)

(vii) Flame arresters or venting devices required in (2)(e)(vi) of this section may be omitted for Class IB and IC liquids where conditions are such that their use may, in case of obstruction, result in tank damage.

(e) Emergency relief venting for fire exposure for aboveground tanks.

(i) Every aboveground storage tank shall have some form of construction or device that will relieve excessive internal pressure caused by exposure fires.

(ii) In a vertical tank the construction referred to in (2)(e)(i) of this section may take the form of a floating roof, lifter roof, a weak roof-to-shell seam, or other approved pressure relieving construction. The weak roof-to-shell seam shall be constructed to fail preferential to any other seam.

(iii) Where entire dependence for emergency relief is placed upon pressure relieving devices, the total venting capacity of both normal and emergency vents shall be enough to prevent rupture of the shell or bottom of the tank if vertical, or of the shell or heads if horizontal. If unstable liquids are stored, the effects of heat or gas resulting from polymerization, decomposition, condensation, or self-reactivity shall be taken into account. The total capacity of both normal and emergency venting devices shall be not less than that derived from Table H-10 except as provided in (2)(e)(v) and (vi) of this section. Such device may be a self-closing manhole cover, or one using long bolts that permit the cover to lift under internal pressure, or an additional or larger relief valve or valves. The wetted area of the tank shall be calculated on the basis of 55 percent of the total exposed area of a sphere or spheroid, 75 percent of the total exposed area of a horizontal tank and the first 30 feet above grade of the exposed shell area of a vertical tank.

TABLE 10

WETTED AREA VERSUS CUBIC FEET FREE AIR PER HOUR
(14.7 psia and 60°F)

Square feet	CFH	Square feet	CFH	Square feet	CFH
20	21,100	200	211,000	1,000	524,000
30	31,600	250	239,000	1,200	557,000
40	42,100	300	265,000	1,400	587,000
50	52,700	350	288,000	1,600	614,000
60	63,200	400	312,000	1,800	639,000
70	73,700	500	354,000	2,000	662,000
80	84,200	600	392,000	2,400	704,000
90	94,800	700	428,000	2,800	742,000
100	105,000	800	462,000	and	
120	126,000	900	493,000	over	
140	147,000	1,000	524,000		
160	168,000				
180	190,000				
200	211,000				

(iv) For tanks and storage vessels designed for pressure over 1 p.s.i.g., the total rate of venting shall be determined in accordance with Table H-10, except that when the exposed wetted area of the surface is greater than 2,800 square feet, the total rate of venting shall be calculated by the following formula:

$$CFH = 1{,}107A^{0.82}$$

Where:

CFH = Venting requirement, in cubic feet of free air per hour.

A = Exposed wetted surface, in square feet.

Note: The foregoing formula is based on $Q = 21{,}000A^{0.82}$.

(v) The total emergency relief venting capacity for any specific stable liquid may be determined by the following formula:

Cubic feet of free air per hour = V

$$V = \frac{1337}{L\ M}$$

V = Cubic feet of free air per hour from Table H-10.

L = Latent heat of vaporization of specific liquid in B.t.u. per pound.

M = Molecular weight of specific liquids.

(vi) The required airflow rate of (2)(e)(iii) or (v) of this section may be multiplied by the appropriate factor listed in the following schedule when protection is provided as indicated. Only one factor may be used for any one tank.

0.5 for drainage in accordance with (2)(g)(ii) of this section for tanks over 200 square feet of wetted area.

0.3 for approved water spray.

0.3 for approved insulation.

0.15 for approved water spray with approved insulation.

(vii) The outlet of all vents and vent drains on tanks equipped with emergency venting to permit pressures exceeding 2.5 p.s.i.g. shall be arranged to discharge in such

a way as to prevent localized overheating of any part of the tank, in the event vapors from such vents are ignited.

(viii) Each commercial tank venting device shall have stamped on it the opening pressure, the pressure at which the valve reaches the full open position, and the flow capacity at the latter pressure, expressed in cubic feet per hour of air at 60°F and at a pressure of 14.7 p.s.i.a.

(ix) The flow capacity of tank venting devices 12 inches and smaller in nominal pipe size shall be determined by actual test of each type and size of vent. These flow tests may be conducted by the manufacturer if certified by a qualified impartial observer, or may be conducted by an outside agency. The flow capacity of tank venting devices larger than 12 inches nominal pipe size, including manhole covers with long bolts or equivalent, may be calculated provided that the opening pressure is actually measured, the rating pressure and corresponding free orifice area are stated, the word "calculated" appears on the nameplate, and the computation is based on a flow coefficient of 0.5 applied to the rated orifice area.

(f) Vent piping for aboveground tanks.

(i) Vent piping shall be constructed in accordance with WAC 296-24-33007 of this section.

(ii) Where vent pipe outlets for tanks storing Class I liquids are adjacent to buildings or public ways, they shall be located so that the vapors are released at a safe point outside of buildings and not less than 12 feet above the adjacent ground level. In order to aid their dispersion, vapors shall be discharged upward or horizontally away from closely adjacent walls. Vent outlets shall be located so that flammable vapors will not be trapped by eaves or other obstructions and shall be at least five feet from building openings.

(iii) When tank vent piping is manifolded, pipe sizes shall be such as to discharge within the pressure limitations of the system, the vapors they may be required to handle when manifolded tanks are subject to the same fire exposure.

(g) Drainage, dikes, and walls for aboveground tanks.

(i) Drainage and diked areas. The area surrounding a tank or a group of tanks shall be provided with drainage as in (2)(g)(ii) of this section, or shall be diked as provided in (2)(g)(iii), to prevent accidental discharge of liquid from endangering adjoining property or reaching waterways.

(ii) Drainage. Where protection of adjoining property or waterways is by means of a natural or manmade drainage system, such systems shall comply with the following:

(A) A slope of not less than 1 percent away from the tank toward the drainage system shall be provided.

(B) The drainage system shall terminate in vacant land or other area or in an impounding basin having a capacity not smaller than that of the largest tank served. This termination area and the route of the drainage system shall be so located that, if the flammable or combustible liquids in the drainage system are ignited, the fire will not seriously expose tanks or adjoining property.

(C) The drainage system, including automatic drainage pumps, shall not discharge to adjoining property, natural water courses, public sewers, or public drains unless the discharge of flammable or combustible liquids would not constitute a hazard, or the system is so designed that it will not permit flammable or combustible liquids to be released.

(iii) Diked areas. Where protection of adjoining property or waterways is accomplished by retaining the liquid around the tank by means of a dike, the volume of the diked area shall comply with the following requirements:

(A) Except as provided in (2)(g)(iii)(B) of this section, the volumetric capacity of the diked area shall not be less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a full tank. The capacity of the diked area enclosing more than one tank shall be calculated by deducting the volume of the tanks other than the largest tank below the height of the dike.

(B) For a tank or group of tanks with fixed roofs containing crude petroleum with boilover characteristics, the volumetric capacity of the diked area shall be not less than the capacity of the largest tank served by the enclosure, assuming a full tank. The capacity of the diked enclosure shall be calculated by deducting the volume below the height of the dike of all tanks within the enclosure.

(C) Walls of the diked area shall be of earth, steel, concrete or solid masonry designed to be liquidtight and to withstand a full hydrostatic head. Earthen walls 3 feet or more in height shall have a flat section at the top not less than 2 feet wide. The slope of an earthen wall shall be consistent with the angle of repose of the material of which the wall is constructed.

(D) The walls of the diked area shall be restricted to an average height of 6 feet above interior grade.

(E) Where provision is made for draining water from diked areas, drainage shall be provided at a uniform slope of not less than 1 percent away from tanks toward a sump, drainbox, or other safe means of disposal located at the greatest practical distance from the tank. Such drains shall normally be controlled in a manner so as to prevent flammable or combustible liquids from entering natural water courses, public sewers, or public drains, if their presence would constitute a hazard. Control of drainage shall be accessible under fire conditions.

(F) No loose combustible material, empty or full drum or barrel, shall be permitted within the diked area.

(G) Each diked area containing two or more tanks shall be subdivided preferably by drainage channels or at least by intermediate curbs in order to prevent spills from endangering adjacent tanks within the diked area as follows:

(I) When storing normally stable liquids in vertical cone roof tanks constructed with weak roof-to-shell seam or approved floating roof tanks or when storing crude petroleum in producing areas in any type of tank, one subdivision for each tank in excess of 10,000 bbls. and one subdivision for each group of tanks (no tank exceeding 10,000 bbls. capacity) having an aggregate capacity not exceeding 15,000 bbls.

(II) When storing normally stable flammable or combustible liquids in tanks not covered in (g)(iii)(G)(I) of this subsection, one subdivision for each tank in excess of 100,000 gallons (2,500 bbls.) and one subdivision for each group of tanks (no tank exceeding 100,000 gallons capacity) having an aggregate capacity not exceeding 150,000 gallons (3,570 bbls.).

(III) When storing unstable liquids in any type of tank, one subdivision for each tank except that tanks installed in accordance with the drainage requirements of NFPA 15-1969, Standard for Water Spray Fixed Systems for Fire Protection shall require no additional subdivision.

(IV) The drainage channels or intermediate curbs shall be located between tanks so as to take full advantage of the available space with due regard for the individual tank capacities. Intermediate curbs, where used, shall be not less than 18 inches in height.

(h) Tank openings other than vents for aboveground tanks.

(i) Connections for all tank openings shall be vaportight and liquid tight. Vents are covered in (2)(d) through (f) of this section.

(ii) Each connection to an aboveground tank through which liquid can normally flow shall be provided with an internal or an external valve located as close as practical to the shell of the tank. Such valves, when external, and their connections to the tank shall be of steel except when the chemical characteristics of the liquid stored are incompatible with steel. When materials other than steel are necessary, they shall be suitable for the pressures, structural stresses, and temperatures involved, including fire exposures.

(iii) Each connection below the liquid level through which liquid does not normally flow shall be provided with a liquid tight closure. This may be a valve, plug, or blind, or a combination of these.

(iv) Openings for gaging shall be provided with a vapor tight cap or cover.

(v) For Class IB and Class IC liquids other than crude oils, gasolines, and asphalts, the fill pipe shall be so designed and installed as to minimize the possibility of generating static electricity. A fill pipe entering the top of a tank shall terminate within 6 inches of the bottom of the tank and shall be installed to avoid excessive vibration.

(vi) Filling and emptying connections which are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. Such connection shall be closed and liquidtight when not in use. The connection shall be properly identified.

(3) Installation of underground tanks.

(a) Location. Excavation for underground storage tanks shall be made with due care to avoid undermining of foundations of existing structures. Underground tanks or tanks under buildings shall be so located with respect to existing building foundations and supports that the loads carried by the latter cannot be transmitted to the tank. The distance from any part of a tank storing Class I liquids to the nearest wall of any basement or pit shall be not less than 1 foot, and to any property line that may be built upon, not less than 3 feet. The distance from any part of a tank storing Class II or Class III liquids to the nearest wall of any basement, pit or property line shall not be less than 1 foot.

(b) Depth and cover. Underground tanks shall be set on firm foundations and surrounded with at least 6 inches of noncorrosive, inert materials such as clean sand, earth, or gravel well tamped in place. The tank shall be placed in the hole with care since dropping or rolling the tank into the hole can break a weld, puncture or damage the tank, or scrape off the protective coating of coated tanks. Tanks shall be covered with a minimum of 2 feet of earth or shall be covered with not less than 1 foot of earth, on top of which shall be placed a slab of reinforced concrete not less than 4 inches thick. When underground tanks are, or are likely to be, subject to traffic, they shall be protected against damage from vehicles passing over them by at least 3 feet of earth cover, or 18 inches of well-tamped earth, plus 6 inches of reinforced concrete or 8 inches of asphaltic concrete. When asphaltic or reinforced concrete paving is used as part of the protection, it shall extend at least 1 foot horizontally beyond the outline of the tank in all directions.

(c) Corrosion protection. Corrosion protection for the tank and its piping shall be provided by one or more of the following methods:

(i) Use of protective coatings or wrappings;

(ii) Cathodic protection; or,

(iii) Corrosion resistant materials of construction.

(d) Vents.

(i) Location and arrangement of vents for Class I liquids. Vent pipes from tanks storing Class I liquids shall be so located that the discharge point is outside of buildings, higher than the fill pipe opening, and not less than 12 feet above the adjacent ground level. Vent pipes shall discharge only upward in order to disperse vapors. Vent pipes 2 inches or less in nominal inside diameter shall not be obstructed by devices that will cause excessive back pressure. Vent pipe outlets shall be so located that flammable vapors will not enter building openings, or be trapped under eaves or other obstructions. If the vent pipe is less than 10 feet in length, or greater than 2 inches in nominal inside diameter, the outlet shall be provided with a vacuum and pressure relief device or there shall be an approved flame arrester located in the vent line at the outlet or within the approved distance from the outlet.

(ii) Size of vents. Each tank shall be vented through piping adequate in size to prevent blow-back of vapor or liquid at the fill opening while the tank is being filled. Vent pipes shall be not less than 1 1/4 inch nominal inside diameter.

TABLE H-11

VENT LINE DIAMETERS

Maximum flow GPM	Pipe length*		
	50 feet	100 feet	200 feet
	Inches	Inches	Inches
100	1 1/4	1 1/4	1 1/4
200	1 1/4	1 1/4	1 1/4
300	1 1/4	1 1/4	1 1/2
400	1 1/4	1 1/2	2
500	1 1/2	1 1/2	2
600	1 1/2	2	2
700	2	2	2
800	2	2	3
900	2	2	3
1,000	2	2	3

*Vent lines of 50 ft., 100 ft., and 200 ft. of pipe plus 7 ells.

(iii) Location and arrangement of vents for Class II or Class III liquids. Vent pipes from tanks storing Class II or Class III flammable liquids shall terminate outside of the building and higher than the fill pipe opening. Vent outlets shall be above normal snow level. They may be fitted with return bends, coarse screens or other devices to minimize ingress of foreign material.

(iv) Vent piping shall be constructed in accordance with WAC 296-24-33007. Vent pipes shall be so laid as to drain toward the tank without sags or traps in which liquid can collect. They shall be located so that they will not be subjected to physical damage. The tank end of the vent pipe shall enter the tank through the top.

(v) When tank vent piping is manifolded, pipe sizes shall be such as to discharge, within the pressure limitations of the system, the vapors they may be required to handle when manifolded tanks are filled simultaneously.

(e) Tank openings other than vents.

(i) Connections for all tank openings shall be vapor or liquid tight.

(ii) Openings for manual gaging, if independent of the fill pipe, shall be provided with a liquid-tight cap or cover. If inside a building, each such opening shall be protected against liquid overflow and possible vapor release by means of a spring- loaded check valve or other approved device.

(iii) Fill and discharge lines shall enter tanks only through the top. Fill lines shall be sloped toward the tank.

(iv) For Class IB and Class IC liquids other than crude oils, gasolines, and asphalts, the fill pipe shall be so designed and installed as to minimize the possibility of generating static electricity by terminating within 6 inches of the bottom of the tank.

(v) Filling and emptying connections which are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. Such connection shall be closed and liquid-tight when not in use. The connection shall be properly identified.

(4) Installation of tanks inside of buildings.

(a) Location. Tanks shall not be permitted inside of buildings except as provided in WAC 296-24-33011 and 296-24-33015 through 296-24-33019.

(b) Vents. Vents for tanks inside of buildings shall be as provided in (2)(d), (e), (f)(ii) and (3)(d) of this section, except that emergency venting by the use of weak roof seams on tanks shall not be permitted. Vents shall discharge vapors outside the buildings.

(c) Vent piping. Vent piping shall be constructed in accordance with WAC 296-24-33007.

(d) Tank openings other than vents.

(i) Connections for all tank openings shall be vapor or liquidtight. Vents are covered in (4)(b) of this section.

(ii) Each connection to a tank inside of buildings through which liquid can normally flow shall be provided with an internal or an external valve located as close as practical to the shell of the tank. Such valves, when external, and their connections to the tank shall be of steel except when the chemical characteristics of the liquid stored are incompatible with steel. When materials other than steel are necessary, they shall be suitable for the pressures, structural stresses, and temperatures involved, including fire exposures.

(iii) Flammable or combustible liquid tanks located inside of buildings, except in one-story buildings designed and protected for flammable or combustible liquid storage, shall be provided with an automatic-closing heat-actuated valve on each withdrawal connection below the liquid level, except for connections used for emergency disposal, to prevent continued flow in the event of fire in the vicinity of the tank. This function may be incorporated in the valve required in (4)(d)(ii) of this section, and if a separate valve, shall be located adjacent to the valve required in (4)(d)(ii) of this section.

(iv) Openings for manual gaging, if independent of the fill pipe (see (4)(d)(vi) of this section), shall be provided with a vaportight cap or cover. Each such opening shall be protected against liquid overflow and possible vapor release by means of a spring loaded check valve or other approved device.

(v) For Class IB and Class IC liquids other than crude oils, gasolines, and asphalts, the fill pipe shall be so designed and installed as to minimize the possibility of generating static electricity by terminating within 6 inches of the bottom of the tank.

(vi) The fill pipe inside of the tank shall be installed to avoid excessive vibration of the pipe.

(vii) The inlet of the fill pipe shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. The inlet of the fill pipe shall be closed and liquidtight when not in use. The fill connection shall be properly identified.

(viii) Tanks inside buildings shall be equipped with a device, or other means shall be provided, to prevent overflow into the building.

(5) Supports, foundations, and anchorage for all tank locations.

(a) General. Tank supports shall be installed on firm foundations. Tank supports shall be of concrete, masonry, or protected steel. Single wood timber supports (not cribbing) laid horizontally may be used for outside aboveground tanks if not more than 12 inches high at their lowest point.

(b) Fire resistance. Steel supports or exposed piling shall be protected by materials having a fire resistance rating of not less than 2 hours, except that steel saddles need not be protected if less than 12 inches high at their lowest point. Water spray protection or its equivalent may be used in lieu of fire-resistive materials to protect supports.

(c) Spheres. The design of the supporting structure for tanks such as spheres shall receive special engineering consideration.

(d) Load distribution. Every tank shall be so supported as to prevent the excessive concentration of loads on the supporting portion of the shell.

(e) Foundations. Tanks shall rest on the ground or on foundations made of concrete, masonry, piling, or steel. Tank foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.

(f) Flood areas. Where a tank is located in an area that may be subjected to flooding, the applicable precautions outlined in (5)(f) of this section shall be observed.

(i) No aboveground vertical storage tank containing a flammable or combustible liquid shall be located so that the allowable liquid level within the tank is below the established maximum flood stage, unless the tank is provided with a guiding structure such as described in (5)(f)(xiii), (xiv) and (xv) of this section.

(ii) Independent water supply facilities shall be provided at locations where there is no ample and dependable public

water supply available for loading partially empty tanks with water.

(iii) In addition to the preceding requirements, each tank so located that more than 70 percent, but less than 100 percent, of its allowable liquid storage capacity will be submerged at the established maximum flood stage, shall be safeguarded by one of the following methods: Tank shall be raised, or its height shall be increased, until its top extends above the maximum flood stage a distance equivalent to 30 percent or more of its allowable liquid storage capacity: *Provided, however,* That the submerged part of the tank shall not exceed two and one-half times the diameter. Or, as an alternative to the foregoing, adequate noncombustible structural guides, designed to permit the tank to float vertically without loss of product, shall be provided.

(iv) Each horizontal tank so located that more than 70 percent of its storage capacity will be submerged at the established flood stage, shall be anchored, attached to a foundation of concrete or of steel and concrete, of sufficient weight to provide adequate load for the tank when filled with flammable or combustible liquid and submerged by flood waters to the established flood stage, or adequately secured by other means.

(v) Spherical and spheroidal tanks shall be protected by applicable methods as specified for either vertical or horizontal tanks.

(vi) At locations where there is no ample and dependable water supply, or where filling of underground tanks with liquid is impracticable because of the character of their contents, their use, or for other reasons, each tank shall be safeguarded against movement when empty and submerged by high ground water or flood waters by anchoring, weighting with concrete or other approved solid loading material, or securing by other means. Each such tank shall be so constructed and installed that it will safely resist external pressures due to high ground water or flood waters.

(vii) At locations where there is an ample and dependable water supply available, underground tanks containing flammable or combustible liquids, so installed that more than 70 percent of their storage capacity will be submerged at the maximum flood stage, shall be so anchored, weighted, or secured by other means, as to prevent movement of such tanks when filled with flammable or combustible liquids, and submerged by flood waters to the established flood stage.

(viii) Pipe connections below the allowable liquid level in a tank shall be provided with valves or cocks located as closely as practicable to the tank shell. Such valves and their connections to tanks shall be of steel or other material suitable for use with the liquid being stored. Cast iron shall not be used.

(ix) At locations where an independent water supply is required, it shall be entirely independent of public power and water supply. Independent source of water shall be available when flood waters reach a level not less than 10 feet below the bottom of the lowest tank on a property.

(x) The self-contained power and pumping unit shall be so located or so designed that pumping into tanks may be carried on continuously throughout the rise in flood waters from a level 10 feet below the lowest tank to the level of the potential flood stage.

(xi) Capacity of the pumping unit shall be such that the rate of rise of water in all tanks shall be equivalent to the established potential average rate of rise of flood waters at any stage.

(xii) Each independent pumping unit shall be tested periodically to insure that it is in satisfactory operating condition.

(xiii) Structural guides for holding floating tanks above their foundations shall be so designed that there will be no resistance to the free rise of a tank, and shall be constructed of noncombustible material.

(xiv) The strength of the structure shall be adequate to resist lateral movement of a tank subject to a horizontal force in any direction equivalent to not less than 25 pounds per square foot acting on the projected vertical cross-sectional area of the tank.

(xv) Where tanks are situated on exposed points or bends in a shoreline where swift currents in flood waters will be present, the structures shall be designed to withstand a unit force of not less than 50 pounds per square foot.

(xvi) The filling of a tank to be protected by water loading shall be started as soon as flood waters reach a dangerous flood stage. The rate of filling shall be at least equal to the rate of rise of the floodwaters (or the established average potential rate of rise).

(xvii) Sufficient fuel to operate the water pumps shall be available at all times to insure adequate power to fill all tankage with water.

(xviii) All valves on connecting pipelines shall be closed and locked in closed position when water loading has been completed.

(xix) Where structural guides are provided for the protection of floating tanks, all rigid connections between tanks and pipelines shall be disconnected and blanked off or binded before the floodwaters reach the bottom of the tank, unless control valves and their connections to the tank are of a type designed to prevent breakage between the valve and the tank shell.

(xx) All valves attached to tanks other than those used in connection with water loading operations shall be closed and locked.

(xxi) If a tank is equipped with a swing line, the swing pipe shall be raised to and secured at its highest position.

(xxii) Inspections. The director or his/her designated representative shall make periodic inspections of all plants where the storage of flammable or combustible liquids is such as to require compliance with the foregoing requirements, in order to assure the following:

(A) That all flammable or combustible liquid storage tanks are in compliance with these requirements and so maintained.

(B) That detailed printed instructions of what to do in flood emergencies are properly posted.

(C) That station operators and other employees depended upon to carry out such instructions are thoroughly informed as to the location and operation of such valves and other equipment necessary to effect these requirements.

(g) Earthquake areas. In areas subject to earthquakes, the tank supports and connections shall be designed to resist damage as a result of such shocks.

(6) Sources of ignition. In locations where flammable vapors may be present, precautions shall be taken to prevent ignition by eliminating or controlling sources of ignition. Sources of ignition may include open flames, lightning,

smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, and mechanical), spontaneous ignition, chemical and physical-chemical reactions, and radiant heat.

(7) Testing.

(a) General. All tanks, whether shop built or field erected, shall be strength tested before they are placed in service in accordance with the applicable sections of the code under which they were built. The American Society of Mechanical Engineers (ASME) code stamp. American Petroleum Institute (API) monogram, or the label of the Underwriters' Laboratories, Inc., on a tank shall be evidence of compliance with this strength test. Tanks not marked in accordance with the above codes shall be strength tested before they are placed in service in accordance with good engineering principles and reference shall be made to the sections on testing in the codes listed in (1)(c)(i), (d)(ii) or (e)(ii) of this section.

(b) Strength. When the vertical length of the fill and vent pipes is such that when filled with liquid the static head imposed upon the bottom of the tank exceeds 10 pounds per square inch, the tank and related piping shall be tested hydrostatically to a pressure equal to the static head thus imposed.

(c) Tightness. In addition to the strength test called for in (7)(a) and (b), all tanks and connections shall be tested for tightness. Except for underground tanks, this tightness test shall be made at operating pressure with air, inert gas, or water prior to placing the tank in service. In the case of field-erected tanks the strength test may be considered to be the test for tank tightness. Underground tanks and piping, before being covered, enclosed, or placed in use, shall be tested for tightness hydrostatically, or with air pressure at not less than 3 pounds per square inch and not more than 5 pounds per square inch.

(d) Repairs. All leaks or deformations shall be corrected in an acceptable manner before the tank is placed in service. Mechanical caulking is not permitted for correcting leaks in welded tanks except pinhole leaks in the roof.

(e) Derated operations. Tanks to be operated at pressures below their design pressure may be tested by the applicable provisions of (7)(a) or (b) based upon the pressure developed under full emergency venting of the tank.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-33005, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-33005, filed 11/14/88; Order 76-6, § 296-24-33005, filed 3/1/76; Order 73-5, § 296-24-33005, filed 5/9/73 and Order 73-4, § 296-24-33005, filed 5/7/73.]

WAC 296-24-33007 Piping, valves, and fittings. (1) General.

(a) Design. The design (including selection of materials) fabrication, assembly, test, and inspection of piping systems containing flammable or combustible liquids shall be suitable for the expected working pressures and structural stresses. Conformity with the applicable provisions of Pressure Piping, ANSI B31-1967 series and the provisions of this section, shall be considered prima facie evidence of compliance with the foregoing provisions.

(b) Exceptions. This section does not apply to any of the following:

(i) Tubing or casing on any oil or gas wells and any piping connected directly thereto.

(ii) Motor vehicle, aircraft, boat, or portable or stationary engines.

(iii) Piping within the scope of any applicable boiler and pressures vessel code.

(c) Definitions. As used in this section, piping systems consist of pipe, tubing flanges, bolting, gaskets, valves, fittings, the pressure containing parts of other components such as expansion joints and strainers, and devices which serve such purposes as mixing, separating, snubbing, distributing, metering, or controlling flow.

(2) Materials for piping, valves, and fittings.

(a) Required materials. Materials for piping, valves, or fittings shall be steel, nodular iron or malleable iron, except as provided in subsections (b), (c) and (d).

(b) Exceptions. Materials other than steel, nodular iron, or malleable iron may be used underground, or if required by the properties of the flammable or combustible liquid handled. Material other than steel, nodular iron, or malleable iron shall be designed to specifications embodying principles recognized as good engineering practices for the material used.

(c) Linings. Piping, valves, and fittings may have combustible or noncombustible linings.

(d) Low-melting materials. When low-melting point materials such as aluminum and brass or materials that soften on fire exposure such as plastics, or nonductile materials such as cast iron, are necessary, special consideration shall be given to their behavior on fire exposure. If such materials are used in aboveground piping systems or inside buildings, they shall be suitably protected against fire exposure or so located that any spill resulting from the failure of these materials could not unduly expose persons, important buildings or structures or can be readily controlled by remote valves.

(3) Pipe joints. Joints shall be made liquid tight. Welded or screwed joints or approved connectors shall be used. Threaded joints and connections shall be made up tight with a suitable lubricant or piping compound. Pipe joints dependent upon the friction characteristics of combustible materials for mechanical continuity of piping shall not be used inside buildings. They may be used outside of buildings above or below ground. If used aboveground, the piping shall either be secured to prevent disengagement at the fitting or the piping system shall be so designed that any spill resulting from such disengagement could not unduly expose persons, important buildings or structures, and could be readily controlled by remote valves.

(4) Supports. Piping systems shall be substantially supported and protected against physical damage and excessive stresses arising from settlement, vibration, expansion, or contraction.

(5) Protection against corrosion. All piping for flammable or combustible liquids, both aboveground and underground, where subject to external corrosion, shall be painted or otherwise protected.

(6) Valves. Piping systems shall contain a sufficient number of valves to operate the system properly and to protect the plant. Piping systems in connection with pumps shall contain a sufficient number of valves to control properly the flow of liquid in normal operation and in the

event of physical damage. Each connection to pipelines, by which equipment such as tankcars or tank vehicles discharge liquids by means of pumps into storage tanks, shall be provided with a check valve for automatic protection against backflow if the piping arrangement is such that backflow from the system is possible.

(7) Testing. All piping before being covered, enclosed, or placed in use shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system, or pneumatically tested to 110 percent of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch gage at the highest point of the system. This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least 10 minutes.

[Order 76-6, § 296-24-33007, filed 3/1/76; Order 73-5, § 296-24-33007, filed 5/9/73 and Order 73-4, § 296-24-33007, filed 5/7/73.]

WAC 296-24-33009 Container and portable tank storage. (1) Scope.

(a) General. This section shall apply only to the storage of flammable or combustible liquids in drums or other containers (including flammable aerosols) not exceeding 60 gallons individual capacity and those portable tanks not exceeding 660 gallons individual capacity.

(b) Exceptions. This section shall not apply to the following:

(i) Storage of containers in bulk plants, service stations, refineries, chemical plants, and distilleries;

(ii) Class I or Class II liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine;

(iii) Flammable or combustible paints, oils, varnishes, and similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days;

(iv) Beverages when packaged in individual containers not exceeding 1 gallon in size.

(2) Design, construction, and capacity of containers.

(a) General. Only approved containers and portable tanks shall be used. Metal containers and portable tanks meeting the requirements of and containing products authorized by Chapter I, Title 49 of the Code of Federal Regulations - October 1, 1972, (regulations issued by the hazardous materials regulations board, department of transportation), shall be deemed to be acceptable.

(b) Emergency venting. Each portable tank shall be provided with one or more devices installed in the top with sufficient emergency venting capacity to limit internal pressure under fire exposure conditions to 10 p.s.i.g., or 30 percent of the bursting pressure of the tank, whichever is greater. The total venting capacity shall be not less than that specified in WAC 296-24-33005 (2)(e)(iii) or (v). At least one pressure-actuated vent having a minimum capacity of 6,000 cubic feet of free air (14.7 p.s.i.a. and 60°F) shall be used. It shall be set to open at not less than 5 p.s.i.g. If fusible vents are used, they shall be actuated by elements that operate at a temperature not exceeding 300°F.

TABLE H-12

MAXIMUM ALLOWABLE SIZE OF CONTAINERS AND PORTABLE TANKS

Container Type	Flammable liquids			Combustible Liquids	
	Class IA	Class IB	Class IC	Class II	Class & III
Glass or approved plastic	1 pt.	1 qu.	1 gal.	1 gal.	1 gal.
Metal (other than DOT drums)	1 gal.	5 gal.	5 gal.	5 gal.	5 gal.
Safety cans	2 gal.	5 gal.	5 gal.	5 gal.	5 gal.
Metal drums (DOT spec.)	60 gal.	60 gal.	60 gal.	60 gal.	60 gal.
Approved portable tanks	660 gal.	660 gal.	660 gal.	660 gal.	660 gal.

Container exemptions:

(i) Medicines, beverages, foodstuffs, cosmetics and other common consumer items, when packaged according to commonly accepted practices, shall be exempt from the requirements of (4)(a) and (b) of this section.

(c) Size. Flammable and combustible liquid containers shall be in accordance with Table H-12, except that glass or plastic containers of no more than 1-gallon capacity may be used for a Class IA or IB flammable liquid if:

(i) Such liquid either would be rendered unfit for its intended use by contact with metal or would excessively corrode a metal container so as to create a leakage hazard; and

(ii) The user's process either would require more than 1 pint of Class IA liquid or more than 1 quart of a Class IB liquid of a single assay lot to be used at one time, or would require the maintenance of an analytical standard liquid of a quality which is not met by the specified standards of liquids available, and the quantity of the analytical standard liquid required to be used in any one control process exceeds one-sixteenth the capacity of the container allowed under Table H-12 for the class of liquid; or

(iii) The containers are intended for direct export outside the United States.

(3) Design, construction, and capacity of storage cabinets.

(a) Maximum capacity. Not more than 60 gallons of Class I or Class II liquids, nor more than 120 gallons of Class III liquids may be stored in a storage cabinet.

(b) Fire resistance. Storage cabinets shall be designed and constructed to limit the internal temperature to not more than 325°F when subjected to a 10-minute fire test using the standard time-temperature curve as set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969. All joints and seams shall remain tight and the door shall remain securely closed during the fire test. Cabinets shall be labeled "Flammable—Keep fire away," to meet specifications set forth in WAC 296-24-140.

(i) Metal cabinets constructed in the following manner shall be deemed to be in compliance. The bottom, top, door, and sides of cabinet shall be at least No. 18 gage sheet iron and double walled with 1 1/2-inch air space. Joints shall be riveted, welded or made tight by some equally effective means. The door shall be provided with a three-point lock,

and the door sill shall be raised at least 2 inches above the bottom of the cabinet.

(ii) Wooden cabinets constructed in the following manner shall be deemed in compliance. The bottom, sides, and top shall be constructed of an approved grade of plywood at least 1 inch in thickness, which shall not break down or delaminate under fire conditions. All joints shall be rabbetted and shall be fastened in two directions with flathead woodscrews. When more than one door is used, there shall be a rabbetted overlap of not less than 1 inch. Hinges shall be mounted in such a manner as not to lose their holding capacity due to loosening or burning out of the screws when subjected to the fire test.

(4) Design and construction of inside storage rooms.

(a) Construction. Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use. Such construction shall comply with the test specifications set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969. Where an automatic sprinkler system is provided, the system shall be designed and installed in an acceptable manner. Openings to other rooms or buildings shall be provided with noncombustible liquid-tight raised sills or ramps at least 4 inches in height, or the floor in the storage area shall be at least 4 inches below the surrounding floor. Openings shall be provided with approved self-closing fire doors. The room shall be liquid tight where the walls join the floor. A permissible alternate to the sill or ramp is an open-grated trench inside of the room which drains to a safe location. Where other portions of the building or other properties are exposed, windows shall be protected as set forth in the Standard for Fire Doors and Windows, NFPA No. 80-1968, for Class E or F openings. Wood at least 1 inch nominal thickness may be used for shelving, racks, dunnage, scuff boards, floor overlay, and similar installations.

(b) Rating and capacity. Storage in inside storage rooms shall comply with Table H-13.

TABLE H-13

STORAGE IN INSIDE ROOMS

Fire protection* provided	Fire resistance	Maximum size	Total allowable quantities (gals./sq. ft./floor area)
Yes	2 hours	500 sq.ft.	10
No	2 hours	500 sq.ft.	4
Yes	1 hour	150 sq.ft.	5
No	1 hour	150 sq.ft.	2

* Fire protection system shall be sprinkler, water spray, carbon dioxide, or other system.

(c) Wiring. Electrical wiring and equipment within inside storage rooms used to store Class I liquids shall comply with the provisions of chapter 296-24 WAC Part L for Class I, Division 2 locations. For inside storage rooms used to store Class II and III liquids the pertinent provisions chapter 296-24 WAC Part L apply.

(d) Ventilation. Every inside storage room shall be provided with either a gravity or a mechanical exhaust ventilation system. Such system shall be designed to provide for a complete change of air within the room at least six times per hour. If a mechanical exhaust system is used, it shall be controlled by a switch located outside of the door. The ventilating equipment and any lighting fixtures shall be operated by the same switch. A pilot light shall be installed adjacent to the switch if Class I flammable liquids are dispensed within the room. Where gravity ventilation is provided, the fresh air intake, as well as the exhaust outlet from the room, shall be on the exterior of the building in which the room is located.

(e) Storage in inside storage rooms. In every inside storage room there shall be maintained one clear aisle at least 3 feet wide. Containers over 30 gallons capacity shall not be stacked one upon the other. Dispensing shall be by approved pump or self-closing faucet only.

(5) Storage inside building.

(a) Egress. Flammable or combustible liquids, including stock for sale, shall not be stored so as to limit use of exits, stairways, or areas normally used for the safe egress of people.

(b) Containers. The storage of flammable or combustible liquids in containers or portable tanks shall comply with (4)(c) through (e) of this section.

(c) Office occupancies. Storage shall be prohibited except that which is required for maintenance and operation of building and operation of equipment. Such storage shall be kept in closed metal containers stored in a storage cabinet or in safety cans or in an inside storage room not having a door that opens into that portion of the building used by the public.

(d) Mercantile occupancies and other retail stores.

(i) In rooms or areas accessible to the public, storage shall be limited to quantities needed for display and normal merchandising purposes but shall not exceed 2 gallons per square foot of gross floor area. The gross floor area used for computing the maximum quantity permitted shall be considered as that portion of the store actually being used for merchandising flammable and combustible liquids.

(ii) Where the aggregate quantity of additional stock exceeds 60 gallons of Class IA, or 120 gallons of Class IB, or 180 gallons of Class IC, or 240 gallons of Class II, or 500 gallons of Class III liquids, or any combination of Class I and Class II liquids exceeding 240 gallons, it shall be stored in a room or portion of the building that complies with the construction provisions for an inside storage room as prescribed in (4) of this section. For water miscible liquids, these quantities may be doubled.

(iii) Containers in a display area shall not be stacked more than 3 feet or two containers high, whichever is the greater, unless the stacking is done on fixed shelving or is otherwise satisfactorily secured.

(iv) Shelving shall be of stable construction, of sufficient depth and arrangement such that containers displayed thereon shall not be easily displaced.

(v) Leaking containers shall be removed to a storage room or taken to a safe location outside the building and the contents transferred to an undamaged container.

(e) General purpose public warehouses. Storage shall be in accordance with Table H-14 or H-15 and in buildings or in portions of such buildings cut off by standard firewalls.

Material creating no fire exposure hazard to the flammable or combustible liquids may be stored in the same area.

TABLE H-14

INDOOR CONTAINER STORAGE

Class liquid	Storage level	Protected storage maximum per pile		Unprotected storage maximum per pile	
		Gal.	Ht.	Gal.	Ht.
IA	Ground and upper floors	2,750 (50)	3 ft. (1)	660 (12)	3 ft. (1)
	Basement	Not permitted		Not permitted	
IB	Ground and upper floors	5,500 (100)	6 ft. (2)	1,375 (25)	3 ft. (1)
	Basement	Not permitted		Not permitted	
IC	Ground and upper floors	16,500 (300)	6 ft. (2)	4,125 (75)	3 ft. (1)
	Basement	Not permitted		Not permitted	
II	Ground and upper floors	16,500 (300)	9 ft. (3)	4,125 (75)	9 ft. (3)
	Basement	5,500 (100)	9 ft. (3)	Not permitted	
III	Ground and upper floors	55,000 (1,000)	15 ft. (5)	13,750 (250)	12 ft. (4)
	Basement	8,250 (450)	9 ft. (3)	Not permitted	

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile shall be the smallest of the 2 or more separate maximum gallonages.

Note 2: Aisles shall be provided so that no container is more than 12 ft. from an aisle. Main aisles shall be at least 8 ft. wide and side aisles at least 4 ft. wide.

(Numbers in parentheses indicate corresponding number of 55-gal. drums.)

Note 3: Each pile shall be separated from each other by at least 4 ft.

TABLE H-15

INDOOR PORTABLE TANK STORAGE

Class liquid	Storage level	Protected storage maximum per pile		Unprotected storage maximum per pile	
		Gals.	Ht.	Gals.	Ht.
IA	Ground and upper floors	Not permitted		Not permitted	
	Basement	Not permitted		Not permitted	
IB	Ground and upper floors	20,000	7 ft.	2,000	7 ft.
	Basement	Not permitted		Not permitted	
IC	Ground and upper floors	40,000	14 ft.	5,500	7 ft.
	Basement	Not permitted		Not permitted	
II	Ground and upper floors	40,000	14 ft.	5,500	7 ft.
	Basement	20,000	7 ft.	Not permitted	
III	Ground and upper floors	60,000	14 ft.	22,000	7 ft.
	Basement	20,000	7 ft.	Not permitted	

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile shall be the smallest of the 2 or more separate maximum gallonages.

Note 2: Aisles shall be provided so that no portable tank is more than 12 ft. from an aisle. Main aisles shall be at least 8 ft. wide and side aisles at least 4 ft. wide.

Note 3: Each pile shall be separated from each other by at least 4 ft.

(f) Flammable and combustible liquid warehouses or storage buildings.

(i) If the storage building is located 50 feet or less from a building or line of adjoining property that may be built upon, the exposing wall shall be a blank wall having a fire-resistance rating of at least 2 hours.

(ii) The total quantity of liquids within a building shall not be restricted, but the arrangement of storage shall comply with Table H-14 or H-15.

(iii) Containers in piles shall be separated by pallets or dunnage where necessary to provide stability and to prevent excessive stress on container walls.

(iv) Portable tanks stored over one tier high shall be designed to nest securely, without dunnage and adequate materials handling equipment shall be available to handle tanks safely at the upper tier level.

(v) No pile shall be closer than 3 feet to the nearest beam, chord, girder, or other obstruction, and shall be 3 feet below sprinkler deflectors or discharge orifices of water spray, or other overhead fire protection systems.

(vi) Aisles of at least 3 feet wide shall be provided where necessary for reasons of access to doors, windows or standpipe connections.

(6) Storage outside buildings.

(a) General. Storage outside buildings shall be in accordance with Table H-16 or H-17, and (6)(b) and (d) of this section.

TABLE H-16

OUTDOOR CONTAINER STORAGE

1 Class	2 Maximum per pile (see note 1)	3 Distance between piles (see note 2)	4 Distance to property line that can be built upon (see notes 3 & 4)	5 Distance to street, alley, public way (see note 4)
	gal.	ft.	ft.	ft.
IA	1,100	5	20	10
IB	2,200	5	20	10
IC	4,400	5	20	10
II	8,800	5	10	5
III	22,000	5	10	5

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage in that pile shall be the smallest of the 2 or more separate gallonages.

Note 2: Within 200 ft. of each container, there shall be 12-ft. wide access way to permit approach of fire control apparatus.

Note 3: The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 shall be doubled.

Note 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distances in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

(b) Maximum storage. A maximum of 1,100 gallons of flammable or combustible liquids may be located adjacent to buildings located on the same premises and under the same management provided the provisions of (6)(b)(i) and (ii) are complied with.

(i) The building shall be a one-story building devoted principally to the handling and storing of flammable or combustible liquids or the building shall have 2 hour fire-resistive exterior walls having no opening within 10 feet of such storage.

(ii) Where quantity stored exceeds 1,100 gallons, or provisions of (6)(b)(i) cannot be met, a minimum distance of 10 feet between buildings and nearest container of flammable or combustible liquid shall be maintained.

TABLE H-17

OUTDOOR PORTABLE TANK STORAGE

1 Class	2 Maximum per pile	3 Distance between piles	4 Distance to property line that can be built upon	5 Distance to street, alley, public way
	gal.	ft.	ft.	ft.
IA	2,200	5	20	10
IB	4,400	5	20	10
IC	8,800	5	20	10
II	17,600	5	10	5
III	44,000	5	10	5

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage in that pile shall be the smallest of the 2 or more separate gallonages.

Note 2: Within 200 ft. of each portable tank, there shall be a 12-ft. wide access way to permit approach of fire control apparatus.

Note 3: The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 shall be doubled.

Note 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distances in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

(c) Spill containment. The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures or shall be surrounded by a curb at least 6 inches high. When curbs are used, provisions shall be made for draining of accumulations of ground or rain water or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.

(d) Security. The storage area shall be protected against tampering or trespassers where necessary and shall be kept free of weeds, debris and other combustible material not necessary to the storage.

(7) Fire control.

(a) Extinguishers. Suitable fire control devices, such as small hose or portable fire extinguishers, shall be available at locations where flammable or combustible liquids are stored.

(i) At least one portable fire extinguisher having a rating of not less than 12-B units shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage.

(ii) At least one portable fire extinguisher having a rating of not less than 12-B units must be located not less than 10 feet, nor more than 25 feet, from any Class I or Class II liquid storage area located outside of a storage room but inside a building.

(b) Sprinklers. When sprinklers are provided, they shall be installed in accordance with chapter 296-24 WAC, Part G-3.

(c) Open flames and smoking. Open flames and smoking shall not be permitted in flammable or combustible liquid storage areas.

(d) Water reactive materials. Materials which will react with water shall not be stored in the same room with flammable or combustible liquids.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-33009, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-33009, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33009, filed 4/19/85; Order 76-6, § 296-24-33009, filed 3/1/76; Order 74-27, § 296-24-33009, filed 5/7/74; Order 73-5, § 296-24-33009, filed 5/9/73 and Order 73-4, § 296-24-33009, filed 5/7/73.]

WAC 296-24-33011 Industrial plants. (1) Scope.

(a) Application. This section shall apply to those industrial plants where:

(i) The use of flammable or combustible liquids is incidental to the principal business, or

(ii) Where flammable or combustible liquids are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical reaction. This section shall not apply to chemical plants, refineries or distilleries.

(b) Exceptions. Where portions of such plants involve chemical reactions such as oxidation, reduction, halogenation, hydrogenation, alkylation, polymerization, and other chemical processes, those portions of the plant shall be in accordance with WAC 296-24-33017.

(2) Incidental storage or use of flammable and combustible liquids.

(a) Application. This shall be applicable to those portions of an industrial plant where the use and handling of flammable or combustible liquids is only incidental to the principal business, such as automobile assembly, construction of electronic equipment, furniture manufacturing, or other similar activities.

(b) Containers. Flammable or combustible liquids shall be stored in tanks or closed containers.

(i) Except as provided in (b)(ii) and (iii) of this subsection all storage shall comply with WAC 296-24-33009 (3) or (4).

(A) When the only operation involved is the storage of flammables in containers or tanks that are closed and remain

closed throughout the storage, WAC 296-24-33009(5) and tables H-14 and H-15 will apply.

(B) When the procedure involved is mixing, transferring, or other exposure of liquids to vaporization through operational procedures in which containers or tanks do not remain closed in the storage area, WAC 296-24-33009(4) and table H-13 shall be used to determine permissible quantities.

(ii) The quantity of liquid that may be located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building shall not exceed:

(A) Twenty-five gallons of Class IA liquids in containers.

(B) One hundred twenty gallons of Class IB, IC, II, or III liquids in containers.

(C) Six hundred sixty gallons of Class IB, IC, II, or III liquids in a single portable tank.

(iii) Where large quantities of flammable or combustible liquids are necessary, storage may be in tanks which shall comply with the applicable requirements of WAC 296-24-33005.

(c) Separation and protection. Areas in which flammable or combustible liquids are transferred from one tank or container to another container shall be separated from other operations in the building by adequate distance or by construction having adequate fire resistance. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided.

(d) Handling liquids at point of final use.

(i) Flammable liquids shall be kept in covered containers when not actually in use.

(ii) Where flammable or combustible liquids are used or handled, except in closed containers, means shall be provided to dispose promptly and safely of leakage or spills.

(iii) Class I liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel.

(iv) Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited.

(3) Unit physical operations.

(a) Application. This subsection (3) shall be applicable in those portions of industrial plants where flammable or combustible liquids are handled or used in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical change. Examples are plants compounding cosmetics, pharmaceuticals, solvents, cleaning fluids, insecticides, and similar types of activities.

(b) Location. Industrial plants shall be located so that each building or unit of equipment is accessible from at least one side for fire fighting and fire control purposes. Buildings shall be located with respect to lines of adjoining property which may be built upon as set forth in WAC 296-24-33017 (2)(a) and (b) except that the blank wall referred to in WAC 296-24-33017 (2)(b) shall have a fire resistance rating of at least two hours.

(c) Chemical processes. Areas where unstable liquids are handled or small scale unit chemical processes are carried on shall be separated from the remainder of the plant by a fire wall of two-hour minimum fire resistance rating.

(d) Drainage.

(i) Emergency drainage systems shall be provided to direct flammable or combustible liquid leakage and fire protection water to a safe location. This may require curbs, scuppers, or special drainage systems to control the spread of fire; see WAC 296-24-33005 (2)(g)(ii).

(ii) Emergency drainage systems, if connected to public sewers or discharged into public waterways, shall be equipped with traps or separators.

(iii) The industrial plant shall be designed and operated to prevent the normal discharge of flammable or combustible liquids into public waterways, public sewers, or adjoining property.

(e) Ventilation.

(i) Areas as defined in subsection (1)(a) of this section using Class I liquids shall be ventilated at a rate of not less than one cubic foot per minute per square foot of solid floor area. This shall be accomplished by natural or mechanical ventilation with discharge or exhaust to a safe location outside of the building. Provision shall be made for introduction of makeup air in such a manner as not to short circuit the ventilation. Ventilation shall be arranged to include all floor areas or pits where flammable vapors may collect.

(ii) Equipment used in a building and the ventilation of the building shall be designed so as to limit flammable vapor-air mixtures under normal operating conditions to the interior of equipment, and to not more than five feet from equipment which exposes Class I liquids to the air. Examples of such equipment are dispensing stations, open centrifuges, plate and frame filters, open vacuum filters, and surfaces of open equipment.

(f) Storage and handling. The storage, transfer, and handling of liquid shall comply with WAC 296-24-33017(4).

(4) Tank vehicle and tank car loading and unloading.

Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property which may be built upon by a distance of twenty-five feet for Class I liquids and fifteen feet for Class II and Class III liquids measured from the nearest position of any fill stem. Buildings for pumps or shelters for personnel may be a part of the facility. Operations of the facility shall comply with the appropriate portions of WAC 296-24-33013(3).

(5) Fire control.

(a) Portable and special equipment. Portable fire extinguishment and control equipment shall be provided in such quantities and types as are needed for the special hazards of operation and storage.

(b) Water supply. Water shall be available in volume and at adequate pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems as the need is indicated by the special hazards of operation, dispensing and storage.

(c) Special extinguishers. Special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical shall be provided as the need is indicated by the special hazards of operation dispensing and storage.

(d) Special hazards. Where the need is indicated by special hazards of operation, flammable or combustible liquid processing equipment, major piping, and supporting steel shall be protected by approved water spray systems, deluge systems, approved fire-resistant coatings, insulation, or any combination of these.

(e) Maintenance. All plant fire protection facilities shall be adequately maintained and periodically inspected and tested to make sure they are always in satisfactory operating condition, and they will serve their purpose in time of emergency.

(6) Sources of ignition.

(a) General. Adequate precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

(b) Grounding. Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of these standards shall be deemed to have been complied with.

(7) Electrical.

(a) All electrical wiring and equipment shall be installed according to chapter 296-24 WAC Part L.

(b) Locations where flammable vapor-air mixtures may exist under normal operations shall be classified Class I, Division 1 according to the requirements of chapter 296-24 WAC Part L. For those pieces of equipment installed in accordance with the requirements of subsection (3)(e)(ii) of this section, the Division 1 area shall extend five feet in all directions from all points of vapor liberation. All areas within pits shall be classified Division 1 if any part of the pit is within a Division 1 or 2 classified area, unless the pit is provided with mechanical ventilation.

(c) Locations where flammable vapor-air mixtures may exist under abnormal conditions and for a distance beyond Division 1 locations shall be classified Division 2 according to the requirements of chapter 296-24 WAC Part L. These locations include an area within twenty feet horizontally, three feet vertically beyond a Division 1 area, and up to three feet above floor or grade level within twenty-five feet, if indoors, or ten feet if outdoors, from any pump, bleeder, withdrawal fitting, meter, or similar device handling Class I liquids. Pits provided with adequate mechanical ventilation within a Division 1 or 2 area shall be classified Division 2. If Class II or Class III liquids only are handled, then ordinary electrical equipment is satisfactory though care shall be used in locating electrical apparatus to prevent hot metal from falling into open equipment.

(d) Where the provisions of (a), (b), and (c) of this subsection require the installation of electrical equipment suitable for Class I, Division 1 or Division 2 locations, ordinary electrical equipment including switchgear may be used if installed in a room or enclosure which is maintained under positive pressure with respect to the hazardous area. Ventilation makeup air shall be uncontaminated by flammable vapors.

(8) Repairs to equipment. Hot work, such as welding or cutting operations, use of spark-producing power tools, and chipping operations shall be permitted only under supervision of an individual in responsible charge. The individual in responsible charge shall make an inspection of the area to be sure that it is safe for the work to be done and that safe procedures will be followed for the work specified.

(9) Housekeeping.

(a) General. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Spills shall be cleaned up promptly.

(b) Access. Adequate aisles shall be maintained for unobstructed movement of personnel and so that fire protection equipment can be brought to bear on any part of flammable or combustible liquid storage, use, or any unit physical operation.

(c) Waste and residue. Combustible waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.

(d) Clear zone. Ground area around buildings and unit operating areas shall be kept free of weeds, trash, or other unnecessary combustible materials.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-33011, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-33011, filed 11/22/91, effective 12/24/91; 89-11-035 (Order 89-03), § 296-24-33011, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33011, filed 4/19/85; Order 76-6, § 296-24-33011, filed 3/1/76; Order 73-5, § 296-24-33011, filed 5/9/73 and Order 73-4, § 296-24-33011, filed 5/7/73.]

WAC 296-24-33013 Bulk plants. (1) Storage.

(a) Class I liquids. Class I liquids shall be stored in closed containers, or in storage tanks above ground outside of buildings, or underground in accordance with WAC 296-24-33005.

(b) Class II and III liquids. Class II and Class III liquids shall be stored in containers, or in tanks within buildings or above ground outside of buildings, or underground in accordance with WAC 296-24-33005.

(c) Piling containers. Containers of flammable or combustible liquids when piled one upon the other shall be separated by dunnage sufficient to provide stability and to prevent excessive stress on container walls. The height of the pile shall be consistent with the stability and strength of containers.

(2) Buildings.

(a) Exits. Rooms in which flammable or combustible liquids are stored or handled by pumps shall have exit facilities arranged to prevent occupants from being trapped in the event of fire.

(b) Heating. Rooms in which Class I liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam or hot water. Rooms containing heating appliances involving sources of ignition shall be located and arranged to prevent entry of flammable vapors.

(c) Ventilation.

(i) Ventilation shall be provided for all rooms, buildings, or enclosures in which Class I liquids are pumped or dispensed. Design of ventilation systems shall take into account the relatively high specific gravity of the vapors. Ventilation may be provided by adequate openings in outside walls at floor level unobstructed except by louvers or course screens. Where natural ventilation is inadequate, mechanical ventilation shall be provided.

(ii) Class I liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

(iii) Containers of Class I liquids shall not be drawn from or filled within buildings unless provision is made to prevent the accumulation of flammable vapors in hazardous concentrations. Where mechanical ventilation is required, it shall be kept in operation while flammable liquids are being handled.

(3) Loading and unloading facilities.

(a) Separation. Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property that may be built upon by a distance of 25 feet for Class I liquids and 15 feet for Class II and Class III liquids measured from the nearest position of any fill spout. Buildings for pumps or shelters for personnel may be a part of the facility.

(b) Class restriction. Equipment such as piping, pumps, and meters used for the transfer of Class I liquids between storage tanks and the fill stem of the loading rack shall not be used for the transfer of Class II or Class III liquids.

(c) Valves. Valves used for the final control for filling tank vehicles shall be of the self-closing type and manually held open except where automatic means are provided for shutting off the flow when the vehicle is full or after filling of a preset amount.

(d) Static protection.

(i) Bonding facilities for protection against static sparks during the loading of tank vehicles through open domes shall be provided:

(A) Where Class I liquids are loaded, or

(B) Where Class II or Class III liquids are loaded into vehicles which may contain vapors from previous cargoes of Class I liquids.

(ii) Protection as required in (3)(d)(i) of this section shall consist of a metallic bond wire permanently electrically connected to the fill stem or to some part of the rack structure in electrical contact with the fill stem. The free end of such wire shall be provided with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle.

(iii) Such bonding connection shall be made fast to the vehicle or tank before dome covers are raised and shall remain in place until filling is completed and all dome covers have been closed and secured.

(iv) Bonding as specified in (3)(d)(i), (ii) and (iii) of this section is not required:

(A) Where vehicles are loaded exclusively with products not having a static accumulating tendency, such as asphalt, most crude oils, residual oils, and water soluble liquids;

(B) Where no Class I liquids are handled at the loading facility and the tank vehicles loaded are used exclusively for Class II and Class III liquids; and

(C) Where vehicles are loaded or unloaded through closed bottom or top connections.

(v) Filling through open domes into the tanks of tank vehicles or tank cars, that contain vapor-air mixtures within the flammable range or where the liquid being filled can form such a mixture, shall be by means of a downspout which extends near the bottom of the tank. This precaution is not required when loading liquids which are nonaccumulators of static charges.

(e) Stray currents. Tank car loading facilities where Class I liquids are loaded through open domes shall be protected against stray currents by bonding the pipe to at least one rail and to the rack structure if of metal. Multiple lines entering the rack area shall be electrically bonded together. In addition, in areas where excessive stray currents are known to exist, all pipe entering the rack area shall be provided with insulating sections to electrically isolate the rack piping from the pipelines. No bonding between the tank car and the rack or piping is required during either loading or unloading of Class II or III liquids.

(f) Container filling facilities. Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of these standards shall be deemed to have been complied with.

(4) Wharves.

(a) Definition, application. The term wharf shall mean any wharf, pier, bulkhead, or other structure over or contiguous to navigable water used in conjunction with a bulk plant, the primary function of which is the transfer of flammable or combustible liquid cargo in bulk between the bulk plant and any tank vessel, ship, barge, lighter boat, or other mobile floating craft; and this subparagraph shall apply to all such installations except marine service stations as covered in WAC 296-24-33015.

(b) Package cargo. Package cargo of flammable and combustible liquids, including full and empty drums, bulk fuel, and stores may be handled over a wharf and at such times and places as may be agreed upon by the wharf superintendent and the senior deck officer on duty.

(c) Location. Wharves at which flammable or combustible liquid cargoes are to be transferred in bulk quantities to or from tank vessels shall be at least 100 feet from any bridge over a navigable waterway, or from an entrance to or superstructure of any vehicular or railroad tunnel under a waterway. The termination of the wharf loading or unloading fixed piping shall be at least 200 feet from a bridge or from an entrance to or superstructure of a tunnel.

(d) Design and construction. Substructure and deck shall be substantially designed for the use intended. Deck may employ any material which will afford the desired combination of flexibility, resistance to shock, durability, strength, and fire resistance. Heavy timber construction is acceptable.

(e) Tanks. Tanks used exclusively for ballast water or Class II or Class III liquids may be installed on suitably designed wharves.

(f) Pumps. Loading pumps capable of building up pressures in excess of the safe working pressure of cargo hose or loading arms shall be provided with bypasses, relief valves, or other arrangement to protect the loading facilities against excessive pressure. Relief devices shall be tested at not more than yearly intervals to determine that they function satisfactorily at the pressure at which they are set.

(g) Hoses and couplings. All pressure hoses and couplings shall be inspected at intervals appropriate to the service. The hose and couplings shall be tested with the hose extended and using the "inservice maximum operating pressures." Any hose showing material deteriorations, signs of leakage, or weakness in its carcass or at the couplings shall be withdrawn from service and repaired or discarded.

(h) Piping and fittings. Piping, valves, and fittings shall be in accordance with WAC 296-24-33007 with the following exceptions and additions:

(i) Flexibility of piping shall be assured by appropriate layout and arrangement of piping supports so that motion of the wharf structure resulting from wave action, currents, tides, or the mooring of vessels will not subject the pipe to repeated strain beyond the elastic limit.

(ii) Pipe joints depending upon the friction characteristics of combustible materials or grooving of pipe ends for mechanical continuity of piping shall not be used.

(iii) Swivel joints may be used in piping to which hoses are connected, and for articulated swivel-joint transfer systems, provided that the design is such that the mechanical strength of joint will not be impaired if the packing material should fail, as by exposure to fire.

(iv) Piping systems shall contain a sufficient number of valves to operate the system properly and to control the flow of liquid in normal operation and in the event of physical damage.

(v) In addition to the requirements of (4)(h)(iv), each line conveying flammable liquids leading to a wharf shall be provided with a readily accessible block valve located on shore near the approach to the wharf and outside of any diked area. Where more than one line is involved, the valves shall be grouped in one location.

(vi) Means of easy access shall be provided for cargo line valves located below the wharf deck.

(vii) Pipelines on flammable or combustible liquids wharves shall be adequately bonded and grounded. If excessive stray currents are encountered, insulating points shall be installed. Bonding and grounding connections on all pipelines shall be located on wharfside of hose-riser insulating flanges, if used, and shall be accessible for inspection.

(viii) Hose or articulated swivel-joint pipe connections used for cargo transfer shall be capable of accommodating the combined effects of change in draft and maximum tidal range, and mooring lines shall be kept adjusted to prevent the surge of the vessel from placing stress on the cargo transfer system.

(ix) Hose shall be supported so as to avoid kinking and damage from chafing.

(i) Fire protection. Suitable portable fire extinguishers with a rating of not less than 12-BC shall be located with 75 feet of those portions of the facility where fires are likely to occur, such as hose connections, pumps, and separator tanks.

(i) Where piped water is available, ready-connected fire hose in size appropriate for the water supply shall be provided so that manifolds where connections are made and broken can be reached by at least one hose stream.

(ii) Material shall not be placed on wharves in such a manner as to obstruct access to fire fighting equipment, or important pipeline control valves.

(iii) Where the wharf is accessible to vehicle traffic, an unobstructed roadway to the shore end of the wharf shall be maintained for access of fire fighting apparatus.

(j) Operations control. Loading or discharging shall not commence until the wharf superintendent and officer in charge of the tank vessel agree that the tank vessel is properly moored and all connections are properly made. Mechanical work shall not be performed on the wharf during cargo transfer, except under special authorization by a delegated person or the delegated persons authorized representative based on a review of the area involved, methods to be employed, and precaution necessary.

(5) Electrical equipment.

(a) Application. This subsection shall apply to areas where Class I liquids are stored or handled. For areas where Class II or Class III liquids only are stored or handled, the electrical equipment may be installed according to chapter 296-24 WAC Part L for ordinary locations.

(b) Conformance. All electrical equipment and wiring shall be of a type specified by and shall be installed according to chapter 296-24 WAC Part L.

(c) Classification. So far as it applies Table H-18 shall be used to delineate and classify hazardous areas for the purpose of installation of electrical equipment under normal circumstances. In Table H-18 a classified area shall not extend beyond an unpierced wall, roof, or other solid partition. The area classifications listed shall be based on the premise that the installation meets the applicable requirements of this section in all respects.

TABLE H-18

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—BULK PLANTS

Location	Class I Group D division	Extent of classified area
Tank vehicle and tank car:[1]		
Loading through open dome	1	Within 3 feet of edge of dome, extending in all directions.
	2	Area between 3 feet and 5 feet from edge of dome, extending in all directions.
Loading through bottom connections with atmospheric venting	1	Within 3 feet of point of venting to atmosphere, extending in all directions.

	2	Area between 3 feet and 5 feet from point of venting to atmosphere, extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of loading connection.
Loading through closed dome with atmospheric venting	1	Within 3 feet of open end of vent, extending in all directions.
	2	Area between 3 feet and 5 feet from open end of vent, extending in all directions. Also within 3 feet of edge of dome, extending in all directions.
Loading through closed dome with vapor recovery	2	Within 3 feet of point of connection of both fill and vapor lines, extending in all directions.
Bottom loading with vapor recovery or any bottom unloading	2	Within 3 feet of point of connections extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of connection.
Drum and container filling:		
Outdoors, or indoors with adequate ventilation	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent or fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Outdoors, or indoors with adequate ventilation	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent or fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Tank—Aboveground:		
Shell, ends, or roof and dike area	2	Within 10 feet from shell, ends, or roof of tank, area inside dikes to level of top of dike.
Vent	1	Within 5 feet of open end of vent, extending in all directions.
	2	Area between 5 feet and 10 feet from open end of vent, extending in all directions.
Floating roof	1	Area above the roof and within the shell.
Pits:		
Without mechanical ventilation	1	Entire area within pit if any part is within a Division 1 or 2 classified area.
With mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings or piping, and not within a Division 1 or 2 classified area	2	Entire pit.
Pumps, bleeders, withdrawal fittings, meters and similar devices:		
Indoors	2	Within 5 feet of any edge of such devices, extending in all directions. Also up to 3 feet above floor or grade level within 25 feet horizontally from any edge of such devices.
Outdoors	2	Within 3 feet of any edge of such devices, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of such devices.
Storage and repair garage for tank vehicles	1	All pits or spaces below floor level.
	2	Area up to 18 inches above floor or grade level for entire storage or repair garage.
Drainage ditches, separators, impounding basins	2	Area up to 18 inches above ditch, separator or basin. Also up to 18 inches above grade within 15 feet horizontally from any edge.
Garages for other than tank vehicles	Ordinary	If there is any opening to these rooms within the extent of an outdoor classified area, the entire room shall be classified the same as the area classification at the point of the opening.
Outdoor drum storage	Ordinary	

Indoor warehousing where there is no flammable liquid transfer	Ordinary	If there is any opening to these rooms within the extent of an indoor classified area, the room shall be classified the same as if the wall, curb or partition did not exist.
Office and rest rooms	Ordinary	

[1]When classifying the extent of the area, consideration shall be given to the fact that tank cars or tank vehicles may be spotted at varying points. Therefore, the extremities of the loading or unloading positions shall be used.

(6) Sources of ignition. Class I liquids shall not be handled, drawn, or dispensed where flammable vapors may reach a source of ignition. Smoking shall be prohibited except in designated localities. "No smoking" signs shall be conspicuously posted where hazard from flammable liquid vapors is normally present.

(7) Drainage and waste disposal. Provision shall be made to prevent flammable or combustible liquids which may be spilled at loading or unloading points from entering public sewers and drainage systems, or natural waterways. Connection to such sewers, drains, or waterways by which flammable or combustible liquids might enter shall be provided with separator boxes or other approved means whereby such entry is precluded. Crankcase drainings and flammable or combustible liquids shall not be dumped into sewers, but shall be stored in tanks or tight drums outside of any building until removed from the premises.

(8) Fire control. Suitable fire-control devices, such as small hose or portable fire extinguishers, shall be available to locations where fires are likely to occur. Additional fire-control equipment may be required where a tank of more than 50,000 gallons individual capacity contains Class I liquids and where an unusual exposure hazard exists from surrounding property. Such additional fire-control equipment shall be sufficient to extinguish a fire in the largest tank. The design and amount of such equipment shall be in accordance with approved engineering standards.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-33013, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-33013, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33013, filed 4/19/85; Order 76-6, § 296-24-33013, filed 3/1/76; Order 73-5, § 296-24-33013, filed 5/9/73 and Order 73-4, § 296-24-33013, filed 5/7/73.]

WAC 296-24-33015 Service stations. (1) Storage and handling.

(a) General provisions.

(i) Liquids shall be stored in approved closed containers not exceeding 60 gallons capacity, in tanks located underground, in tanks in special enclosures as described in (b) of this subsection, or in aboveground tanks as provided for in (3)(b)(i), (ii), (iii) and (iv) of this section.

(ii) Aboveground tanks, located in an adjoining bulk plant, may be connected by piping to service station underground tanks if, in addition to valves at aboveground tanks, a valve is also installed within control of service station personnel.

(iii) Apparatus dispensing Class I liquids into the fuel tanks of motor vehicles of the public shall not be located at a bulk plant unless separated by a fence or similar barrier from the area in which bulk operations are conducted.

(iv) The provisions of subsection (1) of this section shall not prohibit the dispensing of flammable liquids in the open from a tank vehicle to a motor vehicle. Such dispensing shall be permitted provided:

(A) The tank vehicle complies with the requirements covered in the Standard on Tank Vehicles for Flammable Liquids, NFPA 385-1966.

(B) The dispensing is done on premises not open to the public.

(C) The dispensing hose does not exceed 50 feet in length.

(D) The dispensing nozzle is a listed automatic-closing type without a latch-open device.

(vi) Class I liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

(vii) Accurate inventory records shall be maintained and reconciled on all Class I liquid storage tanks for possible indication of leakage from tanks or piping.

(b) Special enclosures.

(i) When installation of tanks in accordance with WAC 296-24-33005(3) is impractical because of property or building limitations, tanks for flammable or combustible liquids may be installed in buildings if properly enclosed.

(ii) The enclosure shall be substantially liquid and vaportight without backfill. Sides, top, and bottom of the enclosure shall be of reinforced concrete at least 6 inches thick, with openings for inspection through the top only. Tank connections shall be so piped or closed that neither vapors nor liquid can escape into the enclosed space. Means shall be provided whereby portable equipment may be employed to discharge to the outside any liquid or vapors which might accumulate should leakage occur.

(iii) At automotive service stations provided in connection with tenant or customer parking facilities at or below grade level in large buildings of commercial, mercantile, or residential occupancy, tanks containing Class I liquids, installed of necessity in accordance with subsection (1)(b)(ii) of this section, shall not exceed 6,000 gallons individual or 18,000 gallons aggregate capacity.

(c) Inside buildings.

(i) Except where stored in tanks as provided in subsection (1)(b) of this section, no Class I liquids shall be stored within any service station building except in closed containers of aggregate capacity not exceeding 60 gallons. One container not exceeding 60 gallons capacity equipped with an approved pump is permitted.

(ii) Class I liquids may be transferred from one container to another in lubrication or service rooms of a service station building provided the electrical installation complies with Table H-19 and provided that any heating equipment complies with subsection (5) of this section.

(iii) Class II and Class III liquids may be stored and dispensed inside service station buildings from tanks of not more than 120 gallons capacity each.

(d) Labeling. No sale or purchase of any Class I, II, or III liquids shall be made in containers unless such containers are clearly marked with the name of the product contained therein.

(e) Dispensing into portable containers. No delivery of any Class I liquids shall be made into portable containers unless the container is constructed of metal, has a tight closure with screwed or spring cover, and is fitted with a spout or so designed that the contents can be poured without spilling.

(2) Dispensing systems.

(a) Location. Dispensing devices at automotive service stations shall be so located that all parts of the vehicle being served will be on the premises of the service station.

(b) Inside location. Approved dispensing units may be located inside of buildings. The dispensing area shall be separated from other areas in an approved manner. The dispensing unit and its piping shall be mounted either on a concrete island or protected against collision damage by suitable means and shall be located in a position where it cannot be struck by a vehicle descending a ramp or other slope out of control. The dispensing area shall be provided with an approved mechanical or gravity ventilation system. When dispensing units are located below grade, only approved mechanical ventilation shall be used and the entire dispensing area shall be protected by an approved automatic sprinkler system. Ventilating systems shall be electrically interlocked with gasoline dispensing units so that the dispensing units cannot be operated unless the ventilating fan motors are energized.

(c) Emergency power cutoff. A clearly identified and easily accessible switch(es) or a circuit breaker(s) shall be provided at a location remote from dispensing devices, including remote pumping systems, to shut off the power to all dispensing devices in the event of an emergency.

(d) Dispensing units.

(i) Class I liquids shall be transferred from tanks by means of fixed pumps so designed and equipped as to allow control of the flow and to prevent leakage or accidental discharge.

(ii) Only listed devices may be used for dispensing Class I liquids. No such device may be used if it shows evidence of having been dismantled.

(iii) Every dispensing device for Class I liquids installed after December 31, 1978, shall contain evidence of listing so placed that any attempt to dismantle the device will result in damage to such evidence, visible without disassembly or dismounting of the nozzle.

(iv) Class I liquids shall not be dispensed by pressure from drums, barrels, and similar containers. Approved pumps taking suction through the top of the container or approved self-closing faucets shall be used.

(v) The dispensing units, except those attached to containers, shall be mounted either on a concrete island or protected against collision damage by suitable means.

(e) Remote pumping systems.

(i) This subdivision shall apply to systems for dispensing Class I liquids where such liquids are transferred from storage to individual or multiple dispensing units by pumps located elsewhere than at the dispensing units.

(ii) Pumps shall be designed or equipped so that no part of the system will be subjected to pressures above its allowable working pressure. Pumps installed above grade, outside of buildings, shall be located not less than 10 feet from lines of adjoining property which is/or may be built upon, and not less than 5 feet from any building opening. When an outside pump location is impractical, pumps may be installed inside of buildings, as provided for dispensers in (b) of this subsection, or in pits as provided in (e)(iii) of this subsection. Pumps shall be substantially anchored and protected against physical damage by vehicles.

(iii) Pits for subsurface pumps or piping manifolds of submersible pumps shall withstand the external forces to which they may be subjected without damage to the pump, tank, or piping. The pit shall be no larger than necessary for inspection and maintenance and shall be provided with a fitted cover.

(iv) A control shall be provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket on the dispensing unit and the switch on this dispensing unit is manually actuated. This control shall also stop the pump when all nozzles have been returned to their brackets.

(v) An approved impact valve, incorporating a fusible link, designed to close automatically in the event of severe impact or fire exposure shall be properly installed in the dispensing supply line at the base of each individual dispensing device.

(vi) Testing. After the completion of the installation, including any paving, that section of the pressure piping system between the pump discharge and the connection for the dispensing facility shall be tested for at least 30 minutes at the maximum operating pressure of the system. Such tests shall be repeated at 5-year intervals thereafter.

(f) Delivery nozzles.

(i) A listed manual or automatic-closing type hose nozzle valve shall be provided on dispensers used for the dispensing of Class I liquids.

(ii) Manual-closing type valves shall be held open manually during dispensing. Automatic-closing type valves may be used in conjunction with an approved latch-open device.

(g) Special type dispensers.

(i) Emergency controls shall be installed at an acceptable location, but controls shall not be more than 100 feet from dispensers.

(ii) Instructions for the operation of dispensers shall be conspicuously posted.

(3) Marine service stations.

(a) Dispensing.

(i) The dispensing area shall be located away from other structures so as to provide room for safe ingress and egress of craft to be fueled. Dispensing units shall in all cases be at least 20 feet from any activity involving fixed sources of ignition.

(ii) Dispensing shall be by approved dispensing units with or without integral pumps and may be located on open piers, wharves, or floating docks or on shore or on piers of the solid fill type.

(iii) Dispensing nozzles shall be automatic-closing without a hold-open latch.

(b) Tanks and pumps.

(i) Tanks, and pumps not integral with the dispensing unit, shall be on shore or on a pier of the solid fill type, except as provided below.

(ii) Where shore location would require excessively long supply lines to dispensers, tanks may be installed on a pier provided that applicable portions of WAC 296-24-33005 relative to spacing, diking, and piping are complied with and the quantity so stored does not exceed 1,100 gallons aggregate capacity.

(iii) Shore tanks supplying marine service stations may be located above ground, where rock ledges or high water table make underground tanks impractical.

(iv) Where tanks are at an elevation which would produce gravity head on the dispensing unit, the tank outlet shall be equipped with a pressure control valve positioned adjacent to and outside the tank block valve specified in WAC 296-24-33005 (2)(h)(ii), so adjusted that liquid cannot flow by gravity from the tank in case of piping or hose failure.

(c) Piping.

(i) Piping between shore tanks and dispensing units shall be as described in WAC 296-24-33007, except that, where dispensing is from a floating structure, suitable lengths of oil-resistant flexible hose may be employed between the shore piping and the piping on the floating structure as made necessary by change in water level or shoreline.

(ii) A readily accessible valve to shut off the supply from shore shall be provided in each pipeline at or near the approach to the pier and at the shore end of each pipeline adjacent to the point where flexible hose is attached.

(iii) Piping shall be located so as to be protected from physical damage.

(iv) Piping handling Class I liquids shall be grounded to control stray currents.

(4) Electrical equipment.

(a) Application. This subsection shall apply to areas where Class I liquids are stored or handled. For areas where Class II or Class III liquids are stored or handled the electrical equipment may be installed according to the provisions of chapter 296-24 WAC Part L for ordinary locations.

(b) All electrical equipment and wiring shall be of a type specified by and shall be installed according to chapter 296-24 WAC Part L.

(c) So far as it applies, Table H-19 shall be used to delineate and classify hazardous areas for the purpose of installation of electrical equipment under normal circumstances. A classified area shall not extend beyond an unpierced wall, roof, or other solid partition.

(d) The area classifications listed shall be based on the assumption that the installation meets the applicable requirements of this section in all respects.

TABLE H-19

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—SERVICE STATIONS

Location	Class I, Group D division	Extent of classified area
Underground tank:		
Fill opening	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
	2	Up to 18 inches above grade level within a horizontal radius of 10 feet from a loose fill connection and within a horizontal radius of 5 feet from a tight fill connection.
Vent—Discharging upward	1	Within 3 feet of open end of vent, extending in all directions.
	2	Area between 3 feet and 5 feet of open end of vent, extending in all directions.
Dispenser:		
Pits	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
Dispenser enclosure	1	The area 4 feet vertically above base within the enclosure and 18 inches horizontally in all directions.
Outdoor	2	Up to 18 inches above grade level within 20 feet horizontally of any edge of enclosure.
Indoor:		
With mechanical ventilation	2	Up to 18 inches above grade or floor level within 20 feet horizontally of any edge of enclosure.
With gravity ventilation	2	Up to 18 inches above grade or floor level within 25 feet horizontally of any edge of enclosure.
Remote pump—Outdoor	1	Any pit, box or space below grade level if any part is within a horizontal distance of 10 feet from any edge of pump.
	2	Within 3 feet of any edge of pump, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of pump.
Remote pump—Indoor	1	Entire area within any pit.
	2	Within 5 feet of any edge of pump, extending in all directions. Also up to

		3 feet above floor or grade level within 25 feet horizontally from any edge of pump.
Lubrication or service room	1	Entire area within any pit.
	2	Area up to 18 inches above floor or grade level within entire lubrication room.
Dispenser for Class I liquids	2	Within 3 feet of any fill or dispensing point, extending in all directions.
Special enclosure inside building per WAC 296-24-33013 (1)(b)	1	Entire enclosure.
Sales, storage and rest rooms	Ordinary	If there is any opening to these rooms within the extent of a Division 1 area, the entire room shall be classified as Division 1.

(5) Heating equipment.

(a) Conformance. Heating equipment shall be installed as provided in (b) through (e) of this subsection.

(b) Application. Heating equipment may be installed in the conventional manner in an area except as provided in (c), (d) or (e) of this subsection.

(c) Special room. Heating equipment may be installed in a special room separated from an area classified by Table H-19 by walls having a fire resistance rating of at least 1 hour and without any openings in the walls within 8 feet of the floor into an area classified in Table H-19.This room shall not be used for combustible storage and all air for combustion purposes shall come from outside the building.

(d) Work areas. Heating equipment using gas or oil fuel may be installed in the lubrication, sales, or service room where there is no dispensing or transferring of Class I liquids provided the bottom of the combustion chamber is at least 18 inches above the floor and the heating equipment is protected from physical damage by vehicles. Heating equipment using gas or oil fuel listed for use in garages may be installed in the lubrication or service room where Class I liquids are dispensed provided the equipment is installed at least 8 feet above the floor.

(e) Electric heat. Electrical heating equipment shall conform to subsection (4) of this section.

(6) Drainage and waste disposal. Provision shall be made in the area where Class I liquids are dispensed to prevent spilled liquids from flowing into the interior of service station buildings. Such provision may be by grading driveways, raising door sills, or other equally effective means. Crankcase drainings and flammable or combustible liquids shall not be dumped into sewers but shall be stored in tanks or drums outside of any building until removed from the premises.

(7) Sources of ignition. In addition to the previous restrictions of this section, the following shall apply: There shall be no smoking or open flames in the areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of flammable or combustible liquids. Conspicuous and legible signs prohibiting smoking shall be posted within sight of the customer being served. The motors of all equipment being fueled shall be shut off during the fueling operation.

(8) Fire control. Each service station shall be provided with at least one fire extinguisher having a minimum approved classification of 6 B, C located so that an extinguisher will be within 75 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service room.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-33015, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33015, filed 4/19/85; 83-24-013 (Order 83-34), § 296-24-33015, filed 11/30/83; Order 76-6, § 296-24-33015, filed 3/1/76; Order 73-5, § 296-24-33015, filed 5/9/73 and Order 73-4, § 296-24-33015, filed 5/7/73.]

WAC 296-24-33017 Processing plants. (1) Scope. This section shall apply to those plants or buildings which contain chemical operations such as oxidation, reduction, halogenation, hydrogenation, alkylation, polymerization, and other chemical processes but shall not apply to chemical plants, refineries or distilleries.

(2) Location.

(a) Classification. The location of each processing vessel shall be based upon its flammable or combustible liquid capacity. Processing vessels shall be located, with respect to distances to lines of adjoining property which may be built upon, in accordance with Table H-20, except when the processing plant is designed in accordance with (2)(b) of this section.

TABLE H-20

Processing vessels with emergency relief venting to permit pressure	Stable liquids	Unstable liquids
Not in excess of 2.5 p.s.i.g.	Table H-9	2 1/2 times Table H-9.
Over 2.5. p.s.i.g.	1 1/2 times Table H-9.	4 times Table H-9.

(b) Exception. The distances required in (2)(a) of this section may be waived when the vessels are housed within a building and the exterior wall facing the line of adjoining property which may be built upon is a blank wall having a fire-resistance rating of not less than 4 hours. When Class IA or unstable liquids are handled, the blank wall shall have explosion resistance in accordance with good engineering practice, see (3)(d) of this section.

(3) Processing building.

(a) Construction.

(i) Processing buildings shall be of fire-resistance or noncombustible construction, except heavy timber construction with load-bearing walls may be permitted for plants utilizing only stable Class II or Class III liquids. Except as provided in (2)(b) of this section or in the case of explosion resistant walls used in conjunction with explosion relieving

facilities, see (3)(d) of this section, loadbearing walls are prohibited. Buildings shall be without basements or covered pits.

(ii) Areas shall have adequate exit facilities arranged to prevent occupants from being trapped in the event of fire. Exits shall not be exposed by the drainage facilities described in (3)(b) of this section.

(b) Drainage.

(i) Emergency drainage systems shall be provided to direct flammable or combustible liquid leakage and fire protection water to a safe location. This may require curbs, scuppers, or special drainage systems to control the spread of fire, see WAC 296-24-33005 (2)(g)(ii).

(ii) Emergency drainage systems, if connected to public sewers or discharged into public waterways, shall be equipped with traps or separators.

(iii) The processing plant shall be designed and operated to prevent the normal discharge of flammable or combustible liquids to public waterways, public sewers, or adjoining property.

(c) Ventilation.

(i) Enclosed processing buildings shall be ventilated at a rate of not less than 1 cubic foot per minute per square foot of solid floor area. This shall be accomplished by natural or mechanical ventilation with discharge or exhaust to a safe location outside of the building. Provision shall be made for introduction of makeup air in such a manner as not to short circuit the ventilation. Ventilation shall be arranged to include all floor areas or pits where flammable vapors may collect.

(ii) Equipment used in a building and the ventilation of the building shall be designed so as to limit flammable vapor-air mixtures under normal operating conditions to the interior of equipment, and to not more than 5 feet from equipment which exposes Class I liquids to the air. Examples of such equipment are dispensing stations, open centrifuges, plate and frame filters, open vacuum filters, and surfaces of open equipment.

(d) Explosion relief. Areas where Class IA or unstable liquids are processed shall have explosion venting through one or more of the following methods:

(i) Open air construction.

(ii) Lightweight walls and roof.

(iii) Lightweight wall panels and roof hatches.

(iv) Windows of explosion venting type.

(4) Liquid handling.

(a) Storage.

(i) The storage of flammable or combustible liquids in tanks shall be in accordance with the applicable provisions of WAC 296-24-33005.

(ii) If the storage of flammable or combustible liquids in outside aboveground or underground tanks is not practical because of temperature or production considerations, tanks may be permitted inside of buildings or structures in accordance with the applicable provisions of WAC 296-24-33005.

(iii) Storage tanks inside of buildings shall be permitted only in areas at or above grade which have adequate drainage and are separated from the processing area by construction having a fire resistance rating of at least 2 hours.

(iv) The storage of flammable or combustible liquids in containers shall be in accordance with the applicable provisions of WAC 296-24-33009.

(b) Piping, valves, and fittings.

(i) Piping, valves, and fittings shall be in accordance with WAC 296-24-33007.

(ii) Approved flexible connectors may be used where vibration exists or where frequent movement is necessary. Approved hose may be used at transfer stations.

(iii) Piping containing flammable or combustible liquids shall be identified.

(c) Transfer.

(i) The transfer of large quantities of flammable or combustible liquids shall be through piping by means of pumps or water displacement. Except as required in process equipment, gravity flow shall not be used. The use of compressed air as a transferring medium is prohibited.

(ii) Positive displacement pumps shall be provided with pressure relief discharging back to the tank or to pump suction.

(d) Equipment.

(i) Equipment shall be designed and arranged to prevent the unintentional escape of liquids and vapors and to minimize the quantity escaping in the event of accidental release.

(ii) Where the vapor space of equipment is usually within the flammable range, the probability of explosion damage to the equipment can be limited by inerting, by providing an explosion suppression system, or by designing the equipment to contain the peak explosion pressure which may be modified by explosion relief. Where the special hazards of operation, sources of ignition, or exposures indicate a need, consideration shall be given to providing protection by one or more of the above means.

(5) Tank vehicle and tank car loading and unloading. Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings, or nearest line of adjoining property which may be built upon by a distance of 25 feet for Class I liquids and 15 feet for Class II and Class III liquids measured from the nearest position of any fill stem. Buildings for pumps or shelters for personnel may be a part of the facility. Operations of the facility shall comply with the appropriate portions of WAC 296-24-33013(3).

(6) Fire control.

(a) Portable extinguishers. Approved portable fire extinguishers of appropriate size, type and number shall be provided.

(b) Other controls. Where the special hazards of operation or exposure indicate a need, the following fire control provision shall be provided.

(i) A reliable water supply shall be available in pressure and quantity adequate to meet the probable fire demands.

(ii) Hydrants shall be provided in accordance with accepted good practice.

(iii) Hose connected to a source of water shall be installed so that all vessels, pumps, and other equipment containing flammable or combustible liquids can be reached with at least one hose stream. Nozzles that are capable of discharging a water spray shall be provided.

(iv) Processing plants shall be protected by an approved automatic sprinkler system or equivalent extinguishing

system. If special extinguishing systems including but not limited to those employing foam, carbon dioxide, or dry chemical are provided, approved equipment shall be used and installed in an approved manner.

(c) Alarm systems. An approved means for prompt notification of fire to those within the plant and any public fire department available shall be provided. It may be advisable to connect the plant system with the public system where public fire alarm system is available.

(d) Maintenance. All plant fire protection facilities shall be adequately maintained and periodically inspected and tested to make sure they are always in satisfactory operating condition and that they will serve their purpose in time of emergency.

(7) Sources of ignition.

(a) General.

(i) Precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical, any mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

(ii) Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of this section shall be deemed to have been complied with.

(b) Maintenance and repair.

(i) When necessary to do maintenance work in a flammable or combustible liquid processing area, the work shall be authorized by a responsible representative of the employer.

(ii) Hot work such as welding or cutting operations, use of spark-producing power tools, and chipping operations shall be permitted only under supervision of an individual in responsible charge who shall make an inspection of the area to be sure that it is safe for the work to be done and that safe procedures will be followed for the work specified.

(c) Electrical.

(i) All electrical wiring and equipment within storage or processing areas shall be installed according to chapter 296-24 WAC Part L.

(ii) Locations where flammable vapor-air mixtures may exist under normal operations shall be classified Class I, Division 1 according to the requirements of chapter 296-24 WAC Part L. For those pieces of equipment installed in accordance with (3)(c)(ii) of this section, the Division 1 area shall extend 5 feet in all directions from all points of vapor liberation. All areas within pits shall be classified Division 1 if any part of the pit is within a Division 1 or 2 classified area, unless the pit is provided with mechanical ventilation.

(iii) Locations where flammable vapor-air mixtures may exist under abnormal conditions and for a distance beyond Division 1 locations shall be classified Division 2 according to the requirements of chapter 296-24 WAC Part L. These locations include an area within 20 feet horizontally, 3 feet vertically beyond a Division 1 area, and up to 3 feet above floor or grade level within 25 feet, if indoors, or 10 feet if outdoors, from any pump, bleeder, withdrawal fittings, meter, or similar device handling Class I liquids. Pits provided with adequate mechanical ventilation within a Division 1 or 2 area shall be classified Division 2. If Class II or Class III liquids only are handled, then ordinary electrical equipment is satisfactory though care shall be used in locating electrical apparatus to prevent hot metal from falling into open equipment.

(iv) Where the provisions of (7)(c)(i), (ii), and (iii) of this section require the installation of explosion-proof equipment, ordinary electrical equipment including switchgear may be used if installed in a room or enclosure which is maintained under positive pressure with respect to the hazardous area. Ventilation makeup air shall be uncontaminated by flammable vapors.

(8) Housekeeping.

(a) General. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Spills shall be cleaned up promptly.

(b) Access. Adequate aisles shall be maintained for unobstructed movement of personnel and so that fire protection equipment can be brought to bear on any part of the processing equipment.

(c) Waste and residues. Combustible waste material and residues in a building or operating area shall be kept to a minimum, stored in closed metal waste cans, and disposed of daily.

(d) Clear zone. Ground area around buildings and operating areas shall be kept free of tall grass, weeds, trash, or other combustible materials.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-33017, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33017, filed 4/19/85; Order 76-6, § 296-24-33017, filed 3/1/76; Order 73-5, § 296-24-33017, filed 5/9/73 and Order 73-4, § 296-24-33017, filed 5/7/73.]

WAC 296-24-33019 Refineries, chemical plants, and distilleries. (1) Storage tanks. Flammable or combustible liquids shall be stored in tanks, in containers, or in portable tanks. Tanks shall be installed in accordance with WAC 296-24-33005. Tanks for the storage of flammable or combustible liquids in tank farms and in locations other than process areas shall be located in accordance with WAC 296-24-33005 (2)(a) and (b).

(2) Wharves. Wharves handling flammable or combustible liquids shall be in accordance with WAC 296-24-33013(4).

(3) Fired and unfired pressure vessels.

(a) Fired vessels. Fired pressure vessels shall be constructed in accordance with the Code for Fired Pressure Vessels, section I of the ASME Boiler and Pressure Vessel Code—1968.

(b) Unfired vessels shall be constructed in accordance with the Code for Unfired Pressure Vessels, section VIII of the ASME Boiler and Pressure Vessel Code—1968.

(4) Location of process units. Process units shall be located so that they are accessible from at least one side for the purpose of fire control. Where topographical conditions are such that flammable or combustible liquids may flow from a processing area so as to constitute a fire hazard to property of others, provision shall be made to divert or impound the flow by curbs, drains, or other suitable means.

(5) Fire control.

(a) Portable equipment. Portable fire extinguishment and control equipment shall be provided in such quantities and types as are needed for the special hazards of operation and storage.

(b) Water supply. Water shall be available in volume and at adequate pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems as the need is indicated by the special hazards of operation and storage.

(c) Special equipment. Special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical shall be provided as the need is indicated by the special hazards of operation and storage.

[Order 73-5, § 296-24-33019, filed 5/9/73 and Order 73-4, § 296-24-33019, filed 5/7/73.]

WAC 296-24-370 Spray finishing using flammable and combustible materials.

[Order 73-5, § 296-24-370, filed 5/9/73 and Order 73-4, § 296-24-370, filed 5/7/73.]

WAC 296-24-37001 Definitions. (1) Aerated solid powders. Aerated powders shall mean any powdered material used as a coating material which shall be fluidized within a container by passing air uniformly from below. It is common practice to fluidize such materials to form a fluidized powder bed and then dip the part to be coated into the bed in a manner similar to that used in liquid dipping. Such beds are also used as sources for powder spray operations.

(2) Spraying area. Any area in which dangerous quantities of flammable vapors or mists, or combustible residues, dusts, or deposits are present due to the operation of spraying processes.

(3) Spray booth. A power-ventilated structure provided to enclose or accommodate a spraying operation to confine and limit the escape of spray, vapor, and residue, and to safely conduct or direct them to an exhaust system.

(4) Waterwash spray booth. A spray booth equipped with a water washing system designed to minimize dusts or residues entering exhaust ducts and to permit the recovery of overspray finishing material.

(5) Dry spray booth. A spray booth not equipped with a water washing system as described in subsection (4) of this section. A dry spray booth may be equipped with (a) distribution or baffle plates to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct; or (b) overspray dry filters to minimize dusts; or (c) overspray dry filters to minimize dusts or residues entering exhaust ducts; or (d) overspray dry filter rolls designed to minimize dusts or residues entering exhaust ducts; or (e) where dry powders are being sprayed, with powder collection systems so arranged in the exhaust to capture oversprayed material.

(6) Fluidized bed. A container holding powder coating material which is aerated from below so as to form an air-supported expanded cloud of such material through which the preheated object to be coated is immersed and transported.

(7) Electrostatic fluidized bed. A container holding powder coating material which is aerated from below so as to form an air-supported expanded cloud of such material which is electrically charged with a charge opposite to the charge of the object to be coated; such object is transported through the container immediately above the charged and aerated materials in order to be coated.

(8) Approved. Shall mean approved and listed by a nationally recognized testing laboratory. Refer to federal regulation 29 CRF 1910.7 for definition of nationally recognized testing laboratory.

(9) Listed. See "approved" in subsection (8) of this section.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-37001, filed 11/14/88; Order 76-6, § 296-24-37001, filed 3/1/76; Order 73-5, § 296-24-37001, filed 5/9/73 and Order 73-4, § 296-24-37001, filed 5/7/73.]

WAC 296-24-37003 Spray booths. (1) Construction. Spray booths shall be substantially constructed of steel, securely and rigidly supported, or of concrete or masonry except that aluminum or other substantial noncombustible material may be used for intermittent or low volume spraying. Spray booths shall be designed to sweep air currents toward the exhaust outlet.

(2) Interiors. The interior surfaces of spray booths shall be smooth and continuous without edges and otherwise designed to prevent pocketing of residues and facilitate cleaning and washing without injury.

(3) Floors. The floor surface of a spray booth and operator's working area, if combustible, shall be covered with noncombustible material of such character as to facilitate the safe cleaning and removal of residues.

(4) Distribution or baffle plates. Distribution or baffle plates, if installed to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct, shall be of noncombustible material and readily removable or accessible on both sides for cleaning. Such plates shall not be located in exhaust ducts.

(5) Dry type overspray collectors—(Exhaust air filters). In conventional dry type spray booths, overspray dry filters or filter rolls, if installed, shall conform to the following:

(a) The spraying operations except electrostatic spraying operations shall be so designed, installed and maintained that the average air velocity over the open face of the booth (or booth cross section during spraying operations) shall be not less than 100 linear feet per minute. Electrostatic spraying operations may be conducted with an air velocity over the open face of the booth of not less than 60 linear feet per minute, or more, depending on the volume of the finishing material being applied and its flammability and explosion characteristics. Visible gauges or audible alarm or pressure activated devices shall be installed to indicate or insure that the required air velocity is maintained. Dry spray booths equipped with a filter roll which is automatically advanced when the air velocity is reduced to that specified in this section should be arranged to cause shutdown of spraying operations if the filter roll fails to advance automatically. Maintenance procedures should be established to assure replacing filter pads before excessive restriction to airflow occurs. Filter pads should be inspected after each period of use and clogged filter pads discarded and replaced. Filter

rolls shall be inspected to insure proper replacement of filter media.

(b) All discarded filter pads and filter rolls shall be immediately removed to a safe, well-detached location or placed in a water-filled metal container and disposed of at the close of the day's operation unless maintained completely in water.

(c) The location of filters in a spray booth shall be so as to not reduce the effective booth enclosure of the articles being sprayed.

(d) Space within the spray booth on the downstream and upstream sides of filters shall be protected with an approved automatic sprinkler system meeting one of the following requirements:

(i) An automatic sprinkler system as defined in WAC 296-24-607; or

(ii) A fixed dry chemical extinguishing system as defined in WAC 296-24-622; or

(iii) A fixed carbon dioxide gaseous agent system as defined in WAC 296-24-623.

(e) Filters or filter rolls shall not be used when applying a spray material known to be highly susceptible to spontaneous heating and ignition.

(f) Clean filters or filter rolls shall be noncombustible or of a type having a combustibility not in excess of Class 2 filters as listed by Underwriters' Laboratories, Inc. Filters and filter rolls shall not be alternately used for different types of coating materials, where the combination of materials may be conducive to spontaneous ignition. See also WAC 296-24-37013(6).

(6) Frontal area. Each spray booth having a frontal area larger than 9 square feet shall have a metal deflector or curtain not less than 2 1/2 inches deep installed at the upper outer edge of the booth over the opening.

(7) Conveyors. Where conveyors are arranged to carry work into or out of spray booths, the openings therefor shall be as small as practical.

(8) Separation of operations. Each spray booth shall be separated from other operations by not less than 3 feet, or by a greater distance, or by such partition or wall as to reduce the danger from juxtaposition of hazardous operations. See also WAC 296-24-37005(1).

(9) Cleaning. Spray booths shall be so installed that all portions are readily accessible for cleaning. A clear space of not less than 3 feet on all sides shall be kept free from storage or combustible construction.

(10) Illumination. When spraying areas are illuminated through glass panels or other transparent materials, only fixed lighting units shall be used as a source of illumination. Panels shall effectively isolate the spraying area from the area in which the lighting unit is located, and shall be of a noncombustible material of such a nature or so protected that breakage will be unlikely. Panels shall be so arranged that normal accumulations of residue on the exposed surface of the panel will not be raised to a dangerous temperature by radiation or conduction from the source of illumination.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-37003, filed 5/15/89, effective 6/30/89; Order 76-6, § 296-24-37003, filed 3/1/76; Order 73-5, § 296-24-37003, filed 5/9/73 and Order 73-4, § 296-24-37003, filed 5/7/73.]

WAC 296-24-37005 Electrical and other sources of ignition. (1) Conformance. All electrical equipment, open flames and other sources of ignition shall conform to the requirements of this section, except as follows:

(a) Electrostatic apparatus shall conform to the requirements of WAC 296-24-37015 and 296-24-37017.

(b) Drying, curing, and fusion apparatus shall conform to the requirements of WAC 296-24-37019.

(c) Automobile undercoating spray operations in garages shall conform to the requirements of WAC 296-24-37021.

(d) Powder coating equipment shall conform to the requirements of WAC 296-24-37023.

(2) Minimum separation. There shall be no open flame or spark producing equipment in any spraying area nor within 20 feet thereof, unless separated by a partition.

(3) Hot surfaces. Space-heating appliances, steampipes, or hot surfaces shall not be located in a spraying area where deposits of combustible residues may readily accumulate.

(4) Wiring conformance. Electrical wiring and equipment shall conform to the provisions of this section and chapter 296-24 WAC Part L.

(5) Combustible residues, areas. Unless specifically approved for locations containing both deposits of readily ignitable residue and explosive vapors, there shall be no electrical equipment in any spraying area, whereon deposits of combustible residues may readily accumulate, except wiring in rigid conduit or in boxes or fittings containing no taps, splices, or terminal connections.

(6) Wiring type approved. Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area as herein defined shall be of explosion-proof type approved for Class I, Group D locations and conform to the provisions of chapter 296-24 WAC Part L, for Class I, Division 1, hazardous locations. Electrical wiring, motors, and other equipment outside of but within twenty feet of any spraying area, and not separated therefrom by partitions, shall not produce sparks under normal operating conditions and conform to the provisions of chapter 296-24 WAC Part L for Class I, Division 2, hazardous locations.

(7) Lamps. Electric lamps outside of, but within twenty feet of any spraying area, and not separated therefrom by a partition, shall be totally enclosed to prevent the falling of hot particles and shall be protected from mechanical injury by suitable guards or by location.

(8) Portable lamps. Portable electric lamps shall not be used in any spraying area during spraying operations. Portable electric lamps, if used during cleaning or repairing operations, shall be of the type approved for hazardous Class I locations.

(9) Grounding.

(a) All metal parts of spray booths, exhaust ducts, and piping systems conveying flammable or combustible liquids or aerated solids shall be properly electrically grounded in an effective and permanent manner.

(b) "Airless" high-fluid pressure spray guns and any conductive object being sprayed should be properly electrically grounded.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-37005, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-37005,

filed 4/19/85; Order 76-6, § 296-24-37005, filed 3/1/76; Order 73-5, § 296-24-37005, filed 5/9/73 and Order 73-4, § 296-24-37005, filed 5/7/73.]

WAC 296-24-37007 Ventilation. (1) Conformance. Ventilating and exhaust systems shall be in accordance with the Standard for Blower and Exhaust Systems for Vapor Removal, NFPA No. 91-1961, where applicable and shall also conform to the provisions of this section.

(2) General. All spraying areas shall be provided with mechanical ventilation adequate to remove flammable vapors, mists or powders to a safe location and to confine and control combustible residues so that life is not endangered. Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and drying finishing material residue to be exhausted.

(3) Independent exhaust. Each spray booth shall have an independent exhaust duct system discharging to the exterior of the building, except that multiple cabinet spray booths in which identical spray finishing material is used with a combined frontal area of not more than 18 square feet may have a common exhaust. If more than one fan serves one booth, all fans shall be so interconnected that one fan cannot operate without all fans being operated.

(4) Fan-rotating element. The fan-rotating element shall be nonferrous or nonsparking or the casing shall consist of or be lined with such material. There shall be ample clearance between the fan-rotating element and the fan casing to avoid a fire by friction, necessary allowance being made for ordinary expansion and loading to prevent contact between moving parts and the duct or fan housing. Fan blades shall be mounted on a shaft sufficiently heavy to maintain perfect alignment even when the blades of the fan are heavily loaded, the shaft preferably to have bearings outside the duct and booth. All bearings shall be of the self-lubricating type, or lubricated from the outside duct.

(5) Electric motors. Electric motors driving exhaust fans shall not be placed inside booths or ducts. See also WAC 296-24-37005.

(6) Belts. Belts shall not enter the duct or booth unless the belt and pulley within the duct or booth are thoroughly enclosed.

(7) Exhaust ducts. Exhaust ducts shall be constructed of steel and shall be substantially supported. Exhaust ducts without dampers are preferred; however, if dampers are installed, they shall be maintained so that they will be in a full open position at all times the ventilating system is in operation.

(a) Exhaust ducts shall be protected against mechanical damage and have a clearance from unprotected combustible construction or other combustible material of not less than 18 inches.

(b) If combustible construction is provided with the following protection applied to all surfaces within 18 inches, clearances may be reduced to the distances indicated:

(i) 8-gage sheet metal on 1/4-inch 12 inches.
asbestos mill board.

(ii) 28-gage sheet metal on 1/8-inch 9 inches.
asbestos mill board spaced out 1 inch on noncombustible spacers.

(iii) 22-gage sheet metal on 1-inch 3 inches.
rockwool batts reinforced with wire mesh or the equivalent.

(iv) Where ducts are protected with an approved automatic sprinkler system, properly maintained, the clearance required in (7)(a) of this section may be reduced to 6 inches.

(8) Discharge clearance. Unless the spray booth exhaust duct terminal is from a water-wash spray booth, the terminal discharge point shall be not less than 6 feet from any combustible exterior wall or roof nor discharge in the direction of any combustible construction or unprotected opening in any noncombustible exterior wall within 25 feet.

(9) Air exhaust. Air exhaust from spray operations shall not be directed so that it will contaminate makeup air being introduced into the spraying area or other ventilating intakes, nor directed so as to create a nuisance. Air exhausted from spray operations shall not be recirculated.

(10) Access doors. When necessary to facilitate cleaning, exhaust ducts shall be provided with an ample number of access doors.

(11) Room intakes. Air intake openings to rooms containing spray finishing operations shall be adequate for the efficient operation of exhaust fans and shall be so located as to minimize the creation of dead air pockets.

(12) Drying spaces. Freshly sprayed articles shall be dried only in spaces provided with adequate ventilation to prevent the formation of explosive vapors. In the event adequate and reliable ventilation is not provided such drying spaces shall be considered a spraying area. (See also WAC 296-24-37019.)

[Order 76-6, § 296-24-37007, filed 3/1/76; Order 73-5, § 296-24-37007, filed 5/9/73 and Order 73-4, § 296-24-37007, filed 5/7/73.]

WAC 296-24-37009 Flammable and combustible liquids—Storage and handling. (1) Conformance. The storage of flammable or combustible liquids in connection with spraying operations shall conform to the requirements of WAC 296-24-330, where applicable.

(2) Quantity. The quantity of flammable or combustible liquids kept in the vicinity of spraying operations shall be the minimum required for operations and should ordinarily not exceed a supply for 1 day or one shift. Bulk storage of portable containers of flammable or combustible liquids shall be in a separate, constructed building detached from other important buildings or cut off in a standard manner.

(3) Containers. Original closed containers, approved portable tanks, approved safety cans or a properly arranged system of piping shall be used for bringing flammable or combustible liquids into spray finishing room. Open or glass containers shall not be used.

(4) Transferring liquids. Except as provided in (5) of this section, the withdrawal of flammable and combustible liquids from containers having a capacity of greater than 60 gallons shall be by approved pumps. The withdrawal of flammable or combustible liquids from containers and the filling of containers, including portable mixing tanks, shall be done only in a suitable mixing room or in a spraying area when the ventilating system is in operation. Adequate precautions shall be taken to protect against liquid spillage and sources of ignition.

(5) Spraying containers. Containers supplying spray nozzles shall be of closed type or provided with metal covers

kept closed. Containers not resting on floors shall be on metal supports or suspended by wire cables. Containers supplying spray nozzles by gravity flow shall not exceed 10 gallons capacity. Original shipping containers shall not be subject to air pressure for supplying spray nozzles. Containers under air pressure supplying spray nozzles shall be of limited capacity, not exceeding that necessary for 1 day's operation; shall be designed and approved for such use; shall be provided with a visible pressure gage; and shall be provided with a relief valve set to operate in conformance with the requirements of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code—1968. Containers under air pressure supplying spray nozzles, air-storage tanks and coolers shall conform to the standards of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code—1968 for construction, tests, and maintenance.

(6) Pipes and hoses.

(a) All containers or piping to which is attached a hose or flexible connection shall be provided with a shutoff valve at the connection. Such valves shall be kept shut when spraying operations are not being conducted.

(b) When a pump is used to deliver products, automatic means shall be provided to prevent pressure in excess of the design working pressure of accessories, piping, and hose.

(c) All pressure hose and couplings shall be inspected at regular intervals appropriate to this service. The hose and couplings shall be tested with the hose extended, and using the "inservice maximum operating pressures." Any hose showing material deteriorations, signs of leakage, or weakness in its carcass or at the couplings, shall be withdrawn from service and repaired or discarded.

(d) Piping systems conveying flammable or combustible liquids shall be of steel or other material having comparable properties of resistance to heat and physical damage. Piping systems shall be properly bonded and grounded.

(7) Spray liquid heaters. Electrically powered spray liquid heaters shall be approved and listed for the specific location in which used (see WAC 296-24-37005). Heaters shall not be located in spray booths nor other locations subject to the accumulation of deposits or combustible residue. Agitators, if used, should preferably be driven by compressed air, water, or low-pressure steam. If an electric motor is used, (see WAC 296-24-37005).

(8) Pump relief. If flammable or combustible liquids are supplied to spray nozzles by positive displacement pumps, the pump discharge line shall be provided with an approved relief valve discharging to a pump suction or a safe detached location, or a device provided to stop the prime mover if the discharge pressure exceeds the safe operating pressure of the system.

(9) Grounding. Whenever flammable or combustible liquids are transferred from one container to another, both containers shall be effectively bonded and grounded to prevent discharge sparks of static electricity.

[Order 73-5, § 296-24-37009, filed 5/9/73 and Order 73-4, § 296-24-37009, filed 5/7/73.]

WAC 296-24-37011 Protection. (1) Conformance. In sprinklered buildings, the automatic sprinkler system in rooms containing spray finishing operations shall conform to the requirements of WAC 296-24-607. In unsprinklered buildings where sprinklers are installed only to protect spraying areas, the installation shall conform to such standards insofar as they are applicable. Sprinkler heads shall be located so as to provide water distribution throughout the entire booth.

(2) Valve access. Automatic sprinklers protecting each spray booth (together with its connecting exhaust) shall be under an accessibly located separate outside stem and yoke (OS&Y) subcontrol valve.

(3) Cleaning of heads. Sprinklers protecting spraying areas shall be kept as free from deposits as practical by cleaning daily if necessary. (See also WAC 296-24-37013.)

(4) Portable extinguishers. An adequate supply of suitable portable fire extinguishers shall be installed near all spraying areas.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-37011, filed 12/24/81; Order 73-5, § 296-24-37011, filed 5/9/73 and Order 73-4, § 296-24-37011, filed 5/7/73.]

WAC 296-24-37013 Operations and maintenance. (1) Spraying. Spraying shall not be conducted outside of predetermined spraying areas.

(2) Cleaning. All spraying areas shall be kept as free from the accumulation of deposits of combustible residues as practical, with cleaning conducted daily if necessary. Scrapers, spuds, or other such tools used for cleaning purposes shall be of nonsparking material.

(3) Residue disposal. Residue scrapings and debris contaminated with residue shall be immediately removed from the premises and properly disposed of. Approved metal waste cans shall be provided wherever rags or waste are impregnated with finishing material and all such rags or waste deposited therein immediately after use. The contents of waste cans shall be properly disposed of at least once daily or at the end of each shift.

(4) Clothing storage. Spray finishing employees' clothing shall not be left on the premises overnight unless kept in metal lockers.

(5) Cleaning solvents. The use of solvents for cleaning operations shall be restricted to those having flashpoints not less than 100°F; however, for cleaning spray nozzles and auxiliary equipment, solvents having flashpoints not less than those normally used in spray operations may be used. Such cleaning shall be conducted inside spray booths and ventilating equipment operated during cleaning.

(6) Hazardous materials combinations. Spray booths shall not be alternately used for different types of coating materials, where the combination of the materials may be conducive to spontaneous ignition, unless all deposits of the first used material are removed from the booth and exhaust ducts prior to spraying with the second used material.

(7) "No smoking" signs. "No smoking" signs in large letters on contrasting color background shall be conspicuously posted at all spraying areas and paint storage rooms. (See WAC 296-24-140.)

[Order 73-5, § 296-24-37013, filed 5/9/73 and Order 73-4, § 296-24-37013, filed 5/7/73.]

WAC 296-24-37015 Fixed electrostatic apparatus. (1) Conformance. Where installation and use of electrostatic

spraying equipment is used, such installation and use shall conform to all other requirements contained in WAC 296-24-370 through 296-24-37027.

(2) Type approval. Electrostatic apparatus and devices used in connection with coating operations shall be of approved types.

(3) Location. Transformers, power packs, control apparatus, and all other electrical portions of the equipment, with the exception of high-voltage grids, electrodes, and electrostatic atomizing heads and their connections, shall be located outside of the spraying area, or shall otherwise conform to the requirements of WAC 296-24-37005.

(4) Support. Electrodes and electrostatic atomizing heads shall be adequately supported in permanent locations and shall be effectively insulated from the ground. Electrodes and electrostatic atomizing heads which are permanently attached to their bases, supports, or reciprocators, shall be deemed to comply with this section. Insulators shall be nonporous and noncombustible.

(5) Insulators, grounding. High-voltage leads to electrodes shall be properly insulated and protected from mechanical injury or exposure to destructive chemicals. Electrostatic atomizing heads shall be effectively and permanently supported on suitable insulators and shall be effectively guarded against accidental contact or grounding. An automatic means shall be provided for grounding the electrode system when it is electrically deenergized for any reason. All insulators shall be kept clean and dry.

(6) Safe distance. A safe distance shall be maintained between goods being painted and electrodes or electrostatic atomizing heads or conductors of at least twice the sparking distance. A suitable sign indicating this safe distance shall be conspicuously posted near the assembly.

(7) Conveyors required. Goods being painted using this process are to be supported on conveyors. The conveyors shall be so arranged as to maintain safe distances between the goods and the electrodes or electrostatic atomizing heads at all times. Any irregularly shaped or other goods subject to possible swinging or movement shall be rigidly supported to prevent such swinging or movement which would reduce the clearance to less than that specified in (6) of this section.

(8) Prohibition. This process is not acceptable where goods being coated are manipulated by hand. When finishing materials are applied by electrostatic equipment which is manipulated by hand, see WAC 296-24-37017 for applicable requirements. (Rev. 1-23-76)

(9) Fail-safe controls. Electrostatic apparatus shall be equipped with automatic controls which will operate without time delay to disconnect the power supply to the high voltage transformer and to signal the operator under any of the following conditions:

(a) Stoppage of ventilating fans or failure of ventilating equipment from any cause.

(b) Stoppage of the conveyor carrying goods through the high voltage field.

(c) Occurrence of a ground or of an imminent ground at any point on the high voltage system.

(d) Reduction of clearance below that specified in (6) of this section.

(10) Guarding. Adequate booths, fencing, railings, or guards shall be so placed about the equipment that they, either by their location or character or both, assure that a safe isolation of the process is maintained from plant storage or personnel. Such railings, fencing, and guards shall be of conducting material, adequately grounded.

(11) Ventilation. Where electrostatic atomization is used the spraying area shall be so ventilated as to insure safe conditions from a fire and health standpoint.

(12) Fire protection. All areas used for spraying, including the interior of the booth, shall be protected by automatic sprinklers where this protection is available. Where this protection is not available, other approved automatic extinguishing equipment shall be provided.

[Order 76-6, § 296-24-37015, filed 3/1/76; Order 73-5, § 296-24-37015, filed 5/9/73 and Order 73-4, § 296-24-37015, filed 5/7/73.]

WAC 296-24-37017 Electrostatic hand spraying equipment. (1) Application. This section shall apply to any equipment using electrostatically charged elements for the atomization and/or, precipitation of materials for coatings on articles, or for other similar purposes in which the atomizing device is hand held and manipulated during the spraying operation.

(2) Conformance. Electrostatic hand spraying equipment shall conform with the other provisions of WAC 296-24-370 through 296-24-37027.

(3) Equipment approval and specifications. Electrostatic hand spray apparatus and devices used in connection with coating operations shall be of approved types. The equipment should be so designed that the maximum surface temperature of the equipment in the spraying area shall not exceed 150°F under any condition. The high voltage circuits shall be designed so as to not produce a spark of sufficient intensity to ignite any vapor-air mixtures nor result in appreciable shock hazard upon coming in contact with a grounded object under all normal operating conditions. The electrostatically charged exposed elements of the handgun shall be capable of being energized only by a switch which also controls the coating material supply.

(4) Electrical support equipment. Transformers, powerpacks, control apparatus, and all other electrical portions of the equipment, with the exception of the handgun itself and its connections to the powder supply shall be located outside of the spraying area or shall otherwise conform to the requirements of WAC 296-24-37005.

(5) Spray gun ground. The handle of the spraying gun shall be electrically connected to ground by a metallic connection and to be so constructed that the operator in normal operating position is in intimate electrical contact with the grounded handle.

(6) Grounding—General. All electrically conductive objects in the spraying area shall be adequately grounded. This requirement shall apply to paint containers, wash cans, and any other objects or devices in the area. The equipment shall carry a prominent permanently installed warning regarding the necessity for this grounding feature.

(7) Maintenance of grounds. Objects being painted or coated shall be maintained in metallic contact with the conveyor or other grounded support. Hooks shall be regularly cleaned to insure this contact and areas of contact shall be sharp points or knife edges where possible. Points of support of the object shall be concealed from random spray where feasible and where the objects being sprayed are

supported from a conveyor, the point of attachment to the conveyor shall be so located as to not collect spray material during normal operation.

(8) Interlocks. The electrical equipment shall be so interlocked with the ventilation of the spraying area that the equipment cannot be operated unless the ventilation fans are in operation.

(9) Ventilation. The spraying operation shall take place within a spray area which is adequately ventilated to remove solvent vapors released from the operation.

[Order 73-5, § 296-24-37017, filed 5/9/73 and Order 73-4, § 296-24-37017, filed 5/7/73.]

WAC 296-24-37019 Drying, curing, or fusion apparatus. (1) Conformance. Drying, curing, or fusion apparatus in connection with spray application of flammable and combustible finishes shall conform to the Standard for Ovens and Furnaces, NFPA 86A-1969, where applicable and shall also conform with the following requirements of this section.

(2) Alternate use prohibited. Spray booths, rooms, or other enclosures used for spraying operations shall not alternately be used for the purpose of drying by any arrangement which will cause a material increase in the surface temperature of the spray booth, room, or enclosure.

(3) Adjacent system interlocked. Except as specifically provided in (4) of this section, drying, curing, or fusion units utilizing a heating system having open flames or which may produce sparks shall not be installed in a spraying area, but may be installed adjacent thereto when equipped with an interlocked ventilating system arranged to:

(a) Thoroughly ventilate the drying space before the heating system can be started;

(b) Maintain a safe atmosphere at any source of ignition;

(c) Automatically shut down the heating system in the event of failure of the ventilating system.

(4) Alternate use permitted. Automobile refinishing spray booths or enclosures, otherwise installed and maintained in full conformity with this section, may alternately be used for drying with portable electrical infrared drying apparatus when conforming with the following:

(a) Interior (especially floors) of spray enclosures shall be kept free of overspray deposits.

(b) During spray operations, the drying apparatus and electrical connections and wiring thereto shall not be located within spray enclosure nor in any other location where spray residues may be deposited thereon.

(c) The spraying apparatus, the drying apparatus, and the ventilating system of the spray enclosure shall be equipped with suitable interlocks so arranged that:

(i) The spraying apparatus cannot be operated while the drying apparatus is inside the spray enclosure.

(ii) The spray enclosure will be purged of spray vapors for a period of not less than 3 minutes before the drying apparatus can be energized.

(iii) The ventilating system will maintain a safe atmosphere within the enclosure during the drying process and the drying process apparatus will automatically shut off in the event of failure of the ventilating system.

(d) All electrical wiring and equipment of the drying apparatus shall conform with the applicable sections of chapter 296-24 WAC Part L. Only equipment of a type approved for Class I, Division 2 hazardous locations shall be located within 18 inches of floor level. All metallic parts of the drying apparatus shall be properly electrically bonded and grounded.

(e) The drying apparatus shall contain a prominently located, permanently attached warning sign indicating that ventilation should be maintained during the drying period and that spraying should not be conducted in the vicinity that spray will deposit on apparatus.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-37019, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-37019, filed 4/19/85; Order 76-6, § 296-24-37019, filed 3/1/76; Order 73-5, § 296-24-37019, filed 5/9/73 and Order 73-4, § 296-24-37019, filed 5/7/73.]

WAC 296-24-37021 Automobile undercoating in garages. Automobile undercoating spray operations in garages, conducted in areas having adequate natural or mechanical ventilation, are exempt from the requirements pertaining to spray finishing operations, when using undercoating materials not more hazardous than kerosene (as listed by Underwriters' Laboratories in respect to fire hazard rating 30-40) or undercoating materials using only solvents listed as having a flash point in excess of 100°F. Undercoating spray operations not conforming to these provisions are subject to all requirements of WAC 296-24-370 through 296-24-37027, pertaining to spray finishing operations.

[Order 73-5, § 296-24-37021, filed 5/9/73 and Order 73-4, § 296-24-37021, filed 5/7/73.]

WAC 296-24-37023 Powder coating. (1) Electrical and other sources of ignition. Electrical equipment and other sources of ignition shall conform to the requirements of WAC 296-24-37005 and chapter 296-24 WAC Part L.

(2) Ventilation.

(a) In addition to the provisions of WAC 296-24-37007, where applicable, exhaust ventilation shall be sufficient to maintain the atmosphere below the lowest explosive limits for the materials being applied. All nondeposited air-suspended powders shall be safely removed via exhaust ducts to the powder recovery cyclone or receptacle. Each installation shall be designed and operated to meet the foregoing performance specification.

(b) Powders shall not be released to the outside atmosphere.

(3) Drying, curing, or fusion equipment. The provisions of the Standard for Ovens and Furnaces, NFPA No. 86A-1969 shall apply where applicable.

(4) Operation and maintenance.

(a) All areas shall be kept free of the accumulation of powder coating dusts, particularly such horizontal surfaces as ledges, beams, pipes, hoods, booths, and floors.

(b) Surfaces shall be cleaned in such manner as to avoid scattering dust to other places or creating dust clouds.

(c) "No smoking" signs in large letters on contrasting color background shall be conspicuously posted at all powder coating areas and powder storage rooms.

(5) Fixed electrostatic spraying equipment. The provisions of WAC 296-24-37015 and other subsections of this

section shall apply to fixed electrostatic equipment, except that electrical equipment not covered therein shall conform to (1) of this section.

(6) Electrostatic hand spraying equipment. The provisions of WAC 296-24-37017 and other subsections of this section, shall apply to electrostatic handguns when used in powder coating, except that electrical equipment not covered therein shall conform to (1) of this section.

(7) Electrostatic fluidized beds.

(a) Electrostatic fluidized beds and associated equipment shall be of approved types. The maximum surface temperature of this equipment in the coating area shall not exceed 150°F. The high voltage circuits shall be so designed as to not produce a spark of sufficient intensity to ignite any powder-air mixtures nor result in appreciable shock hazard upon coming in contact with a grounded object under normal operating conditions.

(b) Transformers, powerpacks, control apparatus, and all other electrical portions of the equipment, with the exception of the charging electrodes and their connections to the power supply shall be located outside of the powder coating area or shall otherwise conform to the requirements of (1) of this section.

(c) All electrically conductive objects within the charging influence of the electrodes shall be adequately grounded. The powder coating equipment shall carry a prominent, permanently installed warning regarding the necessity for grounding these objects.

(d) Objects being coated shall be maintained in contact with the conveyor or other support in order to insure proper grounding. Hangers shall be regularly cleaned to insure effective contact and areas of contact shall be sharp points or knife edges where possible.

(e) The electrical equipment shall be so interlocked with the ventilation system that the equipment cannot be operated unless the ventilation fans are in operation.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-37023, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-37023, filed 4/19/85; Order 76-6, § 296-24-37023, filed 3/1/76; Order 73-5, § 296-24-37023, filed 5/9/73 and Order 73-4, § 296-24-37023, filed 5/7/73.]

WAC 296-24-37025 Organic peroxides and dual component coatings. (1) Conformance. All spraying operations involving the use of organic peroxides and other dual component coatings shall be conducted in approved sprinklered spray booths meeting the requirements of this section.

(2) Smoking. Smoking shall be prohibited and "no smoking" signs shall be prominently displayed and only nonsparking tools shall be used in any area where organic peroxides are stored, mixed or applied.

[Order 73-5, § 296-24-37025, filed 5/9/73 and Order 73-4, § 296-24-37025, filed 5/7/73.]

WAC 296-24-37027 Scope. This section applies to flammable and combustible finishing materials when applied as a spray by compressed air, "airless" or "hydraulic atomization," steam, electrostatic methods, or by any other means in continuous or intermittent processes. The section also covers the application of combustible powders by powder spray guns, electrostatic powder spray guns, fluidized beds, or electrostatic fluidized beds. The section does not apply to outdoor spray application of buildings, tanks or other similar structures, nor to small portable spraying apparatus not used repeatedly in the same location.

[Order 73-5, § 296-24-37027, filed 5/9/73 and Order 73-4, § 296-24-37027, filed 5/7/73.]

WAC 296-24-405 Dip tanks containing flammable or combustible liquids.

[Order 73-5, § 296-24-405, filed 5/9/73 and Order 73-4, § 296-24-405, filed 5/7/73.]

WAC 296-24-40501 Definitions. (1) Dip tank. Shall mean a tank, vat, or container of flammable or combustible liquid in which articles or materials are immersed for the purpose of coating, finishing, treating, or similar processes.

(2) Vapor area. Shall mean any area containing dangerous quantities of flammable vapors in the vicinity of dip tanks, their drainboards or associated drying, conveying, or other equipment during operation or shutdown periods.

(3) Approved. Unless otherwise indicated, approval or listing by a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(4) Listed. See "approved" in subsection (3) of this section.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-40501, filed 11/14/88; Order 73-5, § 296-24-40501, filed 5/9/73 and Order 73-4, § 296-24-40501, filed 5/7/73.]

WAC 296-24-40503 Ventilation. (1) Vapor area ventilation. Vapor areas as defined in WAC 296-24-40501(2) shall be limited to the smallest practical space by maintaining a properly designed system of mechanical ventilation arranged to move air from all directions towards the vapor area origin and thence to a safe outside location. Ventilating systems shall conform to the Standards for Blower and Exhaust Systems (NFPA Pamphlet No. 91-1969). Required ventilating systems shall be so arranged that the failure of any ventilating fan shall automatically stop any dipping conveyor system. See also WAC 296-24-40505(6).

(2) Ventilation combined with drying. When a required ventilating system serves associated drying operations utilizing a heating system which may be a source of ignition, means shall be provided for preventilation before the heating system can be started; the failure of any ventilating fan shall automatically shut down the heating system; and the installation shall otherwise conform to the Standard for Ovens and Furnaces (NFPA No. 86A-1969).

[Order 73-5, § 296-24-40503, filed 5/9/73 and Order 73-4, § 296-24-40503, filed 5/7/73.]

WAC 296-24-40505 Construction of dip tanks. (1) General. Dip tanks, including drainboards if provided, shall be constructed of substantial noncombustible material, and their supports shall be of heavy metal, reinforced concrete, or masonry. Where dip tanks extend through a floor to the story below or where the weakening of the tank supports by fire may result in the tank collapse, supports should be of material having not less than 1-hour fire resistance.

(2) Overflow pipes.

(a) Dip tanks of over 150 gallons in capacity or 10 square feet in liquid surface area shall be equipped with a properly trapped overflow pipe leading to a safe location outside buildings. Smaller dip tanks should also be so equipped, where practical. The discharge of the overflow pipe should be so located and arranged that if the entire combustible contents of the dip tank is overflowed through overflow pipe by the application of water during fire fighting, property will not be endangered. The size of the overflow pipe should be sufficient to conduct the maximum rate of flow of water expected to be applied to the liquid surface of the dip tank from automatic sprinklers or from other sources in the event of fire.

(b) Overflow pipes shall be of sufficient capacity to overflow the maximum delivery of dip tank liquid fill pipes but shall not be less than 3 inches in diameter and shall be increased in size depending upon the area of the liquid surface and the length and pitch of pipe.

(c) Piping connections on drains and overflow lines shall be designed so as to permit ready access for inspection and cleaning of the interior.

(d) The bottom of the overflow connection shall be not less than 6 inches below the top of the tank. See also (6) of this section and WAC 296-24-40513 (3)(b).

(3) Bottom drains.

(a) Dip tanks over 500 gallons in liquid capacity shall be equipped with bottom drains automatically and manually arranged to quickly drain the tank in the event of fire, unless the viscosity of the liquid at normal atmospheric temperature makes this impractical. Manual operation shall be from a safely accessible location. Where gravity flow is not practicable, automatic pumps shall be required.

(b) Such drain shall be trapped and discharge to a closed properly vented salvage tank or to a safe location outside which will not endanger property.

(c) According to tank capacity the diameter of bottom drainpipe shall be not less than the following:

Gallons:	Inches
500 to 750	3
750 to 1,000	4
1,000 to 2,500	5
2,500 to 4,000	6
Over 4,000	8

(4) Salvage tanks. The capacity of the salvage tank shall be greater than the capacity of the dip tank or tanks to which they are connected.

(5) Automatic extinguishing facilities. Except as noted in WAC 296-24-40515(1) (applying to hardening and tempering tanks), all dip tanks exceeding 150 gallons liquid capacity or having a liquid surface area exceeding 4 square feet shall be protected with at least one of the automatic extinguishing facilities conforming to WAC 296-24-40513 (2), (3), (4), (5) or (6).

(6) Conveyor systems. Dip tanks utilizing a conveyor system shall be so arranged that in the event of fire, the conveyor system shall automatically cease motion and required bottom drains shall open. Conveyor systems shall automatically cease motion unless required ventilation is in full operation. See also WAC 296-24-40503(1).

(7) Heating dip tank liquids. When dip tank liquids are artificially heated, either by the dipping of heated articles, or by other application of heat to the liquid, provision shall be made to prevent a temperature rise greater than 50°F below the flashpoint of the liquid. See also WAC 296-24-40515(1).

[Order 73-5, § 296-24-40505, filed 5/9/73 and Order 73-4, § 296-24-40505, filed 5/7/73.]

WAC 296-24-40507 Liquids used in dip tanks, storage and handling. The storage of flammable and combustible liquids in connection with dipping operation shall conform to the requirements of WAC 296-24-330, where applicable. Where portable containers are used for the replenishment of flammable and combustible liquids, provision shall be made so that both the container and tank shall be positively grounded and electrically bonded to prevent static electric sparks.

[Order 73-5, § 296-24-40507, filed 5/9/73 and Order 73-4, § 296-24-40507, filed 5/7/73.]

WAC 296-24-40509 Electrical and other sources of ignition. (1) Vapor areas.

(a) There shall be no open flames, spark producing devices, or heated surfaces having a temperature sufficient to ignite vapors in any vapor area. Except as specifically permitted in WAC 296-24-40515(3), relating to electrostatic apparatus, electrical wiring and equipment in any vapor area (as defined in WAC 296-24-40501(2)) shall be explosion proof type as required by chapter 296-24 WAC Part L for Class I, locations and shall otherwise conform to the requirements of chapter 296-24 WAC Part L.

(b) Unless specifically approved for locations containing both deposits of readily ignitable residues and explosive vapors, there shall be no electrical equipment in the vicinity of dip tanks or associated drainboards or drying operations which are subject to splashing or dripping of dip tank liquids, except wiring in rigid conduit or in threaded boxes or fittings containing no taps, splices, or terminal connections, and except as specifically permitted in WAC 296-24-40515(3).

(2) Adjacent areas. In any floor space outside a vapor area but within 20 feet and not separated by tight partitions, there shall be no open flames or spark producing devices except as specifically permitted in NFPA Standard No. 86A-1969, Ovens and Furnaces, paragraph 200-7. Electrical wiring and equipment shall conform to the provisions of chapter 296-24 WAC Part L.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-40509, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-40509, filed 4/19/85; Order 76-6, § 296-24-40509, filed 3/1/76; Order 73-5, § 296-24-40509, filed 5/9/73 and Order 73-4, § 296-24-40509, filed 5/7/73.]

WAC 296-24-40511 Operations and maintenance. (1) General. Areas in the vicinity of dip tanks shall be kept as clear of combustible stock as practical and shall be kept entirely free of combustible debris.

(2) Waste cans. When waste or rags are used in connection with dipping operations, approved metal waste cans shall be provided and all impregnated rags or waste

deposited therein immediately after use. The contents of waste cans shall be properly disposed of at least once daily at the end of each shift.

(3) Inspection. Periodic inspection or tests of all dip tank facilities shall be made, including covers, overflow pipe inlets and discharge, bottom drains and valves, electrical wiring and equipment and grounding connections, ventilating facilities, and all extinguishing equipment. Any defects found shall be promptly corrected.

(4) Warning signs. "No smoking" signs in large letters on contrasting color background shall be conspicuously posted in the vicinity of dip tanks.

[Order 73-5, § 296-24-40511, filed 5/9/73 and Order 73-4, § 296-24-40511, filed 5/7/73.]

WAC 296-24-40513 Extinguishment. (1) Extinguishers. Areas in the vicinity of dip tanks shall be provided with manual fire extinguishers suitable for flammable and combustible liquid fires, conforming to WAC 296-24-592.

(2) Automatic water spray extinguishing systems. Automatic water spray extinguishing systems shall conform to WAC 296-24-627 and shall be arranged to protect tanks, drainboards, and stock over drainboards.

(3) Automatic foam extinguishing systems. Automatic foam extinguishing systems shall conform to WAC 296-24-627 and;

(a) Foam producing material selected shall be suitable for intended use, taking into account characteristics of the dip tank liquid;

(b) Overflow pipe shall be arranged to prevent the floating away of foam and clogging overflow pipe. This may be accomplished by either of the following:

(i) Overflow pipe may be extended through tank wall and terminated in an ell pointing downward. The bottom of the overflow pipe at the point it pierces tank wall should not be over 2 inches above the opening or face of the ell.

(ii) Overflow pipe inlet may be provided with a removable screen of 1/4-inch mesh having an area at least twice the cross-sectional area of overflow pipe. Screens which may be clogged by dip tank ingredients shall be inspected and cleaned periodically.

(4) Automatic carbon dioxide systems. Automatic carbon dioxide systems shall conform to WAC 296-24-623 and shall be arranged to protect both dip tanks and drainboards and unless stock over drainboards is otherwise protected with automatic extinguishing facilities, shall also be arranged to protect such stock.

(5) Dry chemical extinguishing systems. Dry chemical extinguishing systems shall conform to WAC 296-24-622 and shall be arranged to protect both dip tanks and drainboards, and unless stock over drainboards is otherwise protected with automatic extinguishing facilities, shall also be arranged to protect such stock.

(6) Dip tank covers.

(a) Covers arranged to close automatically in the event of fire shall be actuated by approved automatic devices and shall also be arranged for manual operation.

(b) Covers shall be of substantial noncombustible material or of tin-clad type with enclosing metal applied with locked joints.

(c) Chains or wire rope shall be used for cover support or operating mechanism where the burning of a cord would interfere with the action of a device.

(d) Covers shall be kept closed when tanks are not in use.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-40513, filed 12/24/81; Order 73-5, § 296-24-40513, filed 5/9/73 and Order 73-4, § 296-24-40513, filed 5/7/73.]

WAC 296-24-40515 Special dip tank applications. (1) Hardening and tempering tanks.

(a) Tanks shall be located as far as practicable from furnaces and shall not be located on or near combustible floors.

(b) Tanks shall be provided with a noncombustible hood and vent or other equally effective means of venting to the outside of the building to serve as a vent in case of fire. All such vent ducts shall be treated as flues and be kept well away from combustible roofs or materials.

(c) Tanks shall be so designed that the maximum workload is incapable of raising the temperature of the cooling medium to within 50° below its flashpoint, or such tanks shall be equipped with circulating cooling systems which will accomplish the same result.

(d) Tanks shall be equipped with a high temperature limit switch arranged to sound an alarm when the temperature of the quenching medium reaches within 50°F below the flashpoint. If practical from an operating standpoint, such limit switches shall also shut down conveying equipment supplying work to the tank.

(e) The provisions of WAC 296-24-40505(5) shall apply to tanks having a liquid surface area of 25 square feet or more or a capacity of 500 gallons or more.

(f) Air under pressure shall not be used to fill or to agitate oil tanks.

(g) Drain facilities from the bottom of the tank may be combined with the oil circulating system or arranged independently to drain the oil to a safe location. The drain valve shall be operated automatically with approved heat actuated devices or manually, and if the latter, the valve shall be operated from a safe distance.

(2) Flow coat; general.

(a) Except as modified in this subsection, all of the preceding standards for dip tanks apply.

(b) All piping shall be strongly erected and rigidly supported.

(c) Paint shall be supplied by direct low-pressure pumping arranged to automatically shut down by means of approved heat actuated devices, in the case of fire, or paint may be supplied by a gravity tank not exceeding 10 gallons in capacity.

(d) The area of the sump and any areas on which paint flows should be considered the area of dip tank.

(3) Electrostatic apparatus; general.

(a) Installation and use of electrostatic detearing equipment shall conform to WAC 296-24-40501 through 296-24-40513.

(b) Electrostatic apparatus and devices used in connection with paint detearing operations shall be of approved types.

(c) Transformers, powerpacks, control apparatus, and all other electrical portions of the equipment, with the exception of high voltage grids and their connections, shall be located outside the vapor area or shall conform to the requirements of WAC 296-24-40509.

(d) Electrodes shall be of substantial construction, shall be rigidly supported in permanent locations and shall be effectively insulated from ground. Insulators shall be nonporous and noncombustible.

(e) High voltage leads to electrodes shall be effectively and permanently supported on suitable insulators, and shall be effectively guarded against accidental contact or grounding. An automatic means shall be provided for grounding and discharging any accumulated residual charge on the electrode assembly or the secondary circuit of the high voltage transformer when the transformer primary is disconnected from the source of supply.

(f) A space shall be maintained between goods being deteared and electrodes or conductors of at least twice the sparking distance. A suitable sign stating the sparking distance shall be conspicuously posted near the assembly.

(g) Goods being deteared using this electrostatic process are to be supported on conveyors. The conveyors shall be so arranged as to maintain safe distances between the goods and the electrodes at all times. All goods shall be so supported as to prevent any swinging or movement which would reduce the clearance to less than specified in (3)(f) of this section.

(h) This electrostatic process is not approved where goods being deteared are manipulated by hand.

(i) Electrostatic apparatus shall be equipped with automatic controls which will operate without time delay to disconnect the power supply to the high voltage transformer and to signal the operator under any of the following conditions:

(i) Stoppage of ventilating fans or failure of ventilating equipment from any cause.

(ii) Stoppage of the conveyor carrying goods past the high voltage grid.

(iii) Occurrence of a ground or of an imminent ground at any point on the high voltage system.

(iv) Reduction of clearance below that specified in (3)(f) of this section.

(j) Adequate fencing, railings, or guards shall be so placed about the equipment that they, either by their location or character or both, assure that a safe isolation of the process is maintained from plant storage or personnel. Such railings, fencing and guards shall be of conducting material, adequately grounded, and should be at least 5 feet from processing equipment.

(k) Electrode insulators shall be kept clean and dry.

(l) The detearing area shall be ventilated by exhausting adequate air from the area as specified in WAC 296-24-40503.

(m) All areas for detearing shall be protected by automatic sprinklers where this protection is available. Where this protection is not available, other approved automatic extinguishing equipment shall be provided.

(n) Drip plates and screens subject to paint deposits shall be removable and shall be taken to a safe place for cleaning.

(4) Roll coating.

(a) The processes of roll coating, spreading, and impregnating, in which fabrics, paper, or other materials are passed directly through a tank or through containing flammable or combustible liquids, or over the surface of a roller that revolves partially submerged in a Class I or Class II liquid, as these terms are defined in WAC 296-24-33001, shall conform to the applicable requirements of WAC 296-24-40501 through 296-24-40513.

(b) Adequate arrangements shall be made to prevent sparks from static electricity by electrically bonding and grounding all metallic rotating and other parts of machinery and equipment and by the installation of static collectors or maintaining a conductive atmosphere such as a high relative humidity.

[Order 76-6, § 296-24-40515, filed 3/1/76; Order 74-27, § 296-24-40515, filed 5/7/74; Order 73-5, § 296-24-40515, filed 5/9/73 and Order 73-4, § 296-24-40515, filed 5/7/73.]

WAC 296-24-450 Chlorine cylinders used in chlorinator systems. Ventilation, storage of tanks and use of tanks shall meet specifications of The Chlorine Manual, The Chlorine Institute, Inc., fifth edition, 1986.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-450, filed 1/10/91, effective 2/12/91; Order 74-27, § 296-24-450, filed 5/7/74.]

PART F-1
STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES

WAC 296-24-475 Storage and handling of liquefied petroleum gases.

[Order 73-5, § 296-24-475, filed 5/9/73 and Order 73-4, § 296-24-475, filed 5/7/73.]

WAC 296-24-47501 Definitions. (1) API-ASME container. A container constructed in accordance with the requirements of WAC 296-24-47505 (3)(a).

(2) ASME container. A container constructed in accordance with the requirements of WAC 296-24-47505 (3)(a).

(3) Container assembly. An assembly consisting essentially of the container and fittings for all container openings, including shutoff valves, excess flow valves, liquid-level gaging devices, safety relief devices, and protective housing.

(4) Containers. All vessels, such as tanks, cylinders, or drums, used for transportation or storing liquefied petroleum gases.

(5) DOT. Department of transportation.

(6) DOT container. A container constructed in accordance with the applicable requirements of 49 CFR chapter 1.

(7) "Liquefied petroleum gases." "LPG" and "LP-gas." Any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them; propane, propylene, butanes (normal butane or iso-butane), and butylenes.

(8) Movable fuel storage tenders or farm carts. Containers not in excess of 1,200 gallons water capacity, equipped with wheels to be towed from one location of usage to another. They are basically nonhighway vehicles,

but may occasionally be moved over public roads or highways. They are used as a fuel supply for farm tractors, construction machinery and similar equipment.

(9) P.S.I.G. Pounds per square inch gauge.

(10) P.S.I.A. Pounds per square inch absolute.

(11) Systems. An assembly of equipment consisting essentially of the container or containers, major devices such as vaporizers, safety relief valves, excess flow valves, regulators, and piping connecting such parts.

(12) Vaporizer-burner. An integral vaporizer-burner unit, dependent upon the heat generated by the burner as the source of heat to vaporize the liquid used for dehydrators or dryers.

(13) Ventilation, adequate. When specified for the prevention of fire during normal operation, ventilation shall be considered adequate when the concentration of the gas in a gas-air mixture does not exceed 25 percent of the lower flammable limit.

(14) Approved. Unless otherwise indicated, listing or approval by a nationally recognized testing laboratory. Refer to 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(15) Listed. See "approved" in WAC 296-24-47501(14).

(16) DOT specifications. Regulations of the department of transportation published in 49 CFR chapter I.

(17) DOT regulations. See WAC 296-24-47501(16).

(18) DOT requirements. See WAC 296-24-47501(16).

(19) DOT cylinders. Cylinders meeting the requirements of 49 CFR chapter I.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-47501, filed 11/14/88; Order 73-5, § 296-24-47501, filed 5/9/73 and Order 73-4, § 296-24-47501, filed 5/7/73.]

WAC 296-24-47503 Scope. (1) Application. (a) WAC 296-24-47505 applies to installations made in accordance with the requirements of WAC 296-24-47507 through 296-24-47511, 296-24-47515 and 296-24-47517, except as noted in each of those sections.

(b) WAC 296-24-47507 through 296-24-47517 apply as provided in each of those sections.

(2) Inapplicability. These sections do not apply to:

(a) Marine and pipeline terminals, natural gas processing plants, refineries, or tank farms other than those at industrial sites.

(b) LP-gas refrigerated storage systems;

(c) LP-gas when used with oxygen. The requirements of WAC 296-24-680 through 296-24-722 shall apply to such use;

(d) LP-gas when used in utility gas plants. The National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants, NFPA No. 59-1968, shall apply to such use;

(e) Low-pressure (not in excess of one-half pound per square inch or 14 inches water column) LP-gas piping systems, and the installation and operation of residential and commercial appliances including their inlet connections, supplied through such systems. For such systems, the National Fire Protection Association Standard for the Installation of Gas Appliances and Gas Piping, NFPA 54-1969 shall apply.

(3) Retroactivity. Unless otherwise stated, it is not intended that the provisions of these sections be retroactive.

(a) Existing plants, appliances, equipment, buildings, structures, and installations for the storage, handling or use of LP-gas, which were in compliance with the current provisions of the National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases NFPA No. 58-1972, 1973 at the time of manufacture or installation may be continued in use, if such continued use does not constitute a recognized hazard that is causing or is likely to cause death or serious physical harm to employees.

(b) Stocks of equipment and appliances on hand in such locations as manufacturers' storage, distribution warehouses, and dealers' storage and showrooms, which were in compliance with the current provisions of the National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases, NFPA No. 58-1972, 1973, at the time of manufacture, may be placed in service, if such use does not constitute a recognized hazard that is causing or is likely to cause death or serious physical harm to employees.

[Order 73-5, § 296-24-47503, filed 5/9/73 and Order 73-4, § 296-24-47503, filed 5/7/73.]

WAC 296-24-47505 Basic rules. (1) Odorizing gases.

(a) All liquefied petroleum gases shall be effectively odorized by an approved agent of such character as to indicate positively, by distinct odor, the presence of gas down to concentration in air of not over one-fifth the lower limit of flammability. Odorization, however, is not required if harmful in the use of further processing of the liquefied petroleum gas, or if odorization will serve no useful purpose as a warning agent in such use or further processing.

(b) The odorization requirement of (a) of this subsection shall be considered to be met by the use of 1.0 pounds of ethyl mercaptan, 1.0 pounds of thiophane or 1.4 pounds of amyl mercaptan per ten thousand gallons of LP-gas. However, this listing of odorants and quantities shall not exclude the use of other odorants that meet the odorization requirements of (a) of this subsection.

(2) Approval of equipment and systems.

(a) Each system utilizing DOT containers in accordance with 49 CFR Part 178 shall have its container valves, connectors, manifold valve assemblies, and regulators approved.

(b) Each system for domestic or commercial use utilizing containers of two thousand gallons or less water capacity, other than those constructed in accordance with 49 CFR Part 178, shall consist of a container assembly and one or more regulators, and may include other parts. The system as a unit or the container assembly as a unit, and the regulator or regulators, shall be individually listed.

(c) In systems utilizing containers of over two thousand gallons water capacity, each regulator, container, valve, excess flow valve, gaging device, and relief valve installed on or at the container, shall have its correctness as to design, construction, and performance determined by listing by a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(d) The provisions of subsection (3)(a) of this section shall not be construed as prohibiting the continued use or reinstallation of containers constructed and maintained in accordance with the standard for the Storage and Handling of Liquefied Petroleum Gases NFPA No. 58 in effect at the time of fabrication.

(e) Containers used with systems embodied in this section and WAC 296-24-47509 (3)(c) and 296-24-47513, shall be constructed, tested, and stamped in accordance with DOT specifications effective at the date of their manufacture.

(3) Requirements for construction and original test of containers.

(a) Containers used with systems embodied in WAC 296-24-47509, 296-24-47513 through 296-24-47517, except as provided in WAC 296-24-47511 (3)(c) and 296-24-47515 (2)(a), shall be designed, constructed, and tested in accordance with the Rules for Construction of Unfired Pressure Vessels, section VIII, Division 1, American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, 1968 edition.

(b) Containers constructed according to the 1949 and earlier editions of the ASME Code do not have to comply with U-2 through U-10 and U-19 thereof. Containers constructed according to U-70 in the 1949 and earlier editions do not meet the requirements of this section.

(c) Containers designed, constructed, and tested prior to July 1, 1961, according to the Code for Unfired Pressure Vessels for Petroleum Liquids and Gases, 1951 edition with 1954 Addenda, of the American Petroleum Institute and the American Society of Mechanical Engineers shall be considered in conformance. Containers constructed according to API-ASME Code do not have to comply with section I or with appendix to section I. W-601 to W-606 inclusive in the 1943 and earlier editions do not apply.

(4) Welding of containers.

(a) Welding to the shell, head, or any other part of the container subject to internal pressure, shall be done in compliance with the code under which the tank was fabricated. Other welding is permitted only on saddle plates, lugs, or brackets attached to the container by the tank manufacturer.

(b) Where repair or modification involving welding of DOT containers is required, the container shall be returned to a qualified manufacturer making containers of the same type, and the repair or modification made in compliance with DOT regulations.

(5) Markings on container.

(a) Each container covered in subsection (3)(a) of this section except as provided in subsection (2)(d) of this section shall be marked as specified in the following:

(i) With a marking identifying compliance with, and other markings required by, the rules of the reference under which the container is constructed; or with the stamp and other markings required by the laws, rules or regulations as administered by the state of Washington, department of labor and industries pertaining to such containers.

(ii) With notation as to whether the container is designed for underground or aboveground installation or both. If intended for both and different style hoods are provided, the marking shall indicate the proper hood for each type of installation.

(iii) With the name and address of the supplier of the container, or with the trade name of the container.

(iv) With the water capacity of the container in pounds or gallons, United States standard.

(v) With the pressure in p.s.i.g., for which the container is designed.

(vi) With the wording "This container shall not contain a product having a vapor pressure in excess of—p.s.i.g. at 100°F," see WAC 296-24-47509, Table H-31.

(vii) With the tare weight in pounds or other identified unit of weight for containers with a water capacity of three hundred pounds or less.

(viii) With marking indicating the maximum level to which the container may be filled with liquid at temperatures between 20°F and 130°F, except on containers provided with fixed maximum level indicators or which are filled by weighing. Markings shall be increments of not more than 20°F. This marking may be located on the liquid level gaging device.

(ix) With the outside surface area in square feet.

(b) Markings specified shall be on a metal nameplate attached to the container and located in such a manner as to remain visible after the container is installed.

(c) When LP-gas and one or more other gases are stored or used in the same area, the containers shall be marked to identify their content. Marking shall be in compliance with American National Standard Z48.1-1954, "Method of Marking Portable Compressed Gas Containers to Identify the Material Contained."

(6) Location of containers and regulating equipment.

(a) Containers, and first stage regulating equipment if used, shall be located outside of buildings, except under one or more of the following:

(i) In buildings used exclusively for container charging, vaporization pressure reduction, gas mixing, gas manufacturing, or distribution.

(ii) When portable use is necessary and in accordance with WAC 296-24-47507(5).

(iii) LP-gas fueled stationary or portable engines in accordance with WAC 296-24-47511 (11) or (12).

(iv) LP-gas fueled industrial trucks used in accordance with WAC 296-24-47511(13).

(v) LP-gas fueled vehicles garaged in accordance with WAC 296-24-47511(14).

(vi) Containers awaiting use or resale when stored in accordance with WAC 296-24-47513.

(b) Each individual container shall be located with respect to the nearest important building or group of buildings or line of adjoining property which may be built on in accordance with Table H-23.

TABLE H-23

Water capacity per container	Minimum distances		
	Containers		Between above-ground containers
	Underground	Above-ground	
Less than 125 gals[1]	10 feet	None	None
125 to 250 gallons	10 feet	10 feet	None.

251 to 500 gallons	10 feet	10 feet	3 feet.
501 to 2,000 gallons	25 feet[2]	25 feet[2]	3 feet.
2,001 to 30,000 gallons	50 feet	50 feet	5 feet.
30,001 to 70,000 gallons	50 feet	75 feet	1/4 of sum of diameters of adjacent containers.
70,001 to 90,000 gallons	50 feet	100 feet	

[1]If the aggregate water capacity of a multicontainer installation at a consumer site is five hundred one gallons or greater, the minimum distance shall comply with the appropriate portion of this table, applying the aggregate capacity rather than the capacity per container. If more than one installation is made, each installation shall be separated from another installation by at least twenty-five feet. Do not apply the MINIMUM DISTANCES BETWEEN ABOVE-GROUND CONTAINERS to such installations.

[2]Note: The above distance requirements may be reduced to not less than ten feet for a single container of one thousand two hundred gallons water capacity or less, providing such a container is at least twenty-five feet from any other LP-gas container of more than one hundred twenty-five gallons water capacity.

(c) Containers installed for use shall not be stacked one above the other.

(d) In industrial installations involving containers of one hundred eighty thousand gallons aggregate water capacity or more, where serious mutual exposures between the container and adjacent properties prevail, firewalls or other means of special protection designed and constructed in accordance with good engineering practices are required.

(e) In the case of buildings devoted exclusively to gas manufacturing and distributing operations, the distances required by Table H-23 may be reduced provided that in no case shall containers of water capacity exceeding five hundred gallons be located closer than ten feet to such gas manufacturing and distributing buildings.

(f) Readily ignitible material such as weeds and long dry grass shall be removed within ten feet of any container.

(g) The minimum separation between liquefied petroleum gas containers and flammable liquid tanks shall be twenty feet, and the minimum separation between a container and the centerline of the dike shall be ten feet. The foregoing provision shall not apply when LP-gas containers of one hundred twenty-five gallons or less capacity are installed adjacent to Class III flammable liquid tanks of two hundred seventy-five gallons or less capacity.

(h) Suitable means shall be taken to prevent the accumulation of flammable liquids under adjacent liquefied petroleum gas containers, such as by diking, diversion curbs, or grading.

(i) When dikes are used with flammable liquid tanks, no liquefied petroleum gas containers shall be located within the diked area.

(7) Container valves and container accessories.

(a) Valves, fittings, and accessories connected directly to the container including primary shutoff valves, shall have a rated working pressure of at least 250 p.s.i.g. and shall be of material and design suitable for LP-gas service. Cast iron shall not be used for container valves, fittings, and accessories. This does not prohibit the use of container valves made of malleable or nodular iron.

(b) Connections to containers, except safety relief connections, liquid level gaging devices, and plugged openings, shall have shutoff valves located as close to the container as practicable.

(c) Excess flow valves, where required shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections or line including valves, fittings, etc., being protected by an excess flow valve shall have a greater capacity than the rated flow of the excess flow valve.

(d) Liquid level gaging devices which are so constructed that outward flow of container contents shall not exceed that passed by a No. 54 drill size opening, need not be equipped with excess flow valves.

(e) Openings from container or through fittings attached directly on container to which pressure gage connection is made, need not be equipped with shutoff or excess flow valves if such openings are restricted to not larger than No. 54 drill size opening.

(f) Except as provided in WAC 296-24-47507 (5)(a)(ii), excess flow and back pressure check valves where required by this section shall be located inside of the container or at a point outside where the line enters the container; in the latter case, installation shall be made in such manner that any undue strain beyond the excess flow or back pressure check valve will not cause breakage between the container and such valve.

(g) Excess flow valves shall be designed with a bypass, not to exceed a No. 60 drill size opening to allow equalization of pressures.

(h) Containers of more than thirty gallons water capacity and less than two thousand gallons water capacity, filled on a volumetric basis, and manufactured after December 1, 1963, shall be equipped for filling into the vapor space.

(8) Piping—Including pipe, tubing, and fittings.

(a) Pipe, except as provided in WAC 296-24-47511 (6)(a) and 296-24-47515 (10)(c) shall be wrought iron or steel (black or galvanized), brass, copper, or aluminum alloy. Aluminum alloy pipe shall be at least Schedule 40 in accordance with the specifications for Aluminum Alloy Pipe, American National Standards Institute (ANSI) H38.7-1969 (ASTM, B241-1969), except that the use of alloy 5456 is prohibited and shall be suitably marked at each end of each length indicating compliance with American National Standard Institute specifications. Aluminum alloy pipe shall be protected against external corrosion when it is in contact with dissimilar metals other than galvanized steel, or its location is subject to repeated wetting by such liquids as water (except rain water), detergents, sewage, or leaking from other piping, or it passes through flooring, plaster, masonry, or insulation. Galvanized sheet steel or pipe, galvanized inside and out, may be considered suitable protection. The maximum nominal pipe size for aluminum pipe shall be three-fourths inch and shall not be used for pressures exceeding 20 p.s.i.g. Aluminum alloy pipe shall not be installed within six inches of the ground.

(i) Vapor piping with operating pressures not exceeding 125 p.s.i.g. shall be suitable for a working pressure of at least 125 p.s.i.g. Pipe shall be at least Schedule 40 ASTM

A-53-69, Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal.

(ii) Vapor piping with operating pressures over 125 p.s.i.g. and all liquid piping shall be suitable for a working pressure of at least 250 p.s.i.g. Pipe shall be at least Schedule 80 if joints are threaded or threaded and back welded. At least Schedule 40 (ASTM A-53-1969 Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal) shall be used if joints are welded, or welded and flanged.

(b) Tubing shall be seamless and of copper, brass, steel, or aluminum alloy. Copper tubing shall be of Type K or L or equivalent as covered in the Specification for Seamless Copper Water Tube, ANSI H23.1-1970 (ASTM B88-1969). Aluminum alloy tubing shall be of Type A or B or equivalent as covered in Specification ASTM B210-1968 and shall be suitably marked every eighteen inches indicating compliance with ASTM specifications. The minimum nominal wall thickness of copper tubing and aluminum alloy tubing shall be as specified in Table H-24 and Table H-25.

TABLE H-24

WALL THICKNESS OF COPPER TUBING[1]

Note: The standard size by which tube is designated is one-eighth-inch smaller than its nominal outside diameter.

Standard size (inches)	Nominal O.D. (inches)	Nominal wall thickness (inches)	
		Type K	Type L
1/4	0.375	0.035	0.030
3/8	0.500	0.049	0.035
1/2	0.625	0.049	0.040
5/8	0.750	0.049	0.042
3/4	0.875	0.065	0.045
1	1.125	0.065	0.050
1 1/4	1.375	0.065	0.055
1 1/2	1.625	0.072	0.060
2	2.125	0.083	0.070

[1]Based on data in Specification for Seamless Copper Water Tubing, ANSI H23.1-1970 (ASTM B-88-69).

TABLE H-25

WALL THICKNESS OF ALUMINUM ALLOY TUBING[1]

Outside diameter (inches)	Nominal wall thickness (inches)	
	Type A	Type B
3/8	0.035	0.049
1/2	0.035	0.049
5/8	0.042	0.049
3/4	0.049	0.058

[1]Based on data in Standard Specification for Aluminum-Alloy Drawn Seamless Coiled Tubes for Special Purpose Applications, ASTM B210-68.

Aluminum alloy tubing shall be protected against external corrosion when it is in contact with dissimilar metals other than galvanized steel, or its location is subject to repeated wetting by liquids such as water (except rainwater), detergents, sewage, or leakage from other piping, or it passes through flooring, plaster, masonry, or insulation. Galvanized sheet steel or pipe, galvanized inside and out, may be considered suitable protection. The maximum outside diameter for aluminum alloy tubing shall be three-fourths inch and shall not be used for pressures exceeding 20 p.s.i.g. Aluminum alloy tubing shall not be installed within six inches of the ground.

(c) In systems where the gas in liquid form without pressure reduction enters the building, only heavy walled seamless brass or copper tubing with an internal diameter not greater than three thirty-seconds inch, and a wall thickness of not less than three sixty-fourths inch shall be used. This requirement shall not apply to research and experimental laboratories, buildings, or separate fire divisions of buildings used exclusively for housing internal combustion engines, and to commercial gas plants or bulk stations where containers are charged, nor to industrial vaporizer buildings, nor to buildings, structures, or equipment under construction or undergoing major renovation.

(d) Pipe joints may be screwed, flanged, welded, soldered, or brazed with a material having a melting point exceeding 1,000°F. Joints on seamless copper, brass, steel, or aluminum alloy gas tubing shall be made by means of approved gas tubing fittings, or soldered or brazed with a material having a melting point exceeding 1,000°F.

(e) For operating pressures of 125 p.s.i.g. or less, fittings shall be designed for a pressure of at least 125 p.s.i.g. For operating pressures above 125 p.s.i.g., fittings shall be designed for a minimum of 250 p.s.i.g.

(f) The use of threaded cast iron pipe fittings such as ells, tees, crosses, couplings, and unions is prohibited. Aluminum alloy fittings shall be used with aluminum alloy pipe and tubing. Insulated fittings shall be used where aluminum alloy pipe or tubing connects with a dissimilar metal.

(g) Strainers, regulators, meters, compressors, pumps, etc., are not to be considered as pipe fittings. This does not prohibit the use of malleable, nodular, or higher strength gray iron for such equipment.

(h) All materials such as valve seats, packing, gaskets, diaphragms, etc., shall be of such quality as to be resistant to the action of liquefied petroleum gas under the service conditions to which they are subjected.

(i) All piping, tubing, or hose shall be tested after assembly and proved free from leaks at not less than normal operating pressures. After installation, piping and tubing of all domestic and commercial systems shall be tested and proved free of leaks using a manometer or equivalent device that will indicate a drop in pressure. Test shall not be made with a flame.

(j) Provision shall be made to compensate for expansion, contraction, jarring, and vibration, and for settling. This may be accomplished by flexible connections.

(k) Piping outside buildings may be buried, above ground, or both, but shall be well supported and protected against physical damage. Where soil conditions warrant, all piping shall be protected against corrosion. Where condensation may occur, the piping shall be pitched back to the container, or suitable means shall be provided for revaporization of the condensate.

(9) Hose specifications.

(a) Hose shall be fabricated of materials that are resistant to the action of LP-gas in the liquid and vapor

phases. If wire braid is used for reinforcing the hose, it shall be of corrosion-resistant material such as stainless steel.

(b) Hose subject to container pressure shall be marked "LP-gas" or "LPG" at not greater than ten-foot intervals.

(c) Hose subject to container pressure shall be designed for a bursting pressure of not less than 1,250 p.s.i.g.

(d) Hose subject to container pressure shall have its correctness as to design construction and performance determined by being listed (see WAC 296-24-47501(15)).

(e) Hose connections subject to container pressure shall be capable of withstanding, without leakage, a test pressure of not less than 500 p.s.i.g.

(f) Hose and hose connections on the low-pressure side of the regulator or reducing valve shall be designed for a bursting pressure of not less than 125 p.s.i.g. or five times the set pressure of the relief devices protecting that portion of the system, whichever is higher.

(g) Hose may be used on the low-pressure side of regulators to connect to other than domestic and commercial gas appliances under the following conditions:

(i) The appliances connected with hose shall be portable and need a flexible connection.

(ii) For use inside buildings the hose shall be of minimum practical length, but shall not exceed six feet except as provided in WAC 296-24-47507 (5)(a)(vii) and shall not extend from one room to another, nor pass through any walls, partitions, ceilings, or floors. Such hose shall not be concealed from view or used in a concealed location. For use outside of buildings, the hose may exceed this length but shall be kept as short as practical.

(iii) The hose shall be approved and shall not be used where it is likely to be subjected to temperatures above 125°F. The hose shall be securely connected to the appliance and the use of rubber slip ends shall not be permitted.

(iv) The shutoff valve for an appliance connected by hose shall be in the metal pipe or tubing and not at the appliance end of the hose. When shutoff valves are installed close to each other, precautions shall be taken to prevent operation of the wrong valve.

(v) Hose used for connecting to wall outlets shall be protected from physical damage.

(10) Safety devices.

(a) Every container except those constructed in accordance with DOT specifications and every vaporizer (except motor fuel vaporizers and except vaporizers described in subsection (11)(b)(iii) of this section and WAC 296-24-47509 (4)(e)(i)) whether heated by artificial means or not, shall be provided with one or more safety relief valves of spring-loaded or equivalent type. These valves shall be arranged to afford free vent to the outer air with discharge not less than five feet horizontally away from any opening into the building which is below such discharge. The rate of discharge shall be in accordance with the requirements of (b) or (d) of this subsection in the case of vaporizers.

(b) Minimum required rate of discharge in cubic feet per minute of air at one hundred twenty percent of the maximum permitted start to discharge pressure for safety relief valves to be used on containers other than those constructed in accordance with DOT specification shall be as follows:

Surface area (sq. ft.)	Flow rate CFM air
20 or less	626
25	751
30	872
35	990
40	1,100
45	1,220
50	1,330
55	1,430
60	1,540
65	1,640
70	1,750
75	1,850
80	1,950
85	2,050
90	2,150
95	2,240
100	2,340
105	2,440
110	2,530
115	2,630
120	2,720
125	2,810
130	2,900
135	2,990
140	3,080
145	3,170
150	3,260
155	3,350
160	3,440
165	3,530
170	3,620
175	3,700
180	3,790
185	3,880
190	3,960
195	4,050
200	4,130
210	4,300
220	4,470
230	4,630
240	4,800
250	4,960
260	5,130
270	5,290
280	5,450
290	5,610
300	5,760
310	5,920
320	6,080
330	6,230
340	6,390
350	6,540
360	6,690
370	6,840
380	7,000
390	7,150
400	7,300
450	8,040
500	8,760
550	9,470
600	10,170
650	10,860
700	11,550
750	12,220
800	12,880
850	13,540
900	14,190
950	14,830
1,000	15,470
1,050	16,100
1,100	16,720
1,150	17,350
1,200	17,960

1,250	18,570
1,300	19,180
1,350	19,780
1,400	20,380
1,450	20,980
1,500	21,570
1,550	22,160
1,600	22,740
1,650	23,320
1,700	23,900
1,750	24,470
1,800	25,050
1,850	25,620
1,900	26,180
1,950	26,750
2,000	27,310

Surface area = total outside surface area of container in square feet.

(c) When the surface area is not stamped on the nameplate or when the marking is not legible, the area can be calculated by using one of the following formulas:

(i) Cylindrical container with hemispherical heads:

Area = Overall length x outside diameter x 3.1416.

(ii) Cylindrical container with other than hemispherical heads:

Area = (Overall length + 0.3 outside diameter) x outside diameter x 3.1416.

Note: This formula is not exact, but will give results within the limits of practical accuracy for the sole purpose of sizing relief valves.

(iii) Spherical container:

Area = Outside diameter squared x 3.1416.

Flow rate-CFM air = Required flow capacity in cubic feet per minute of air at standard conditions, 60°F and atmospheric pressure (14.7 p.s.i.a.).

The rate of discharge may be interpolated for intermediate values of surface area. For containers with total outside surface area greater than two thousand square feet, the required flow rate can be calculated using the formula, flow rate-CFM air = $53.632\ A^{0.82}$.

A = Total outside surface area of the container in square feet.

Valves not marked "air" have flow rate marking in cubic feet per minute of liquefied petroleum gas. These can be converted to ratings in cubic feet per minute of air by multiplying the liquefied petroleum gas ratings by factors listed below. Air flow ratings can be converted to ratings in cubic feet per minute of liquefied petroleum gas by dividing the air ratings by the factors listed below.

AIR CONVERSION FACTORS

Container type	100	125	150	175	200
Air conversion factor	1.162	1.142	1.113	1.078	1.010

(d) Minimum required rate of discharge for safety relief valves for liquefied petroleum gas vaporizers (steam heated, water heated, and direct fired).

The minimum required rate of discharge for safety relief valves shall be determined as follows:

(i) Obtain the total surface area by adding the surface area of vaporizer shell in square feet directly in contact with LP-gas and the heat exchanged surface area in square feet directly in contact with LP-gas.

(ii) Obtain the minimum required rate of discharge in cubic feet of air per minute, at 60°F and 14.7 p.s.i.a. from (b) of this subsection, for this total surface area.

(e) Container and vaporizer safety relief valves shall be set to start-to-discharge, with relation to the design pressure of the container, in accordance with Table H-26.

TABLE H-26

Containers	Minimum (percent)	Maximum (percent)
ASME Code; Par. U-68, U-69—1949 and earlier editions	110	[1]125
ASME Code; Par. U-200, U-201—1949 edition	88	[1]100
ASME Code—1950, 1952, 1956, 1959, 1962, 1965 and 1968 (Division I) editions	88	[1]100
API—ASME Code—all editions	88	[1]100
DOT—As prescribed in 49 CFR Chapter I		

[1]Manufacturers of safety relief valves are allowed a plus tolerance not exceeding ten percent of the set pressure marked on the valve.

(f) Safety relief devices used with systems employing containers other than those constructed according to DOT specifications shall be so constructed as to discharge at not less than the rates shown in (b) of this subsection, before the pressure is in excess of one hundred twenty percent of the maximum (not including the ten percent referred to in (e) of this subsection) permitted start to discharge pressure setting of the device.

(g) In certain locations sufficiently sustained high temperatures prevail which require the use of a lower vapor pressure product to be stored or the use of a higher designed pressure vessel in order to prevent the safety valves opening as the result of these temperatures. As an alternative the tanks may be protected by cooling devices such as by spraying, by shading, or other effective means.

(h) Safety relief valves shall be arranged so that the possibility of tampering will be minimized. If pressure setting or adjustment is external, the relief valves shall be provided with approved means for sealing adjustment.

(i) Shutoff valves shall not be installed between the safety relief devices and the container, or the equipment or piping to which the safety relief device is connected except that a shutoff valve may be used where the arrangement of

this valve is such that full required capacity flow through the safety relief device is always afforded.

(j) Safety relief valves shall have direct communication with the vapor space of the container at all times.

(k) Each container safety relief valve used with systems covered by WAC 296-24-47509, 296-24-47511, 296-24-47515 and 296-24-47517, except as provided in WAC 296-24-47511 (3)(c) shall be plainly and permanently marked with the following: "Container type" of the pressure vessel on which the valve is designed to be installed; the pressure in p.s.i.g. at which the valve is set to discharge; the actual rate of discharge of the valve in cubic feet per minute of air at 60°F and 14.7 p.s.i.a.; and the manufacturer's name and catalog number, for example: T200-250-4050 AIR—indicating that the valve is suitable for use on a Type 200 container, that it is set to start to discharge at 250 p.s.i.g.; and that its rate of discharge is four thousand fifty cubic feet per minute of air as determined in (b) of this subsection.

(l) Safety relief valve assemblies, including their connections, shall be of sufficient size so as to provide the rate of flow required for the container on which they are installed.

(m) A hydrostatic relief valve shall be installed between each pair of shutoff valves on liquefied petroleum gas liquid piping so as to relieve into a safe atmosphere. The start-to-discharge pressure setting of such relief valves shall not be in excess of 500 p.s.i.g. The minimum setting on relief valves installed in piping connected to other than DOT containers shall not be lower than one hundred forty percent of the container relief valve setting and in piping connected to DOT containers not lower than 400 p.s.i.g. Such a relief valve should not be installed in the pump discharge piping if the same protection can be provided by installing the relief valve in the suction piping. The start-to-discharge pressure setting of such a relief valve, if installed on the discharge side of a pump, shall be greater than the maximum pressure permitted by the recirculation device in the system.

(n) The discharge from any safety relief device shall not terminate in or beneath any building, except relief devices covered by subsection (6)(a)(i) through (vi) of this section, or WAC 296-24-47507 (4)(a) or (5).

(o) Container safety relief devices and regulator relief vents shall be located not less than five feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(11) Vaporizer and housing.

(a) Indirect fired vaporizers utilizing steam, water, or other heating medium shall be constructed and installed as follows:

(i) Vaporizers shall be constructed in accordance with the requirements of subsection (3)(a) through (c) of this section and shall be permanently marked as follows:

(A) With the code marking signifying the specifications to which the vaporizer is constructed.

(B) With the allowable working pressure and temperature for which the vaporizer is designed.

(C) With the sum of the outside surface area and the inside heat exchange surface area expressed in square feet.

(D) With the name or symbol of the manufacturer.

(ii) Vaporizers having an inside diameter of six inches or less exempted by the ASME Unfired Pressure Vessel Code, Section VIII of the ASME Boiler and Pressure Vessel Code—1968 shall have a design pressure not less than 250 p.s.i.g. and need not be permanently marked.

(iii) Heating or cooling coils shall not be installed inside a storage container.

(iv) Vaporizers may be installed in buildings, rooms, sheds, or lean-tos used exclusively for gas manufacturing or distribution, or in other structures of light, noncombustible construction or equivalent, well ventilated near the floor line and roof.

When vaporizing and/or mixing equipment is located in a structure or building not used exclusively for gas manufacturing or distribution, either attached to or within such a building, such structure or room shall be separated from the remainder of the building by a wall designed to withstand a static pressure of at least one hundred pounds per square foot. This wall shall have no openings or pipe or conduit passing through it. Such structure or room shall be provided with adequate ventilation and shall have a roof or at least one exterior wall of lightweight construction.

(v) Vaporizers shall have, at or near the discharge, a safety relief valve providing an effective rate of discharge in accordance with subsection (10)(d) of this section, except as provided in WAC 296-24-47509 (4)(e)(i).

(vi) The heating medium lines into and leaving the vaporizer shall be provided with suitable means for preventing the flow of gas into the heat systems in the event of tube rupture in the vaporizer. Vaporizers shall be provided with suitable automatic means to prevent liquid passing through the vaporizers to the gas discharge piping.

(vii) The device that supplies the necessary heat for producing steam, hot water, or other heating medium may be installed in a building, compartment, room, or lean-to which shall be ventilated near the floorline and roof to the outside. The device location shall be separated from all compartments or rooms containing liquefied petroleum gas vaporizers, pumps, and central gas mixing devices by a wall designed to withstand a static pressure of at least one hundred pounds per square foot. This wall shall have no openings or pipes or conduit passing through it. This requirement does not apply to the domestic water heaters which may supply heat for a vaporizer in a domestic system.

(viii) Gas-fired heating systems supplying heat exclusively for vaporization purposes shall be equipped with automatic safety devices to shut off the flow of gas to main burners, if the pilot light should fail.

(ix) Vaporizers may be an integral part of a fuel storage container directly connected to the liquid section or gas section or both.

(x) Vaporizers shall not be equipped with fusible plugs.

(xi) Vaporizer houses shall not have unprotected drains to sewers or sump pits.

(b) Atmospheric vaporizers employing heat from the ground or surrounding air shall be installed as follows:

(i) Buried underground, or

(ii) Located inside the building close to a point at which pipe enters the building provided the capacity of the unit does not exceed one quart.

(iii) Vaporizers of less than one quart capacity heated by the ground or surrounding air, need not be equipped with safety relief valves provided that adequate tests demonstrate that the assembly is safe without safety relief valves.

(c) Direct gas-fired vaporizers shall be constructed, marked, and installed as follows:

(i) In accordance with the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code—1968 that are applicable to the maximum working conditions for which the vaporizer is designed.

(ii) With the name of the manufacturer; rated BTU input to the burner; the area of the heat exchange surface in square feet; the outside surface of the vaporizer in square feet; and the maximum vaporizing capacity in gallons per hour.

(iii) Vaporizers may be connected to the liquid section or the gas section of the storage container, or both; but in any case there shall be at the container a manually operated valve in each connection to permit completely shutting off when desired, of all flow of gas or liquid from container to vaporizer.

(iv) Vaporizers with capacity not exceeding thirty-five gallons per hour shall be located at least five feet from container shutoff valves. Vaporizers having capacity of more than thirty-five gallons but not exceeding one hundred gallons per hour shall be located at least ten feet from the container shutoff valves. Vaporizers having a capacity greater than one hundred gallons per hour shall be located at least fifteen feet from container shutoff valves.

(v) Vaporizers may be installed in buildings, rooms, housings, sheds, or lean-tos used exclusively for vaporizing or mixing of liquefied petroleum gas. Vaporizing housing structures shall be of noncombustible construction, well ventilated near the floorline and the highest point of the roof. When vaporizer and/or mixing equipment is located in a structure or room attached to or within a building, such structure or room shall be separated from the remainder of the building by a wall designed to withstand a static pressure of at least one hundred pounds per square foot. This wall shall have no openings or pipes or conduit passing through it. Such structure or room shall be provided with adequate ventilation, and shall have a roof or at least one exterior wall of lightweight construction.

(vi) Vaporizers shall have at or near the discharge, a safety relief valve providing an effective rate of discharge in accordance with subsection (10)(d) of this section. The relief valve shall be so located as not to be subjected to temperatures in excess of 140°F.

(vii) Vaporizers shall be provided with suitable automatic means to prevent liquid passing from the vaporizer to the gas discharge piping of the vaporizer.

(viii) Vaporizers shall be provided with means for manually turning off the gas to the main burner and pilot.

(ix) Vaporizers shall be equipped with automatic safety devices to shut off the flow of gas to main burners if the pilot light should fail. When the flow through the pilot exceeds 2,000 B.T.U. per hour, the pilot also shall be equipped with an automatic safety device to shut off the flow of gas to the pilot should the pilot flame be extinguished.

(x) Pressure regulating and pressure reducing equipment if located within ten feet of a direct fired vaporizer shall be separated from the open flame by a substantially airtight noncombustible partition or partitions.

(xi) Except as provided in (c)(v) of this subsection, the following minimum distances shall be maintained between direct fired vaporizers and the nearest important building or group of buildings or line of adjoining property which may be built upon:

(A) Ten feet for vaporizers having a capacity of fifteen gallons per hour or less vaporizing capacity.

(B) Twenty-five feet for vaporizers having a vaporizing capacity of sixteen to one hundred gallons per hour.

(C) Fifty feet for vaporizers having a vaporizing capacity exceeding one hundred gallons per hour.

(xii) Direct fired vaporizers shall not raise the product pressure above the design pressure of the vaporizer equipment nor shall they raise the product pressure within the storage container above the pressure shown in the second column of Table H-31.(See WAC 296-24-47509.)

(xiii) Vaporizers shall not be provided with fusible plugs.

(xiv) Vaporizers shall not have unprotected drains to sewers or sump pits.

(d) Direct gas-fired tank heaters, shall be constructed and installed as follows:

(i) Direct gas-fired tank heaters, and tanks to which they are applied, shall only be installed above ground.

(ii) Tank heaters shall be permanently marked with the name of the manufacturer, the rated B.T.U. input to the burner, and the maximum vaporizing capacity in gallons per hour.

Note: Tank heaters may be an integral part of a fuel storage container directly connected to the container liquid section, or vapor section, or both.

(iii) Tank heaters shall be provided with a means for manually turning off the gas to the main burner and pilot.

(iv) Tank heaters shall be equipped with an automatic safety device to shut off the flow of gas to main burners, if the pilot light should fail. When flow through pilot exceeds 2,000 B.T.U. per hour, the pilot also shall be equipped with an automatic safety device to shut off the flow of gas to the pilot should the pilot flame be extinguished.

(v) Pressure regulating and pressure reducing equipment if located within ten feet of a direct fired tank heater shall be separated from the open flame by a substantially airtight noncombustible partition.

(vi) The following minimum distances shall be maintained between a storage tank heated by a direct fired tank heater and the nearest important building or group of buildings or line of adjoining property which may be built upon:

(A) Ten feet for storage containers of less than five hundred gallons water capacity.

(B) Twenty-five feet for storage containers of five hundred to one thousand two hundred gallons water capacity.

(C) Fifty feet for storage containers of over one thousand two hundred gallons water capacity.

(vii) No direct fired tank heater shall raise the product pressure within the storage container over seventy-five percent of the pressure set out in the second column of Table H-31.(See WAC 296-24-47509.)

(e) The vaporizer section of vaporizer-burners used for dehydrators or dryers shall be located outside of buildings; they shall be constructed and installed as follows:

(i) Vaporizer-burners shall have a minimum design pressure of 250 p.s.i.g. with a factor of safety of five.

(ii) Manually operated positive shutoff valves shall be located at the containers to shut off all flow to the vaporizer-burners.

(iii) Minimum distances between storage containers and vaporizer-burners shall be as follows:

Water capacity per container (gallons)	Minimum distances (feet)
Less than 501	10
501 to 2,000	25
Over 2,000	50

(iv) The vaporizer section of vaporizer-burners shall be protected by a hydrostatic relief valve. The relief valve shall be located so as not to be subjected to temperatures in excess of 140°F. The start-to-discharge pressure setting shall be such as to protect the components involved, but not less than 250 p.s.i.g. The discharge shall be directed upward and away from component parts of the equipment and away from operating personnel.

(v) Vaporizer-burners shall be provided with means for manually turning off the gas to the main burner and pilot.

(vi) Vaporizer-burners shall be equipped with automatic safety devices to shut off the flow of gas to the main burner and pilot in the event the pilot is extinguished.

(vii) Pressure regulating and control equipment shall be located or protected so that the temperatures surrounding this equipment shall not exceed 140°F except that equipment components may be used at higher temperatures if designed to withstand such temperatures.

(viii) Pressure regulating and control equipment when located downstream of the vaporizer shall be designed to withstand the maximum discharge temperature of the vapor.

(ix) The vaporizer section of vaporizer-burners shall not be provided with fusible plugs.

(x) Vaporizer coils or jackets shall be made of ferrous metal or high temperature alloys.

(xi) Equipment utilizing vaporizer-burners shall be equipped with automatic shutoff devices upstream and downstream of the vaporizer section connected so as to operate in the event of excessive temperature, flame failure, and, if applicable, insufficient airflow.

(12) Filling densities.

(a) The "filling density" is defined as the percent ratio of the weight of the gas in a container to the weight of water the container will hold at 60°F. All containers shall be filled according to the filling densities shown in Table H-27.

TABLE H-27

MAXIMUM PERMITTED FILLING DENSITY

Specific gravity at 60°F (15.6°C)	Above ground containers: 0 to 1,200 U.S. gals. (1,000 imp. gal. 4,550 liters) total water cap.	Above ground containers: Over 1,200 U.S. gals. (1,000 imp. gals. 4,550 liters) total water cap.	Underground containers, all capacities
	Percent	Percent	Percent
0.496-0.503	41	44	45
.504-.510	42	45	46
.511-.519	43	46	47
.520-.527	44	47	48
.528-.536	45	48	49
.537-.544	46	49	50
.545-.552	47	50	51
.553-.560	48	51	52
.561-.568	49	52	53
.569-.576	50	53	54
.577-.584	51	54	55
.585-.592	52	55	56
.593-.600	53	56	57

(b) Except as provided in (c) of this subsection, any container including mobile cargo tanks and portable tank containers regardless of size or construction, shipped under DOT jurisdiction or constructed in accordance with 49 CFR Chapter I specifications shall be charged according to 49 CFR Chapter I requirements.

(c) Portable containers not subject to DOT jurisdiction (such as, but not limited to, motor fuel containers on industrial and lift trucks, and farm tractors covered in subsection (5) of this section, or containers recharged at the installation) may be filled either by weight, or by volume using a fixed length dip tube gaging device.

(13) LP-gas in buildings.

(a) Vapor shall be piped into buildings at pressures in excess of 20 p.s.i.g. only if the buildings or separate areas thereof,

(i) Are constructed in accordance with this section;

(ii) Are used exclusively to house equipment for vaporization, pressure reduction, gas mixing, gas manufacturing, or distribution, or to house internal combustion engines, industrial processes, research and experimental laboratories, or equipment and processes using such gas and having similar hazard;

(iii) Buildings, structures, or equipment under construction or undergoing major renovation.

(b) Liquid may be permitted in buildings as follows:

(i) Buildings, or separate areas of buildings, used exclusively to house equipment for vaporization, pressure reduction, gas mixing, gas manufacturing, or distribution, or to house internal combustion engines, industrial processes, research and experimental laboratories, or equipment and processes using such gas and having similar hazard; and

when such buildings, or separate areas thereof are constructed in accordance with this section.

(ii) Buildings, structures, or equipment under construction or undergoing major renovation provided the temporary piping meets the following conditions:

(A) Liquid piping inside the building shall conform to the requirements of subsection (8) of this section, and shall not exceed three-fourths iron pipe size. Copper tubing with an outside diameter of three-fourths inch or less may be used provided it conforms to Type K of Specifications for Seamless Water Tube, ANSI H23.1-1970 (ASTM B88-1969) (see WAC 296-24-47505 Table H-24).All such piping shall be protected against construction hazards. Liquid piping inside buildings shall be kept to a minimum. Such piping shall be securely fastened to walls or other surfaces so as to provide adequate protection from breakage and so located as to subject the liquid line to lowest ambient temperatures.

(B) A shutoff valve shall be installed in each intermediate branch line where it takes off the main line and shall be readily accessible. A shutoff valve shall also be placed at the appliance end of the intermediate branch line. Such shutoff valve shall be upstream of any flexible connector used with the appliance.

(C) Suitable excess flow valves shall be installed in the container outlet line supplying liquid LP-gas to the building. A suitable excess flow valve shall be installed immediately downstream of each shutoff valve. Suitable excess flow valves shall be installed where piping size is reduced and shall be sized for the reduced size piping.

(D) Hydrostatic relief valves shall be installed in accordance with subsection (10)(m) of this section.

(E) The use of hose to carry liquid between the container and the building or at any point in the liquid line, except at the appliance connector, shall be prohibited.

(F) Where flexible connectors are necessary for appliance installation, such connectors shall be as short as practicable and shall comply with subsection (8)(b) or (9) of this section.

(G) Release of fuel when any section of piping or appliances is disconnected shall be minimized by either of the following methods:

(I) Using an approved automatic quick-closing coupling (a type closing in both directions when coupled in the fuel line), or

(II) Closing the valve nearest to the appliance and allowing the appliance to operate until the fuel in the line is consumed.

(III) Portable containers shall not be taken into buildings except as provided in subsection (6)(a) of this section.

(14) Transfer of liquids. The employer shall assure that:

(a) At least one attendant shall remain close to the transfer connection from the time the connections are first made until they are finally disconnected, during the transfer of the product.

(b) Containers shall be filled or used only upon authorization of the owner.

(c) Containers manufactured in accordance with specifications of 49 CFR Part 178 and authorized by 49 CFR Chapter 1 as a "single trip" or "nonrefillable container" shall not be refilled or reused in LP-gas service.

(d) Gas or liquid shall not be vented to the atmosphere to assist in transferring contents of one container to another, except as provided in WAC 296-24-47511 (5)(d) and except that this shall not preclude the use of listed pump utilizing LP-gas in the vapor phase as a source of energy and venting such gas to the atmosphere at a rate not to exceed that from a No. 31 drill size opening and provided that such venting and liquid transfer shall be located not less than fifty feet from the nearest important building.

(e) Filling of fuel containers for industrial trucks or motor vehicles from industrial bulk storage containers shall be performed not less than ten feet from the nearest important masonry-walled building or not less than twenty-five feet from the nearest important building or other construction and, in any event, not less than twenty-five feet from any building opening.

(f) Filling of portable containers, containers mounted on skids, fuel containers on farm tractors, or similar applications, from storage containers used in domestic or commercial service, shall be performed not less than fifty feet from the nearest important building.

(g) The filling connection and the vent from the liquid level gages in containers, filled at point of installation, shall not be less than ten feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(h) Fuel supply containers shall be gaged and charged only in the open air or in buildings especially provided for that purpose.

(i) The maximum vapor pressure of the product at 100°F which may be transferred into a container shall be in accordance with WAC 296-24-47509(2) and 296-24-47511(3). (For DOT containers use DOT requirements.)

(j) Marketers and users shall exercise precaution to assure that only those gases for which the system is designed, examined, and listed, are employed in its operation, particularly with regard to pressures.

(k) Pumps or compressors shall be designed for use with LP-gas. When compressors are used they shall normally take suction from the vapor space of the container being filled and discharge to the vapor space of the container being emptied.

(l) Pumping systems, when equipped with a positive displacement pump, shall include a recirculating device which shall limit the differential pressure on the pump under normal operating conditions to the maximum differential pressure rating of the pump. The discharge of the pumping system shall be protected so that pressure does not exceed 350 p.s.i.g. If a recirculation system discharges into the supply tank and contains a manual shutoff valve, an adequate secondary safety recirculation system shall be incorporated which shall have no means of rendering it inoperative. Manual shutoff valves in recirculation systems shall be kept open except during an emergency or when repairs are being made to the system.

(m) When necessary, unloading piping or hoses shall be provided with suitable bleeder valves for relieving pressure before disconnection.

(n) Agricultural air moving equipment, including crop dryers, shall be shut down when supply containers are being filled unless the air intakes and sources of ignition on the equipment are located fifty feet or more from the container.

(o) Agricultural equipment employing open flames or equipment with integral containers, such as flame cultivators,

weed burners, and, in addition, tractors, shall be shut down during refueling.

(15) Tank car or transport truck loading or unloading points and operations.

(a) The track of tank car siding shall be relatively level.

(b) A "tank car connected" sign, as covered by DOT rules, shall be installed at the active end or ends of the siding while the tank car is connected.

(c) While cars are on side track for loading or unloading, the wheels at both ends shall be blocked on the rails.

(d) The employer shall insure that an employee is in attendance at all times while the tank car, cars, or trucks are being loaded or unloaded.

(e) A backflow check valve, excess-flow valve, or a shutoff valve with means of remote closing, to protect against uncontrolled discharge of LP-gas from storage tank piping shall be installed close to the point where the liquid piping and hose or swing joint pipe is connected.

(f) Except as provided in (g) of this subsection, when the size (diameter) of the loading or unloading hoses and/or piping is reduced below the size of the tank car or transport truck loading or unloading connections, the adaptors to which lines are attached shall be equipped with either a backflow check valve, a properly sized excess flow valve, or shutoff valve with means of remote closing, to protect against uncontrolled discharge from the tank car or transport truck.

(g) The requirement of (f) of this subsection shall not apply if the tank car or transport is equipped with a quick-closing internal valve that can be remotely closed.

(h) The tank car or transport truck loading or unloading point shall be located with due consideration to the following:

(i) Proximity to railroads and highway traffic.

(ii) The distance of such unloading or loading point from adjacent property.

(iii) With respect to buildings on installer's property.

(iv) Nature of occupancy.

(v) Topography.

(vi) Type of construction of buildings.

(vii) Number of tank cars or transport trucks that may be safely loaded or unloaded at one time.

(viii) Frequency of loading or unloading.

(i) Where practical, the distance of the unloading or loading point shall conform to the distances in subsection (6)(b) of this section.

(16) Instructions. Personnel performing installation, removal, operation, and maintenance work shall be properly trained in such function.

(17) Electrical equipment and other sources of ignition.

(a) Electrical equipment and wiring shall be of a type specified by and shall be installed according to chapter 296-24 WAC Part L, for ordinary locations except that fixed electrical equipment in classified areas shall comply with subsection (18) of this section.

(b) Open flames or other sources of ignition shall not be permitted in vaporizer rooms (except those housing direct-fired vaporizers), pumphouses, container charging rooms or other similar locations. Direct-fired vaporizers shall not be permitted in pumphouses or container charging rooms.

Note: Liquefied petroleum gas storage containers do not require lightning protection. Since liquefied petroleum gas is contained in a closed system of piping and equipment, the system need not be electrically conductive or electrically bonded for protection against static electricity (see NFPA No. 77-1972-1973, Recommended Practice for Static Electricity).

(c) Open flames (except as provided for in (b) of this subsection), cutting or welding, portable electric tools, and extension lights capable of igniting LP-gas, shall not be permitted within classified areas specified in Table H-28 of this section unless the LP-gas facilities have been freed of all liquid and vapor, or special precautions observed under carefully controlled conditions.

(18) Fixed electrical equipment in classified areas. Fixed electrical equipment and wiring installed within classified areas shall comply with Table H-28 of this section and shall be installed according to chapter 296-24 WAC Part L. This provision does not apply to fixed electrical equipment at residential or commercial installations of LP-gas systems or to systems covered by WAC 296-24-47511 or 296-24-47515.

(19) Liquid-level gaging device.

(a) Each container manufactured after December 31, 1965, and filled on a volumetric basis shall be equipped with a fixed liquid-level gage to indicate the maximum permitted filling level as provided in (e) of this subsection. Each container manufactured after December 31, 1969, shall have permanently attached to the container adjacent to the fixed level gage a marking showing the percentage full that will be shown by that gage. When a variable liquid-level gage is also provided, the fixed liquid-level gage will also serve as a means for checking the variable gage. These gages shall be used in charging containers as required in subsection (12) of this section.

(b) All variable gaging devices shall be arranged so that the maximum liquid level for butane, for a fifty-fifty mixture of butane and propane, and for propane, to which the container may be charged is readily determinable. The markings indicating the various liquid levels from empty to full shall be on the system nameplate or gaging device or part may be on the system nameplate and part on the gaging device. Dials of magnetic or rotary gages shall show whether they are for cylindrical or spherical containers and whether for aboveground or underground service. The dials of gages intended for use only on aboveground containers of over one thousand two hundred gallons water capacity shall be so marked.

(c) Gaging devices that require bleeding of the product to the atmosphere, such as the rotary tube, fixed tube, and slip tube, shall be designed so that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with excess flow valve.

(d) Gaging devices shall have a design working pressure of at least 250 p.s.i.g.

(e) Length of tube or position of fixed liquid-level gage shall be designed to indicate the maximum level to which the container may be filled for the product contained. This level shall be based on the volume of the product at 40°F at its maximum permitted filling density for aboveground containers and at 50°F for underground containers. The employer shall calculate the filling point for which the fixed liquid level gage shall be designed according to the method in this subsection.

TABLE H-28

Part	Location	Extent of classified area[1]	Equipment shall be suitable for Class I, Group D[2]
A	Storage containers other than DOT cylinders.	Within 15 feet in all directions from connections, except connections otherwise covered in Table H-28.	Division 2.
B	Tank vehicle and tank car loading and unloading.[3]	Within 5 feet in all directions from connections regularly made or disconnected for product transfer.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator of the sphere and grade. (See Figure H-1.)	Division 2.
C	Gage vent openings other than those on DOT cylinders.	Within 5 feet in all directions from point of discharge.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from point of discharge.	Division 2.
D	Relief valve discharge other than those on DOT cylinders.	Within direct path of discharge.	Division 1. NOTE—Fixed electrical equipment should preferably not be installed.
		Within 5 feet in all directions from point of discharge.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from point of discharge except within the direct path of discharge.	Division 2.
E	Pumps, compressors, gas-air mixers and vaporizers other than direct fired.		
	Indoors without ventilation	Entire room and any adjacent room not separated by a gastight partition.	Division 1.
		Within 15 feet of the exterior side of any exterior wall or roof that is not vaportight or within 15 feet of any exterior opening.	Division 2.
	Indoors with adequate ventilation.[4]	Entire room and any adjacent room not separated by a gastight partition.	Division 2.
	Outdoors in open air at or abovegrade.	Within 15 feet in all directions from this equipment and within the cylindrical volume between the horizontal equator of the sphere and grade. See Figure H-1.	Division 2.
F	Service station dispensing units.	Entire space within dispenser enclosure, and 18 inches horizontally from enclosure exterior up to an elevation 4 ft. above dispenser base. Entire pit or open space beneath dispenser.	Division 1.
		Up to 18 inches abovegrade within 20 ft. horizontally from any edge of enclosure.	Division 2.
		NOTE: For pits within this area, see Part F of this table.	
G	Pits or trenches containing or located beneath LP-gas valves, pumps, compressors, regulators, and similar equipment.		
	Without mechanical ventilation.	Entire pit or trench	Division 1.
		Entire room and any adjacent room not separated by a gastight partition.	Division 2.
		Within 15 feet in all directions from pit or trench when located outdoors.	Division 2.
	With adequate mechanical ventilation.	Entire pit or trench	Division 2.
		Entire room and any adjacent room not separated by a gastight partition.	Division 2.
		Within 15 feet in all directions from pit or trench when located outdoors.	Division 2.

H	Special buildings or rooms for storage of portable containers.	Entire room	Division 2.
I	Pipelines and connections containing operational bleeds, drips, vents or drains.	Within 5 ft. in all directions from point of discharge.	Division 1.
		Beyond 5 ft. from point of discharge, same as Part E of this table.	
J	Container filling: Indoors without ventilation.	Entire room	Division 1.
	Indoors with adequate ventilation.[4]	Within 5 feet in all directions from connections regularly made or disconnected for product transfer.	Division 1.
		Beyond 5 feet and entire room	Division 2.
	Outdoors in open air	Within 5 feet in all directions from connections regularly made or disconnected for product transfer.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator of the sphere and grade (See Fig. H-1.)	Division 2.

[1]The classified area shall not extend beyond an unpierced wall, roof, or solid vaportight partition.

[2]See chapter 296-46 WAC, and chapter 296-24 WAC Part L.

[3]When classifying extent of hazardous area, consideration shall be given to possible variations in the spotting of tank cars and tank vehicles at the unloading points and the effect these variations of actual spotting point may have on the point of connection.

[4]Ventilation, either natural or mechanical, is considered adequate when the concentration of the gas in a gas-air mixture does not exceed twenty-five percent of the lower flammable limit under normal operating conditions.

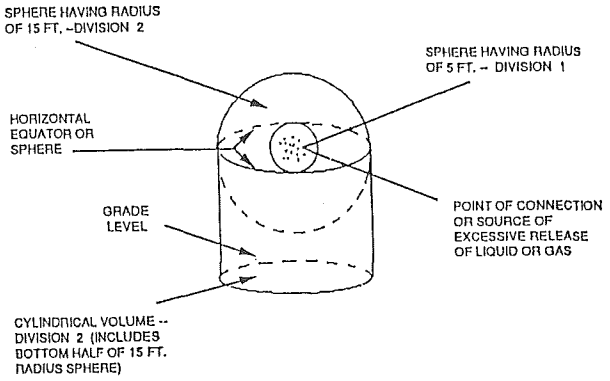


Figure H-1

Note: It is impossible to set out in a table the length of a fixed dip tube for various capacity tanks because of the varying tank diameters and lengths and because the tank may be installed either in a vertical or horizontal position. Knowing the maximum permitted filling volume in gallons, however, the length of the fixed tube can be determined by the use of a strapping table obtained from the container manufacturer. The length of the fixed tube should be such that when its lower end touches the surface of the liquid in the container, the contents of the container will be the maximum permitted volume as determined by the following formula:

$$\frac{\text{Water capacity (gals.) of container* x filling density**}}{\text{Specific gravity of LP-gas* x volume correction factor*** x 100}} = \text{Maximum volume of LP-gas}$$

*Measure at 60°F.

**From subsection (12)(a) of this section "filling densities."

***For aboveground containers the liquid temperature is assumed to be 40°F and for underground containers the liquid temperature is assumed to be 50°F. To correct the liquid volumes at these temperatures to 60°F the following factors shall be used.

(i) Formula for determining maximum volume of liquefied petroleum gas for which a fixed length of dip tube shall be set:

TABLE H-29

VOLUME CORRECTION FACTORS

Specific gravity	Aboveground	Underground
0.500	1.033	1.017
.510	1.031	1.016
.520	1.029	1.015
.530	1.028	1.014
.540	1.026	1.013
.550	1.025	1.013
.560	1.024	1.012
.570	1.023	1.011
.580	1.021	1.011
.590	1.020	1.010

(ii) The maximum volume of LP-gas which can be placed in a container when determining the length of the dip tube expressed as a percentage of total water content of the container is calculated by the following formula.

(iii) The maximum weight of LP-gas which may be placed in a container for determining the length of a fixed dip tube is determined by multiplying the maximum volume of liquefied petroleum gas obtained by the formula in (e)(i) of this subsection by the pounds of liquefied petroleum gas in a gallon at 40°F for aboveground and at 50°F for underground containers. For example, typical pounds per gallon are specified below:

Example: Assume a one hundred-gallon total water capacity tank for aboveground storage of propane having a specific gravity of 0.510 of 60°F.

$$\frac{\text{100 (gals.) x 42 (filling density from (12)(a) of this subsection)}}{\text{0.510 x 1.031 (correction factor from Table H-29) x 100}} = \frac{4200}{52.6}$$

$\frac{4200}{52.6}$ = 79.8 gallons propane, the maximum amount permitted to be placed in a 100-gallon total water capacity aboveground container equipped with a fixed dip tube.

$$\frac{\text{Maximum volume of LP-gas (from formula in (e)(i) of this subsection) x 100}}{\text{Total water content of container in gallons.}} = \text{Maximum percent of LP-gas}$$

	Aboveground, pounds per gallon	Underground, pounds per gallon
Propane	4.37	4.31
N Butane	4.97	4.92

(f) Fixed liquid-level gages used on containers other than DOT containers shall be stamped on the exterior of the gage with the letters "DT" followed by the vertical distance (expressed in inches and carried out to one decimal place) from the top of container to the end of the dip tube or to the centerline of the gage when it is located at the maximum permitted filling level. For portable containers that may be filled in the horizontal and/or vertical position the letters "DT" shall be followed by "V" with the vertical distance from the top of the container to the end of the dip tube for vertical filling and with "H" followed by the proper distance for horizontal filling. For DOT containers the stamping shall be placed both on the exterior of the gage and on the container. On aboveground or cargo containers where the gages are positioned at specific levels, the marking may be specified in percent of total tank contents and the marking shall be stamped on the container.

(g) Gage glasses of the columnar type shall be restricted to charging plants where the fuel is withdrawn in the liquid phase only. They shall be equipped with valves having metallic handwheels, with excess flow valves, and with extra-heavy glass adequately protected with a metal housing applied by the gage manufacturer. They shall be shielded against the direct rays of the sun. Gage glasses of the columnar type are prohibited on tank trucks, and on motor fuel tanks, and on containers used in domestic, commercial, and industrial installations.

(h) Gaging devices of the float, or equivalent type which do not require flow for their operation and having connections extending to a point outside the container do not have to be equipped with excess flow valves provided the piping and fittings are adequately designed to withstand the container pressure and are properly protected against physical damage and breakage.

(20) Requirements for appliances.

(a) Except as provided in (b) of this subsection, new commercial and industrial gas consuming appliances shall be approved.

(b) Any appliance that was originally manufactured for operation with a gaseous fuel other than LP-gas and is in good condition may be used with LP-gas only after it is properly converted, adapted, and tested for performance with LP-gas before the appliance is placed in use.

(c) Unattended heaters used inside buildings for the purpose of animal or poultry production or care shall be equipped with an approved automatic device designed to shut off the flow of gas to the main burners, and pilot if used, in the event of flame extinguishment.

(d) All commercial, industrial, and agricultural appliances or equipment shall be installed in accordance with the requirements of these standards and in accordance with the following:

(i) Domestic and commercial appliances—NFPA 54-1969, Standard for the Installation of Gas Appliances and Gas Piping.

(ii) Industrial appliances—NFPA 54A-1969, Standard for the Installation of Gas Piping and Gas Equipment on Industrial Premises and Certain Other Premises.

(iii) Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines—NFPA 37-1970.

(iv) Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment, NFPA 96-1970.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-47505, filed 11/22/91, effective 12/24/91; 88-23-054 (Order 88-25), § 296-24-47505, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-47505, filed 4/19/85; Order 76-6, § 296-24-47505, filed 3/1/76; Order 73-5, § 296-24-47505, filed 5/9/73 and Order 73-4, § 296-24-47505, filed 5/7/73.]

WAC 296-24-47507 Cylinder systems. (1) Application. This section applies specifically to systems utilizing containers constructed in accordance with DOT specifications. All requirements of WAC 296-24-47505 apply to this section unless otherwise noted in WAC 296-24-47505.

(2) Marking of containers.

(a) Containers shall be marked in accordance with DOT regulations. Additional markings not in conflict with DOT regulations may be used.

(b) Except as provided in (c) of this subsection each container shall be marked with its water capacity in pounds or other identified unit of weight.

(c) If a container is filled and maintained only by the owner or the owners representative and if the water capacity of each container is identified by a code, compliance with (b) of this subsection is not required.

(d) Each container shall be marked with its tare weight in pounds or other identified unit of weight including all permanently attached fittings but not the cap.

(3) Description of a system. A system shall include the container base or bracket, containers, container valves, connectors, manifold valve assembly, regulators, and relief valves.

(4) Containers and regulating equipment installed outside of buildings or structures.

(a) Containers shall not be buried below ground. However, this shall not prohibit the installation in a compartment or recess below grade level, such as a niche in a slope or terrace wall which is used for no other purpose, providing that the container and regulating equipment are not in contact with the ground and the compartment or recess is drained and ventilated horizontally to the outside air from its lowest level, with the outlet at least three feet away from any building opening which is below the level of such outlet.

Except as provided in WAC 296-24-47505 (10)(n), the discharge from safety relief devices shall be located not less than three feet horizontally away from any building opening which is below the level of such discharge and shall not terminate beneath any building unless such space is well ventilated to the outside and is not enclosed on more than two sides.

(b) Containers shall be set upon firm foundation or otherwise firmly secured; the possible effect on the outlet piping of settling shall be guarded against by a flexible connection or special fitting.

(5) Containers and equipment used inside of buildings or structures.

(a) When operational requirements make portable use of containers necessary and their location outside of buildings or structures is impracticable, containers and equipment are permitted to be used inside of buildings or structures in accordance with (a)(i) through (xii) of this subsection, and, in addition, such other provisions of this section as are applicable to the particular use or occupancy.

(i) Containers in use shall mean connected for use.

(ii) Systems utilizing containers having a water capacity greater than two and one-half pounds (nominal one pound LP-gas capacity) shall be equipped with excess flow valves. Such excess flow valves shall be either integral with the container valves or in the connections to the container valve outlets. In either case, an excess flow valve shall be installed in such a manner that any undue strain beyond the excess flow valve will not cause breakage between the container and the excess flow valve. The installation of excess flow valves shall take into account the type of valve protection provided.

(iii) Regulators, if used, shall be either directly connected to the container valves or to manifolds connected to the container valves. The regulator shall be suitable for use with LP-gas. Manifolds and fittings connecting containers to pressure regulator inlets shall be designed for at least 250 p.s.i.g. service pressure.

(iv) Valves on containers having a water capacity greater than fifty pounds (nominal twenty pounds LP-gas capacity) shall be protected while in use.

(v) Containers shall be marked in accordance with WAC 296-24-47505 (5)(c) and subsection (2) of this section.

(vi) Pipe or tubing shall conform to WAC 296-24-47505(8) except that aluminum pipe or tubing shall not be used.

(vii) Hose shall be designed for a working pressure of at least 250 p.s.i.g. Hose and hose connections shall have their correctness as to design, construction and performance determined by listing by a nationally recognized testing laboratory.

(A) The hose length may exceed the length specified in WAC 296-24-47505 (9)(g)(ii), but shall be as short as practicable. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(B) Hose shall be long enough to permit compliance with spacing provisions of this section without kinking or straining or causing hose to be so close to a burner as to be damaged by heat.

(viii) Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot if used, in the event of flame extinguishment. Such heaters having inputs above 50,000 B.t.u. manufactured on or after May 17, 1967, and such heaters having inputs above 100,000 B.t.u. manufactured before May 17, 1967, shall be equipped with either:

(A) A pilot which must be lighted and proved before the main burner can be turned on; or

(B) An electric ignition system. The provisions of (a)(viii) of this subsection do not apply to tar kettle burners, torches, melting pots, nor do they apply to portable heaters under 7,500 B.t.u.h. input when used with containers having a maximum water capacity of two and one-half pounds. Container valves, connectors, regulators, manifolds, piping, and tubing shall not be used as structural supports for heaters.

(ix) Containers, regulating equipment, manifolds, pipe, tubing, and hose shall be located so as to minimize exposure to abnormally high temperatures (such as may result from exposure to convection or radiation from heating equipment or installation in confined spaces), physical damage, or tampering by unauthorized persons.

(x) Heat producing equipment shall be located and used so as to minimize the possibility of ignition of combustibles.

(xi) Containers having water capacity greater than two and one-half pounds (nominal one pound LP-gas capacity) connected for use, shall stand on a firm and substantially level surface and, when necessary, shall be secured in an upright position.

(xii) Containers, including the valve protective devices, shall be installed so as to minimize the probability of impingement of discharge of safety relief devices upon containers.

(b) Containers having a maximum water capacity of two and one-half pounds (nominal one pound LP-gas capacity) are permitted to be used inside of buildings as part of approved self-contained hand torch assemblies or similar appliances.

(c) Containers having a maximum water capacity of twelve pounds (nominal five pounds LP-gas capacity) are permitted to be used temporarily inside of buildings for public exhibition or demonstration purposes, including use for classroom demonstrations.

(d) When buildings frequented by the public are open to the public, containers are permitted to be used for repair or minor renovation as follows:

(i) The maximum water capacity of individual containers shall be fifty pounds (nominal twenty pounds LP-gas capacity).

(ii) The number of LP-gas containers shall not exceed the number of workers assigned to using the LP-gas.

(iii) Containers having a water capacity of greater than two and one-half pounds (nominal one pound LP-gas capacity[)] shall not be left unattended in such buildings.

(e) When buildings frequented by the public are not open to the public, containers are permitted to be used for repair or minor renovations, as follows:

The provisions of (f) of this subsection shall apply except that containers having a water capacity greater than two and one-half pounds (nominal one pound LP-gas capacity) shall not be left unattended in such buildings.

(f) Containers are permitted to be used in buildings or structures under construction or undergoing major renovation when such buildings or structures are not occupied by the public, as follows:

(i) The maximum water capacity of individual containers shall be two hundred forty-five pounds (nominal one hundred pounds LP-gas capacity).

(ii) For temporary heating such as curing concrete, drying plaster and similar applications, heaters (other than integral heater-container units) shall be located at least six feet from any LP-gas container. This shall not prohibit the use of heaters specifically designed for attachment to the container or to a supporting standard, provided they are designed and installed so as to prevent direct or radiant heat application from the heater onto the container. Blower and radiant type heater shall not be directed toward any LP-gas container within twenty feet.

(iii) If two or more heater-container units, of either the integral or nonintegral type, are located in an unpartitioned area on the same floor, the container or containers of each unit shall be separated from the container or containers of any other unit by at least twenty feet.

(iv) When heaters are connected to containers for use in an unpartitioned area on the same floor, the total water capacity of containers manifolded together for connection to a heater or heaters shall not be greater than seven hundred thirty-five pounds (nominal three hundred pounds LP-gas capacity). Such manifolds shall be separated by at least twenty feet.

(v) On floors on which heaters are not connected for use, containers are permitted to be manifolded together for connection to a heater or heaters on another floor, provided:

(A) The total water capacity of containers connected to any one manifold is not greater than two thousand four hundred fifty pounds (nominal one thousand pounds LP-gas capacity) and;

(B) Where more than one manifold having a total water capacity greater than seven hundred thirty-five pounds (nominal three hundred pounds LP-gas capacity) are located in the same unpartitioned area, they shall be separated by at least fifty feet.

(vi) Storage of containers awaiting use shall be in accordance with WAC 296-24-47513.

(g) Containers are permitted to be used in industrial occupancies for processing, research, or experimental purposes as follows:

(i) The maximum water capacity of individual containers shall be two hundred forty-five pounds (nominal one hundred pounds LP-gas capacity).

(ii) Containers connected to a manifold shall have a total water capacity not greater than seven hundred thirty-five pounds (nominal three hundred pounds LP-gas capacity) and not more than one such manifold may be located in the same room unless separated at least twenty feet from a similar unit.

(iii) The amount of LP-gas in containers for research and experimental use shall be limited to the smallest practical quantity.

(h) Containers are permitted to be used in industrial occupancies with essentially noncombustible contents where portable equipment for space heating is essential and where a permanent heating installation is not practical, as follows: Containers and heaters shall comply with and be used in accordance with (f) of this subsection.

(i) Containers are permitted to be used in buildings for temporary emergency heating purposes, if necessary to prevent damage to the buildings or contents, when the permanent heating system is temporarily out of service, as follows:

(i) Containers and heaters shall comply with and be used in accordance with (f) of this subsection.

(ii) The temporary heating equipment shall not be left unattended.

(j) Containers are permitted to be used temporarily in buildings for training purposes related in installation and use of LP-gas systems, as follows:

(i) The maximum water capacity of individual containers shall be two hundred forty-five pounds (nominal one hundred pounds LP-gas capacity), but the maximum quantity of LP-gas that may be placed in each container shall be twenty pounds.

(ii) If more than one such container is located in the same room, the containers shall be separated by at least twenty feet.

(iii) Containers shall be removed from the building when the training class has terminated.

(6) Container valves and accessories.

(a) Valves in the assembly of multiple container systems shall be arranged so that replacement of containers can be made without shutting off the flow of gas in the system.

Note: This provision is not to be construed as requiring an automatic changeover device.

(b) Regulators and low-pressure relief devices shall be rigidly attached to the cylinder valves, cylinders, supporting standards, the building walls or otherwise rigidly secured and shall be so installed or protected that the elements (sleet, snow, or ice) will not affect their operation.

(c) Valves and connections to the containers shall be protected while in transit, in storage, and while being moved into final utilization, as follows:

(i) By setting into the recess of the container to prevent the possibility of their being struck if the container is dropped upon a flat surface, or

(ii) By ventilated cap or collar, fastened to the container capable of withstanding a blow from any direction equivalent to that of a thirty-pound weight dropped four feet. Construction must be such that a blow will not be transmitted to the valve or other connection.

(d) When containers are not connected to the system, the outlet valves shall be kept tightly closed or plugged, even though containers are considered empty.

(e) Containers having a water capacity in excess of fifty pounds (approximately twenty-one pounds LP-gas capacity), recharged at the installation, shall be provided with excess flow or backflow check valves to prevent the discharge of container contents in case of failure of the filling or equalizing connection.

(7) Safety devices.

(a) Containers shall be provided with safety devices as required by DOT regulations.

(b) A final stage regulator of an LP-gas system (excluding any appliance regulator) shall be equipped on the low-pressure side with a relief valve which is set to start to discharge within the limits specified in Table H-30.

TABLE H-30

Regulator delivery pressure	Relief valve start to discharge pressure setting (percent of regulator deliver pressure)	
	Minimum	Maximum
1 p.s.i.g. or less	200	300
Above 1 p.s.i.g. but not over 3 p.s.i.g.	140	200
Above 3 p.s.i.g.	125	200

(c) When a regulator or pressure relief valve is used inside a building for other than purposes specified in WAC 296-24-47505 (6)(a)(i) through (vi), the relief valve and the space above the regulator and relief valve diaphragms shall be vented to the outside air with the discharge outlet located not less than three feet horizontally away from any building opening which is below such discharge. These provisions do not apply to individual appliance regulators when protection is otherwise provided nor to subsection (5) of this section and WAC 296-24-47505 (10)(n). In buildings devoted exclusively to gas distribution purposes, the space above the diaphragm need not be vented to the outside.

(8) Reinstallation of containers. Containers shall not be reinstalled unless they are requalified in accordance with DOT regulations.

Permissible product. A product shall not be placed in a container marked with a service pressure less than four-fifths of the maximum vapor pressure of product at 130°F.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-47507, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-47507, filed 11/14/88; Order 73-5, § 296-24-47507, filed 5/9/73 and Order 73-4, § 296-24-47507, filed 5/7/73.]

WAC 296-24-47509 Systems utilizing containers other than DOT containers. (1) Application. This section applies specifically to systems utilizing storage containers other than those constructed in accordance with DOT specifications. Wac 296-24-47505 of this section applies to this section unless otherwise noted in WAC 296-24-47505.

(2) Design pressure and classification of storage containers. Storage containers shall be designed and classified in accordance with Table H-31.

(3) Container valves and accessories, filler pipes, and discharge pipes.

(a) The filling pipe inlet terminal shall not be located inside a building. For containers with a water capacity of 125 gallons or more, such terminals shall be located not less than 10 feet from any building (see WAC 296-24-47505 (6)(b)), and preferably not less than 5 feet from any driveway, and shall be located in a protective housing built for the purpose.

TABLE H-31

Container type	For gases with vapor press. Not to exceed lb. per sq. in. gage at 100°F (37.8°C.)	Minimum design pressures of container lb. per sq. in. gage	
		1949 and earlier editions of ASME Code (Par. U-68 U-69)	1949 edition of Code (Par. U-200, U-201); 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of ASME Code; All editions of API-ASME Code[3]
80[1]	80[1]	80[1]	100[1]
100	100	100	125
125	125	125	156
150	150	150	187
175	175	175	219
200[2]	215	200	250

[1]New storage containers of the 80 type have not been authorized since Dec. 31, 1947.

[2]Container type may be increased by increments of 25. The minimum design pressure of containers shall be 100% of the container type designations when constructed under 1949 or earlier editions of the ASME Code (Par. U-68 and U-69). The minimum design pressure of containers shall be 125% of the container type designation when constructed under: (1) The 1949 ASME Code (Par. U-200 and U-201), (2) 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of the ASME Code, and (3) all editions of the API-ASME Code.

[3]Construction of containers under the API-ASME Code is not authorized after July 1, 1961.

(b) The filling connection shall be fitted with one of the following:

(i) Combination back-pressure check valve and excess flow valve.

(ii) One double or two single back-pressure check valves.

(iii) A positive shut-off valve in conjunction with either:

(A) An internal back pressure valve, or

(B) An internal excess flow valve.

(c) All openings in a container shall be equipped with approved automatic excess flow valves except in the following: Filling connections as provided in (3)(b) of this section; safety relief connections, liquid-level gaging devices as provided in WAC 296-24-47505 (7)(d), (19)(c) and (19)(h); pressure gage connections as provided in WAC 296-24-

47505 (7)(e), as provided in (3)(d), (f) and (g) of this section.

(d) An excess flow valve is not required in the withdrawal service line providing the following are complied with:

(i) Such systems' total water capacity does not exceed 2,000 U.S. gallons.

(ii) The discharge from the service outlet is controlled by a suitable manually operated shut-off valve which is:

(A) Threaded directly into the service outlet of the container; or

(B) Is an integral part of a substantial fitting threaded into or on the service outlet of the container; or

(C) Threaded directly into a substantial fitting threaded into or on the service outlet of the container.

(iii) The shut-off valve is equipped with an attached handwheel or the equivalent.

(iv) The controlling orifice between the contents of the container and the outlet of the shut-off valve does not exceed five-sixteenths inch in diameter for vapor withdrawal systems and one-eighth inch in diameter for liquid withdrawal systems.

(v) An approved pressure-reducing regulator is directly attached to the outlet of the shut-off valve and is rigidly supported, or that an approved pressure-reducing regulator is attached to the outlet of the shut-off valve by means of a suitable flexible connection, provided the regulator is adequately supported and properly protected on or at the tank.

(e) All inlet and outlet connections except safety relief valves, liquid level gaging devices and pressure gages on containers of 2,000 gallons water capacity, or more, and on any container used to supply fuel directly to an internal combustion engine, shall be labeled to designate whether they communicate with vapor or liquid space. Labels may be on valves.

(f) In lieu of an excess flow valve openings may be fitted with a quick-closing internal valve which, except during operating periods shall remain closed. The internal mechanism for such valves may be provided with a secondary control which shall be equipped with a fusible plug (not over 220°F melting point) which will cause the internal valve to close automatically in case of fire.

(g) Not more than two plugged openings shall be permitted on a container of 2,000 gallons or less water capacity.

(h) Containers of 125 gallons water capacity or more manufactured after July 1, 1961, shall be provided with an approved device for liquid evacuation, the size of which shall be three-fourths inch national pipe thread minimum. A plugged opening will not satisfy this requirements.

(4) Safety devices.

(a) All safety devices shall comply with the following:

(i) All container safety relief devices shall be located on the containers and shall have direct communication with the vapor space of the container.

(ii) In industrial and gas manufacturing plants, discharge pipe from safety relief valves on pipe lines within a building shall discharge vertically upward and shall be piped to a point outside a building.

(iii) Safety relief device discharge terminals shall be so located as to provide protection against physical damage and such discharge pipes shall be fitted with loose raincaps. Return bends and restrictive pipefittings shall not be permitted.

(iv) If desired, discharge lines from two or more safety relief devices located on the same unit, or similar lines from two or more different units, may be run into a common discharge header, provided that the cross-sectional area of such header be at least equal to the sum of the cross-sectional area of the individual discharge lines, and that the setting of safety relief valves are the same.

(v) Each storage container of over 2,000 gallons water capacity shall be provided with a suitable pressure gage.

(vi) A final stage regulator of an LP-gas system (excluding any appliance regulator) shall be equipped on the low-pressure side with a relief valve which is set to start to discharge within the limits specified in Table H-30.

(vii) When a regulator or pressure relief valve is installed inside a building, the relief valve and the space above the regulator and relief valve diaphragms shall be vented to the outside air with the discharge outlet located not less than 3 feet horizontally away from any opening into the building which is below such discharge. (These provisions do not apply to individual appliance regulators when protection is otherwise provided. In buildings devoted exclusively to gas distribution purposes, the space above the diaphragm need not be vented to the outside.)

(b) Safety devices for aboveground containers shall be provided as follows:

(i) Containers of 1,200 gallons water capacity or less which may contain liquid fuel when installed above ground shall have the rate of discharge required by WAC 296-24-47505 (10)(b) provided by a spring-loaded relief valve or valves. In addition to the required spring-loaded relief valve(s) suitable fuse plug(s) may be used provided the total discharge area of the fuse plug(s) for each container does not exceed 0.25 square inch.

(ii) The fusible metal of the fuse plugs shall have a yield temperature of 208°F minimum and 220°F maximum. Relief valves and fuse plugs shall have direct communication with the vapor space of the container.

(iii) On a container having a water capacity greater than 125 gallons, but not over 2,000 gallons, the discharge from the safety relief valves shall be vented away from the container vertically upwards and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container; loose-fitting rain caps shall be used. Suitable provision shall be made for draining condensate which may accumulate in the relief valve or its discharge pipe.

(iv) On containers of 125 gallons water capacity or less, the discharge from safety relief devices shall be located not less than 5 feet horizontally away from any opening into the building below the level of such discharge.

(v) On a container having a water capacity greater than 2,000 gallons, the discharge from the safety relief valves shall be vented away from the container vertically upwards to a point at least 7 feet above the container, and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container; loose-fitting rain caps shall be used. Suitable provision shall be made so that any liquid or condensate that may accumulate inside of the safety relief valve or its discharge pipe will not

render the valve inoperative. If a drain is used, a means shall be provided to protect the container, adjacent containers, piping, or equipment against impingement of flame resulting from ignition of product escaping from the drain.

(c) On all containers which are installed underground and which contain no liquid fuel until buried and covered, the rate of discharge of the spring-loaded relief valve installed thereon may be reduced to a minimum of 30 percent of the rate of discharge specified in WAC 296-24-47505 (10)(b). Containers so protected shall not be uncovered after installation until the liquid fuel has been removed therefrom. Containers which may contain liquid fuel before being installed under ground and before being completely covered with earth are to be considered aboveground containers when determining the rate of discharge requirement of the relief valves.

(d) On underground containers of more than 2,000 gallons water capacity, the discharge from safety relief devices shall be piped vertically and directly upward to a point at least 7 feet above the ground.

Where there is a probability of the manhole or housing becoming flooded, the discharge from regulator vent lines shall be above the highest probable water level. All manholes or housings shall be provided with ventilated louvers or their equivalent, the area of such openings equaling or exceeding the combined discharge areas of the safety relief valves and other vent lines which discharge their content into the manhole housing.

(e) Safety devices for vaporizers shall be provided as follows:

(i) Vaporizers of less than 1 quart total capacity, heated by the ground or the surrounding air, need not be equipped with safety relief valves provided that adequate tests certified by any of the authorities referred to in WAC 296-24-47505(2), demonstrate that the assembly is safe without safety relief valves.

(ii) No vaporizer shall be equipped with fusible plugs.

(iii) In industrial and gas manufacturing plants, safety relief valves on vaporizers within a building shall be piped to a point outside the building and be discharged upward.

(5) Reinstallation of containers. Containers may be reinstalled if they do not show any evidence of harmful external corrosion or other damage. Where containers are reinstalled underground, the corrosion resistant coating shall be put in good condition (see (7)(f) of this section). Where containers are reinstalled above ground, the safety devices and gaging devices shall comply with (4) of this section and WAC 296-24-47505(19) respectively for aboveground containers.

(6) Capacity of containers. A storage container shall not exceed 90,000 gallons water capacity.

(7) Installation of storage containers.

(a) Containers installed above ground, except as provided in (7)(g) of this section, shall be provided with substantial masonry or noncombustible structural supports on firm masonry foundation.

(b) Aboveground containers shall be supported as follows:

(i) Horizontal containers shall be mounted on saddles in such a manner as to permit expansion and contraction. Structural metal supports may be employed when they are protected against fire in an approved manner. Suitable means of preventing corrosion shall be provided on that portion of the container in contact with the foundations or saddles.

(ii) Containers of 2,000 gallons water capacity or less may be installed with nonfireproofed ferrous metal supports if mounted on concrete pads or footings, and if the distance from the outside bottom of the container shell to the concrete pad, footing, or the ground does not exceed 24 inches.

(c) Any container may be installed with nonfireproofed ferrous metal supports if mounted on concrete pads or footings, and if the distance from the outside bottom of the container to the ground does not exceed 5 feet, provided the container is in an isolated location.

(d) Containers may be partially buried providing the following requirements are met:

(i) The portion of the container below the surface and for a vertical distance not less than 3 inches above the surface of the ground is protected to resist corrosion, and the container is protected against settling and corrosion as required for fully buried containers.

(ii) Spacing requirements shall be as specified for underground tanks in WAC 296-24-47505 (6)(b).

(iii) Relief valve capacity shall be as required for aboveground containers.

(iv) Container is located so as not to be subject to vehicular damage, or is adequately protected against such damage.

(v) Filling densities shall be as required for aboveground containers as specified in Table H-27.See WAC 296-24-47505.

(e) Containers buried underground shall be placed so that the top of the container is not less than 6 inches below grade. Where an underground container might be subject to abrasive action or physical damage due to vehicular traffic or other causes, then it shall be:

(i) Placed not less than 2 feet below grade, or

(ii) Otherwise protected against such physical damage.

It will not be necessary to cover the portion of the container to which manhole and other connections are affixed; however, where necessary, protection shall be provided against vehicular damage. When necessary to prevent floating, containers shall be securely anchored or weighted.

(f) Containers shall be given a protective coating before being placed underground. This coating shall be equivalent to hot-dip galvanizing or to two coatings of red lead followed by a heavy coating of coal tar or asphalt. In lowering the container into place, care shall be exercised to prevent damage to the coating. Any damage to the coating shall be repaired before backfilling.

(i) Containers shall be set on a firm foundation (firm earth may be used) and surrounded with earth or sand firmly tamped in place. Backfill should be free of rocks or other abrasive materials.

(g) Containers with foundations attached (portable or semiportable containers with suitable steel "runners" or "skids" and popularly known in the industry as "skid tanks") shall be designed, installed, and used in accordance with these rules subject to the following provisions:

(i) If they are to be used at a given general location for a temporary period not to exceed 6 months they need not

have fire-resisting foundations or saddles but shall have adequate ferrous metal supports.

(ii) They shall not be located with the outside bottom of the container shell more than 5 feet above the surface of the ground unless fire-resisting supports are provided.

(iii) The bottom of the skids shall not be less than 2 inches or more than 12 inches below the outside bottom of the container shell.

(iv) Flanges, nozzles, valves, fittings, and the like, having communication with the interior of the container, shall be protected against physical damage.

(v) When not permanently located on fire-resisting foundations, piping connections shall be sufficiently flexible to minimize the possibility of breakage or leakage of connections if the container settles, moves, or is otherwise displaced.

(vi) Skids, or lugs for attachment of skids, shall be secured to the container in accordance with the code or rules under which the container is designed and built (with a minimum factor of safety of four) to withstand loading in any direction equal to four times the weight of the container and attachments when filled to the maximum permissible loaded weight.

(h) Field welding where necessary shall be made only on saddle plates or brackets which were applied by the manufacturer of the tank.

(i) For aboveground containers, secure anchorage or adequate pier height shall be provided against possible container flotation wherever sufficiently high floodwater might occur.

(j) When permanently installed containers are interconnected, provision shall be made to compensate for expansion, contraction, vibration, and settling of containers, and interconnecting piping. Where flexible connections are used, they shall be of an approved type and shall be designed for a bursting pressure of not less than five times the vapor pressure of the product at 100°F. The use of nonmetallic hose is prohibited for permanently interconnecting such containers.

(k) Container assemblies listed for interchangeable installation above ground or under ground shall conform to the requirements for aboveground installations with respect to safety relief capacity and filling density. For installation above ground all other requirements for aboveground installations shall apply. For installation under ground all other requirements for underground installations shall apply.

(8) Protection of container accessories.

(a) Valves, regulating, gaging, and other container accessory equipment shall be protected against tampering and physical damage. Such accessories shall also be so protected during the transit of containers intended for installation underground.

(b) On underground or combination aboveground-underground containers, the service valve handwheel, the terminal for connecting the hose, and the opening through which there can be a flow from safety relief valves shall be at least 4 inches above the container and this opening shall be located in the dome or housing. Underground systems shall be so installed that all the above openings, including the regulator vent, are located above the normal maximum water table.

(c) All connections to the underground containers shall be located within a substantial dome, housing, or manhole and with access thereto protected by a substantial cover.

(9) Drips for condensed gas. Where vaporized gas on the low-pressure side of the system may condense to a liquid at normal operating temperatures and pressures, suitable means shall be provided for revaporization of the condensate.

(10) Damage from vehicles. When damage to LP-gas systems from vehicular traffic is a possibility, precautions against such damage shall be taken.

(11) Pits and drains. Every effort should be made to avoid the use of pits, except pits fitted with automatic flammable vapor detecting devices. No drains or blowoff lines shall be directed into or in proximity to sewer systems used for other purposes.

(12) General provisions applicable to systems in industrial plants (of 2,000 gallons water capacity and more) and to bulk filling plants.

(a) When standard watch service is provided, it shall be extended to the LP-gas installation and personnel properly trained.

(b) If loading and unloading are normally done during other than daylight hours, adequate lights shall be provided to illuminate storage containers, control valves, and other equipment.

(c) Suitable roadways or means of access for extinguishing equipment such as wheeled extinguishers or fire department apparatus shall be provided.

(d) To minimize trespassing or tampering, the area which includes container appurtenances, pumping equipment, loading and unloading facilities, and cylinder-filling facilities shall be enclosed with at least a 6-foot-high industrial type fence unless otherwise adequately protected. There shall be at least two means of emergency access.

(13) Container-charging plants.

(a) The container-charging room shall be located not less than:

(i) Ten feet from bulk storage containers.

(ii) Twenty-five feet from line of adjoining property which may be built upon.

(b) Tank truck filling station outlets shall be located not less than:

(i) Twenty-five feet from line of adjoining property which may be built upon.

(ii) Ten feet from pumps and compressors if housed in one or more separate buildings.

(c) The pumps or compressors may be located in the container-charging room or building, in a separate building, or outside of buildings. When housed in separate building, such building (a small noncombustible weather cover is not to be construed as a building) shall be located not less than:

(i) Ten feet from bulk storage tanks.

(ii) Twenty-five feet from line of adjoining property which may be built upon.

(iii) Twenty-five feet from sources of ignition.

(d) When a part of the container-charging building is to be used for a boiler room or where open flames or similar sources of ignition exist or are employed, the space to be so occupied shall be separated from container charging room by a partition wall or walls of fire-resistant construction continuous from floor to roof or ceiling. Such separation

walls shall be without openings and shall be joined to the floor, other walls, and ceiling or roof in a manner to effect a permanent gas-tight joint.

(e) Electrical equipment and installations shall conform with WAC 296-24-47505 (17) and (18).

(14) Fire protection.

(a) Each bulk plant shall be provided with at least one approved portable fire extinguisher having a minimum rating of 12-B, C.

(b) In industrial installations involving containers of 150,000 gallons aggregate water capacity or more, provision shall be made for an adequate supply of water at the container site for fire protection in the container area, unless other adequate means for fire control are provided. Water hydrants shall be readily accessible and so spaced as to provide water protection for all containers. Sufficient lengths of firehose shall be provided at each hydrant location on a hose cart, or other means provided to facilitate easy movement of the hose in the container area. It is desirable to equip the outlet of each hose line with a combination fog nozzle. A shelter shall be provided to protect the hose and its conveyor from the weather.

(15) Painting. Aboveground containers shall be kept properly painted.

(16) Lighting. Electrical equipment and installations shall conform to WAC 296-24-47505 (17) and (18).

(17) Vaporizers for internal combustion engines. The provisions of WAC 296-24-47511(8) shall apply.

(18) Gas regulating and mixing equipment for internal combustion engines. The provisions of WAC 296-24-47511(9) shall apply.

[Order 73-5, § 296-24-47509, filed 5/9/73 and Order 73-4, § 296-24-47509, filed 5/7/73.]

WAC 296-24-47511 Liquefied petroleum gas as a motor fuel. (1) Application.

(a) This section applies to internal combustion engines, fuel containers, and pertinent equipment for the use of liquefied petroleum gases as a motor fuel on easily movable, readily portable units including self-propelled vehicles.

(b) Fuel containers and pertinent equipment for internal combustion engines using liquefied petroleum gas where installation is of the stationary type are covered by WAC 296-24-47509. This section does not apply to containers for transportation of liquefied petroleum gases nor to marine fuel use. All requirements of WAC 296-24-47505 apply to this section, unless otherwise noted in WAC 296-24-47505.

(2) General.

(a) Fuel may be used from the cargo tank of a truck while in transit, but not from cargo tanks on trailers or semitrailers. The use of fuel from the cargo tanks to operate stationary engines is permitted providing wheels are securely blocked.

(b) Passenger-carrying vehicles shall not be fueled while passengers are on board.

(c) Industrial trucks (including lift trucks) equipped with permanently mounted fuel containers shall be charged outdoors. Charging equipment shall comply with the provisions of WAC 296-24-47517.

(d) LP-gas fueled industrial trucks shall comply with the Standard for Type Designations, Areas of Use, Maintenance and Operation of Powered Industrial Trucks, NFPA 505-1969.

(e) Engines on vehicles shall be shut down while fueling if the fueling operation involves venting to the atmosphere.

(3) Design pressure and classification of fuel containers.

(a) Except as covered in (3)(b) and (c) of this section, containers shall be in accordance with Table H-32.

(b) Fuel containers for use in industrial trucks (including lift trucks) shall be either DOT containers authorized for LP-gas service having a minimum service pressure of 240 p.s.i.g or minimum Container Type 250. Under 1950 and later ASME Codes, this means a 312.5-p.s.i.g design pressure container.

TABLE H-32

Container type	For gases with vapor press. Not to exceed lb. per sq. in. gage at 100°F. (37.8°C.)	Minimum design pressure of container lb. per sq. in. gage	
		1949 and earlier editions of ASME Code (Par. U-68, U-69)	1949 edition of ASME Code (Par. U-200,,1U-201); 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of ASME Code; All editions of API-ASME Code[2]
200[1]	215	200	250

[1]Container type may be increased by increments of 25. The minimum design pressure of containers shall be 100% of the container type designation when constructed under 1949 or earlier editions of the ASME Code (Par. U-68 and U-69). The minimum design pressure of containers shall be 125% of the container type designation when constructed under: (1) The 1949 ASME Code (Par. U-200 and U-201), (2) 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of the ASME Code, and (3) all editions of the API-ASME Code.

[2]Construction of containers under the API-ASME Code is not authorized after July 1, 1961.

(c) Containers manufactured and maintained under DOT specifications and regulations may be used as fuel containers. When so used they shall conform to all requirements of this section.

(d) All container inlets and outlets except safety relief valves and gaging devices shall be labeled to designate whether they communicate with vapor or liquid space. (Labels may be on valves.)

(4) Installation of fuel containers.

(a) Containers shall be located in a place and in a manner to minimize the possibility of damage to the container. Containers located in the rear of trucks and buses, when protected by substantial bumpers, will be considered in conformance with this requirement. Fuel containers on passenger-carrying vehicles shall be installed as far from the engine as is practicable, and the passenger space and any space containing radio equipment shall be sealed from the container space to prevent direct seepage of gas to these spaces. The container compartment shall be vented to the outside. In case the fuel container is mounted near the engine or the exhaust system, the container shall be shielded against direct heat radiation.

(b) Containers shall be installed with as much clearance as practicable but never less than the minimum road clearance of the vehicle under maximum spring deflection. This minimum clearance shall be to the bottom of the container or to the lowest fitting on the container or housing, whichever is lower.

(c) Permanent and removable fuel containers shall be securely mounted to prevent jarring loose, slipping, or rotating, and the fastenings shall be designed and constructed to withstand static loading in any direction equal to twice the weight of the tank and attachments when filled with fuel using a safety factor of not less than four based on the ultimate strength of the material to be used. Field welding, when necessary, shall be made only on saddle plates, lugs or brackets, originally attached to the container by the tank manufacturer.

(d) Fuel containers on buses shall be permanently installed.

(e) Containers from which vapor only is to be withdrawn shall be installed and equipped with suitable connections to minimize the accidental withdrawal of liquid.

(5) Valves and accessories.

(a) Container valves and accessories shall have a rated working pressure of at least 250 p.s.i.g., and shall be of a type suitable for liquefied petroleum gas service.

(b) The filling connection shall be fitted with an approved double back-pressure check valve, or a positive shutoff in conjunction with an internal back-pressure check valve. On a removable container the filler valve may be a hand operated shutoff valve with an internal excess flow valve. Main shutoff valves on the container on liquid and vapor must be readily accessible.

(c) With the exceptions of (5)(d)(iii) of this section, filling connections equipped with approved automatic back-pressure check valves, and safety relief valves, all connections to the containers having openings for the flow of gas in excess of a No. 54 drill size shall be equipped with approved automatic excess flow valves to prevent discharge of content in case connections are broken.

(d) Liquid-level gaging devices:

(i) Variable liquid-level gages which require the venting of fuel to the atmosphere shall not be used on fuel containers of industrial trucks (including lift trucks).

(ii) On portable containers that may be filled in the vertical and/or horizontal position, the fixed liquid-level gage shall indicate maximum permitted filling level for both vertical and horizontal filling with the container oriented to place the safety relief valve in communication with the vapor space.

(iii) In the case of containers used solely in farm tractor service and charged at a point at least 50 feet from any important building, the fixed liquid-level gaging device may be so constructed that the outward flow of container content exceeds that passed by a No. 54 drill size opening, but in no case shall the flow exceed that passed by a No. 31 drill-size opening. An excess flow valve is not required. Fittings equipped with such restricted drill size opening and container on which they are used shall be marked to indicate the size of the opening.

(iv) All valves and connections on containers shall be adequately protected to prevent damage due to accidental contact with stationary objects or from loose objects thrown up from the road, and all valves shall be safeguarded against damage due to collision, overturning or other accident. For farm tractors where parts of the vehicle provide such protection to valves and fittings, the foregoing requirements shall be considered fulfilled. However, on removable type containers the protection for the fittings shall be permanently attached to the container.

(v) (Exchange of removable fuel containers preferably should be done outdoors but may be done indoors.) When removable fuel containers are used, means shall be provided in the fuel system to minimize the escape of fuel when the containers are exchanged. This shall be accomplished by one of the following methods:

(A) Using an approved automatic quick-closing coupling (a type closing in both directions when uncoupled) in the fuel line, or

(B) Closing the valve at the fuel container and allowing the engine to run until the fuel in the line is consumed.

(6) Piping—Including pipe, tubing, and fittings.

(a) Pipe from fuel container to first-stage regulator shall be not less than schedule 80 wrought iron or steel (black or galvanized), brass or copper; or seamless copper, brass, or steel tubing. Steel tubing shall have a minimum wall thickness of 0.049 inch. Steel pipe or tubing shall be adequately protected against exterior corrosion. Copper tubing shall be types K or L or equivalent having a minimum wall thickness of 0.032 inch. Approved flexible connections may be used between container and regulator or between regulator and gas-air mixer within the limits of approval. The use of aluminum pipe or tubing is prohibited. In the case of removable containers an approved flexible connection shall be used between the container and the fuel line.

(b) All piping shall be installed, braced, and supported so as to reduce to a minimum the possibility of vibration strains or wear.

(7) Safety devices.

(a) Spring-loaded internal type safety relief valves shall be used on all motor fuel containers.

(b) The discharge outlet from safety relief valves shall be located on the outside of enclosed spaces and as far as practicable from possible sources of ignition, and vented upward within 45 degrees of the vertical in such a manner as to prevent impingement of escaping gas upon containers, or parts of vehicles, or on vehicles in adjacent lines of traffic. A rain cap or other protector shall be used to keep water and dirt from collecting in the valve.

(c) When a discharge line from the container safety relief valve is used, the line shall be metallic, other than aluminum, and shall be sized, located, and maintained so as not to restrict the required flow of gas from the safety relief valve. Such discharge line shall be able to withstand the pressure resulting from the discharge of vapor when the safety relief valve is in the full open position. When flexibility is necessary, flexible metal hose or tubing shall be used.

(d) Portable containers equipped for volumetric filling may be filled in either the vertical or horizontal position only when oriented to place the safety relief valve in communication with the vapor space.

(e) WAC 296-24-47505 (10)(1) for hydrostatic relief valves shall apply.

(8) Vaporizers.

(a) Vaporizers and any part thereof and other devices that may be subjected to container pressure shall have a design pressure of at least 250 p.s.i.g.

(b) Each vaporizer shall have a valve or suitable plug which will permit substantially complete draining of the vaporizer. It shall be located at or near the lowest portion of the section occupied by the water or other heating medium.

(c) Vaporizers shall be securely fastened so as to minimize the possibility of becoming loosened.

(d) Each vaporizer shall be permanently marked at a visible point as follows:

(i) With the design pressure of the fuel-containing portion in p.s.i.g.

(ii) With the water capacity of the fuel-containing portion of the vaporizer in pounds.

(e) Devices to supply heat directly to a fuel container shall be equipped with an automatic device to cut off the supply of heat before the pressure inside the fuel container reaches 80 percent of the start to discharge pressure setting of the safety relief device on the fuel container.

(f) Engine exhaust gases may be used as a direct source of heat supply for the vaporization of fuel if the materials of construction of those parts of the vaporizer in contact with exhaust gases are resistant to the corrosive action of exhaust gases and the vaporizer system is designed to prevent excessive pressures.

(g) Vaporizers shall not be equipped with fusible plugs.

(9) Gas regulating and mixing equipment.

(a) Approved automatic pressure reducing equipment shall be installed in a secure manner between the fuel supply container and gas-air mixer for the purpose of reducing the pressure of the fuel delivered to the gas-air mixer.

(b) An approved automatic shutoff valve shall be provided in the fuel system at some point ahead of the inlet of the gas-air mixer, designed to prevent flow of fuel to the mixer when the ignition is off and the engine is not running. In the case of industrial trucks and engines operating in buildings other than those used exclusively to house engines, the automatic shutoff valve shall be designed to operate if the engine should stop. Atmospheric type regulators (zero governors) shall be considered adequate as an automatic shutoff valve only in cases of outdoor operation such as farm tractors, construction equipment, irrigation pump engines, and other outdoor stationary engine installations.

(c) The source of the air for combustion shall be completely isolated from the passenger compartment, ventilating system, or air-conditioning system.

(10) Capacity of containers. No single fuel container used on passenger carrying vehicles shall exceed 200 gallons water capacity. No single fuel container on other vehicles normally operating on the highway shall exceed 300 gallons water capacity except as provided in (2)(a) of this section.

(11) Stationary engines in buildings. Stationary engines and gas turbines installed in buildings, including portable engines used instead of or to supplement stationary engines, shall comply with the Standard for the Institution and Use of Stationary Combustion Engines and Gas Turbines, NFPA 37-1970, and the appropriate provisions of WAC 296-24-47505 through 296-24-47509.

(12) Portable engines in buildings.

(a) Portable engines may be used in buildings only for emergency use, except as provided by (11) of this section.

(b) Exhaust gases shall be discharged to outside the building or to an area where they will not constitute a hazard.

(c) Provision shall be made to supply sufficient air for combustion and cooling.

(d) An approved automatic shutoff valve shall be provided in the fuel system ahead of the engine, designed to prevent flow of fuel to the engine when the ignition is off or if the engine should stop.

(e) The capacity of LP-gas containers used with such engines shall comply with the applicable occupancy provision of WAC 296-24-47507(5).

(13) Industrial trucks inside buildings.

(a) LP-gas-fueled industrial trucks are permitted to be used in buildings and structures.

(b) No more than two LP-gas containers shall be used on an industrial truck for motor fuel purposes.

(c) LP-gas-fueled industrial trucks are permitted to be used in buildings frequented by the public, when occupied by the public. The total water capacity of containers on each industrial truck shall not exceed 105 pounds (nominal 45 pounds LP-gas).

(d) Trucks shall not be left unattended in areas occupied by the public.

(e) Industrial trucks shall not be parked and left unattended in areas of possible excessive heat or sources of ignition.

(14) Garaging LP-gas-fueled vehicles.

(a) LP-gas-fueled vehicles may be stored or serviced inside garages provided there are no leaks in the fuel system and the fuel tanks are not filled beyond the maximum filling capacity specified in WAC 296-24-47505 (12)(a).

(b) LP-gas-fueled vehicles being repaired in garages shall have the container shutoff valve closed except when fuel is required for engine operation.

(c) Such vehicles shall not be parked near sources of heat, open flames, or similar sources of ignition or near open pits unless such pits are adequately ventilated.

[Order 73-5, § 296-24-47511, filed 5/9/73 and Order 73-4, § 296-24-47511, filed 5/7/73.]

WAC 296-24-47513 Storage of containers awaiting use or resale. (1) Application. This section shall apply to the storage of portable containers not in excess of one thousand pounds water capacity, filled or partially filled, at user location but not connected for use, or in storage for resale by dealers or resellers. This section shall not apply to containers stored at charging plants or at plants devoted primarily to the storage and distribution of LP-gas or other petroleum products.

(2) General.

(a) Containers in storage shall be located so as to minimize exposure to excessive temperature rise, physical damage, or tampering by unauthorized persons.

(b) Containers when stored inside shall not be located near exits, stairways, or in areas normally used or intended for the safe exit of people.

(c) Container valves shall be protected while in storage as follows:

(i) By setting into recess of container to prevent the possibility of their being struck if the container is dropped upon a flat surface, or

(ii) By ventilated cap or collar, fastened to container capable of withstanding blow from any direction equivalent to that of a thirty-pound weight dropped four feet. Construction must be such that a blow will not be transmitted to a valve or other connection.

(d) The outlet valves of containers in storage shall be closed.

(e) Empty containers which have been in LP-gas service should preferably be stored in the open. When stored inside, they shall be considered as full containers for the purpose of determining the maximum quantity of LP-gas permitted by this section.

(3) Storage within buildings frequented by the public.

(a) DOT specification containers having a maximum individual water capacity of two and one-half pounds, used with completely self-contained hand torches and similar applications, are permitted to be stored or displayed in a building frequented by the public. The display of such containers shall be limited to a total of twenty-four units of each brand and size. The total quantity on display and in storage shall not exceed two hundred pounds LP-gas.

(b) Storage as provided in subsection (5) of this section shall not be permitted within or attached to such a building.

(4) Storage within buildings not frequented by the public (such as industrial buildings).

(a) The quantity of LP-gas stored shall not exceed three hundred pounds (approximately two thousand five hundred fifty cubic feet in vapor form) except as provided in subsection (5) of this section.

(b) Containers carried as a part of service equipment on highway mobile vehicles are not to be considered in the total storage capacity in (a) of this subsection provided such vehicles are stored in private garages, and are limited to one container per vehicle with an LP-gas capacity of not more than one hundred pounds. All container valves shall be closed.

(5) Storage within special buildings or rooms.

(a) The quantity of LP-gas stored in special buildings or rooms shall not exceed ten thousand pounds.

(b) The walls, floors, and ceilings of container storage rooms that are within or adjacent to other parts of the building shall be constructed of material having at least a two-hour fire resistance rating.

(c) A portion of the exterior walls or roof having an area not less than ten percent of that of the combined area of the enclosing walls and roof shall be of explosion relieving construction.

(d) Each opening from such storage rooms to other parts of the building shall be protected by a one and one-half-hour "(B)" fire door listed by a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(e) Such rooms shall have no open flames for heating or lighting.

(f) Such rooms shall be adequately ventilated both top and bottom to the outside only. The openings from such vents shall be at least five feet away from any other opening into any building.

(g) The floors of such rooms shall not be below ground level. Any space below the floor shall be of solid fill or properly ventilated to the open air.

(h) Such storage rooms shall not be located adjoining the line of property occupied by schools, churches, hospitals, athletic fields or other points of public gathering.

(i) Fixed electrical equipment shall be installed in accordance with WAC 296-24-47505(18).

(6) Storage outside of buildings.

(a) Storage outside of buildings, for containers awaiting use or resale, shall be located in accordance with Table H-33 with respect to:

(i) The nearest important building or group of buildings;

(ii) The line of adjoining property which may be built upon;

(iii) Busy thoroughfares;

(vi) The line of adjoining property occupied by schools, churches, hospitals, athletic fields, or other points of public gathering.

TABLE H-33

Quantity of LP-Gas Stored:	Distance
500 pounds or less	0
501 to 2,500 pounds	0*
2,501 to 6,000 pounds	10 feet
6,001 to 10,000 pounds	20 feet
Over 10,000 pounds	25 feet

*Container or containers shall be at least ten feet from any building on adjoining property, any sidewalk, or any of the exposures described in (a)(iii) or (iv) of this subsection.

(b) Containers shall be in a suitable enclosure or otherwise protected against tampering.

(7) Fire protection. Storage locations other than supply depots separated and located apart from dealer, reseller, or user establishments shall be provided with at least one approved portable fire extinguisher having a minimum rating of 8-B, C.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-47513, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-47513, filed 11/13/80; Order 76-6, § 296-24-47513, filed 3/1/76; Order 73-5, § 296-24-47513, filed 5/9/73 and Order 73-4, § 296-24-47513, filed 5/7/73.]

WAC 296-24-47515 LP-gas system installations on commercial vehicles. (1) Application. This section applies to LP-gas-system installations on vehicles (whether self-propelled or of the trailer or semitrailer type) used for commercial, construction, or public service purposes such as mobile libraries and clinics; to all exchangeable container systems with container capacities greater than 105 pounds water capacity (approximately 45 pounds LP-gas capacity) and to systems using containers permanently mounted on vehicles. It does not apply to LP-gas motor fuel systems covered by WAC 296-24-47511. WAC 296-24-47505 applies to this section unless otherwise noted. When such a vehicle is permanently parked, and LP-gas is supplied from a system not mounted on and secured to the unit, WAC 296-24-47507 and 296-24-47509 shall apply.

(2) Construction and marking of containers. Containers shall be constructed in accordance with WAC 296-24-47505(3), and marked in accordance with the applicable

requirements of WAC 296-24-47505(5), and shall also meet the following:

(a) Containers designed for use as portable cylinders shall be constructed in accordance with DOT specifications, and in accordance with WAC 296-24-47505 (2)(e); where applicable.

(b) All other containers whether designed for permanent mounting, or for portable or semiportable use (such as skid tanks), shall be constructed as provided for by WAC 296-24-47505 (2)(d) and (3)(a). Mounting, securing, and protection of such containers shall be as in (2)(c) and (d) of this section.

(c) Permanently installed containers shall meet the requirements of (2)(c)(i) and (ii) of this section with regard to container valves and accessories, and (2)(c)(iii) through (vi) of this section as to mounting.

(i) Nonrecessed container fittings and appurtenances shall be protected against damage by either:

(A) Their location.

(B) The vehicle frame or bumper, or

(C) Protective housing. The protective housing, if used, shall comply with the requirements under which the tanks are fabricated with respect to design and construction and shall be designed to withstand static loadings in any direction equal to twice the weight of the tank and attachments when filled with the lading using a safety factor of not less than four, based on the ultimate strength of the material to be used. The housing shall be provided with a weather cover if necessary to insure proper operation of valves and safety devices.

(ii) Manually operated shutoff valves, except as covered in WAC 296-24-47511 (2)(a), or self-closing internal valves shall be closed except during transfer operations.

(iii) Tank motor vehicles with frames not made integral with the tank, as by welding, shall be provided with turnbuckles or similar positive devices for drawing the tank down tight on the frame. In addition, suitable stops or anchors shall be attached to the frame and/or the tank to prevent relative motion between them due to starting, stopping, and turning. The stops and anchors shall be so installed as to be readily accessible for inspection and maintenance.

(iv) Any tank motor vehicle designed and constructed so that the cargo tank constitutes in whole or in part the stress member used in lieu of a frame shall be supported by external cradles subtending at least 120 degrees of the shell circumference. The design calculations shall include beam stress, shear stress, torsion stress, bending moment, and acceleration stress for the cargo tank as a whole using a factor of safety of four, based on the ultimate tensile strength of the material. Maximum concentrated stresses which might be created at pads and cradles due to shear, bending, and torsion shall also be calculated in accordance with Appendix G of the American Society of Mechanical Engineers, Unfired Pressure Vessel Code, 1968. Fully loaded vehicles shall be assumed to be operating under highway conditions equal to two "g" loading. The effects of fatigue shall be taken into consideration. Cargo tanks mounted on frames may be supported by longitudinal members attached to pads providing the above-stated factors are taken into account.

(v) Where any tank support is attached to any part of a tank head, the stresses imposed upon the head shall be provided for as required in (2)(c)(iv) of this section.

(vi) Tank supports, stops, anchors, and bumpers shall not be welded directly to the tank but shall be attached by means of pads of the same material as the tank. The pad thickness shall be not less than one-fourth inch, or the thickness of the shell material if less, and no greater than the shell material. Each pad shall extend at least four times its thickness, in each direction, beyond the weld attaching the support, bumper, stop, or anchor. Each pad shall be preformed to an inside radius no greater than the outside radius of the tank at the place of attachment. Each pad corner shall be rounded to a radius at least one-fourth the width of the pad, and no greater than one-half the width of the pad. Weepholes and tell-tale holes, if used, shall be drilled or punched before the pads are attached to the tank. Each pad shall be attached to the tank by continuous fillet welding using filler material having properties conforming to the recommendations of the maker of the shell and head material.

(d) Portable or semiportable containers (skid tanks as covered by WAC 296-24-47509 (7)(g)) shall meet the applicable requirements of (2)(d)(i) to (vi) of this section inclusive with regard to container valves and accessories and WAC 296-24-47511 (4)(c) as to mounting. Containers designed for permanent installation as part of systems under WAC 296-24-47509 shall not be used.

(i) Nonrecessed container fittings and appurtenances shall be protected against damage by either—

(A) Their location.

(B) The vehicle frame or bumper, or

(C) A protective housing. The protective housing, if used, shall comply with the requirements under which the tanks are fabricated with respect to design and construction and shall be designed to withstand static loadings in any direction equal to twice the weight of the tank and attachments when filled with the lading using a safety factor of not less than four, based on the ultimate strength of the material to be used. The housing shall be provided with a weather cover if necessary to insure proper operation of valves and safety devices.

(ii) Filling connections shall be provided with approved automatic back pressure check valves, excess flow check valves or quick closing internal valves to prevent excessive escape of gas in case the filling connection is broken, except that where the filling and discharge connect on a common opening in the container shell, and that opening is fitted with a quick-closing internal valve as specified in (2)(d)(iii) of this section, the automatic valve shall not be required. In addition every inlet and outlet connection shall be equipped with a manually or automatically operated shutoff valve. Liquid discharge openings, except those for engine fuel lines, on tanks built after September 1, 1965, shall be fitted with a remotely controlled internal shutoff valve. Such valve shall conform to the following requirements:

(A) The seat of the valve shall be inside the tank, or in the opening nozzle or flange, or in a companion flange bolted to the nozzle or flange.

(B) All parts of the valve inside the tank, nozzle, or companion flange shall be made of material not subject to corrosion or other deterioration in the presence of the lading.

(C) The arrangement of parts shall be such that damage to parts exterior to the tank will not prevent effective seating of the valve.

(D) The valve may be operated normally by mechanical means, by hydraulic means, or by air, or gas pressure.

(E) The valve shall be provided with remote means of automatic closure, both mechanical and thermal, in at least two places for tanks over 3,500 gallons water capacity. These remote control stations shall be located at each end of the tank and diagonally opposite each other. The thermal control mechanism shall have a fusible element with a melting point not over 220°F or less then 208°F. At least one remote control station shall be provided for tanks of 3,500 gallons water capacity or less, and such actuating means may be mechanical.

(iii) All other connections to containers, except those used for gaging devices, thermometer wells, safety relief devices, and plugged openings, shall be provided with suitable automatic excess flow valves, or in lieu thereof may be fitted with quick-closing internal valves.

The control mechanism for the internal valve shall be provided with a secondary control, remote from the fill or discharge connections (for use in the event of accidents or fire during delivery operations), and such control mechanism shall have a fusible element with a melting point not over 220°F or less than 208°F.

(iv) Manually operated shutoff valves, except as covered in WAC 296-24-47511 (2)(a), or self-closing internal valves shall be closed except during transfer operations.

(v) Excess flow valves shall close automatically at the rated flow of vapor or liquid as specified by the valve manufacturers. The flow rating of the piping beyond the excess flow valve shall be greater than that of the excess flow valve and such rating shall include valves, fittings, and hose, except, when branching or necessary restrictions are incorporated in such a piping system so that flow ratings are less than that of the excess flow valve and the tank, then additional excess flow valves shall be installed in the piping where such flow rate is reduced.

(vi) Container inlets and outlets, except those used for safety relief valves, liquid-level gaging devices, and pressure gages, shall be labeled to designate whether they communicate with vapor or liquid space when the container is filled to maximum permitted filling density. (Labels may be on valves.)

(3) Capacity of a system. No single fuel container used on passenger carrying vehicles shall exceed 200 gallons water capacity.

(4) Description of a system. A system consists of an assembly of equipment installed on a commercial vehicle.

(5) Location of containers and systems.

(a) Containers shall not be installed, transported, or stored (even temporarily) inside any vehicle covered by these standards except as provided by the applicable regulations of DOT.

(b) Containers, control valves, and regulating equipment comprising a complete system shall be suitably protected against damage and weather. Systems may be installed in a recess vaportight to the inside of the vehicle and accessible from and vented to the outside.

(c) Systems installed outside of mobile units shall be so located that discharge from safety relief devices shall be not less than 3 feet horizontally away from any opening into the unit below the level of such discharge. When the system is located in a recess vaportight to the inside, vent openings in such recess shall be not less than 3 feet horizontally away from any opening into the mobile unit below the level of these vents.

(d) There shall be no fuel connection between tractor and trailer or other vehicle units.

(e) The container or container carrier shall be secured in place by fastenings designed and constructed with a minimum safety factor of four to withstand loading in any direction equal to twice the weight of the container when filled to normal capacity with LP-gas.

(6) Container valves and accessories. Container valves and accessories shall be provided, protected and mounted as follows:

(a) Systems utilizing DOT cylinders in accordance with WAC 296-24-47507(6).

(b) All other systems in accordance with WAC 296-24-47509 (3)(b) through (g).

(c) Portable, semiportable and permanently mounted containers shall be mounted and protected as provided under (2)(b) through (d) of this section.

(7) Safety-relief devices.

(a) DOT containers shall be provided with safety-relief devices as required by the regulations of DOT.

(b) ASME containers and API-ASME containers shall be provided with safety-relief devices as required by WAC 296-24-47505(10).

(c) A final stage regulator of an LP-gas system (excluding any appliance regulator) shall be equipped on the low-pressure side with a relief valve which is set to start to discharge within the limits specified in Table H-30. (See WAC 296-24-47509.)

(d) The relief valve and space above the regulator and relief valve diaphragms shall be vented to the outside air and terminate at a position to minimize the possibility of vapors accumulating at sources of ignition.

(e) Whenever equipment such as a cargo heater or cooler on commercial vehicles is a type designed to be in operation while in transit, suitable means to stop the flow such as an excess flow valve or other device, shall be installed. This device will be actuated to stop the flow in the event of the break in the fuel supply line. All excess flow valves shall comply with WAC 296-24-47505 (7)(c).

(8) System design and line pressure. Systems may be of either vapor withdrawal or liquid withdrawal type and shall comply with the applicable requirements for the type of usage involved.

(9) System enclosure and mounting.

(a) Housing or enclosures shall be designed to provide proper ventilation.

(b) Hoods, domes, or removable portions of cabinets shall be provided with means to keep them firmly in place during transit.

(c) Provision shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit in accordance with WAC 296-24-47511 (4)(c).

(d) Containers shall be mounted on a substantial support or base secured firmly to the vehicle chassis. Neither the container nor its support shall extend below the frame.

(10) Piping—Including pipe, tubing, and fittings.

(a) Regulators shall be connected directly to the container valve outlet or mounted securely by means of support bracket and connected to the container valve or valves with a listed high pressure flexible connector.

(b) Provision shall be made between the regulator outlet and the gas service lines by either a flexible connector or a tubing loop to provide for expansion, contraction, jarring, and vibration.

(c) Pipe, tubing, and fittings shall conform to WAC 296-24-47505(8) except that the use of aluminum alloy piping is prohibited. Steel tubing shall have a minimum wall thickness of 0.049 inch. Steel piping or tubing shall be adequately protected against exterior corrosion.

(d) Approved gas tubing fittings shall be employed for making tubing connections.

(e) The fuel line shall be firmly fastened in a protected location and where under the vehicle and outside and below any insulation or false bottom, fastenings shall be such as to prevent abrasion or damage to the gas line due to vibration. Where the fuel line passes through structural members or floors, a rubber grommet or equivalent shall be installed to prevent chafing.

(f) The fuel line shall be installed to enter the vehicle through the floor directly beneath or adjacent to the appliance which it serves. When a branch line is required the tee connection shall be in the main fuel line and located under the floor and outside the vehicle.

(g) All parts of the system assembly shall be so designed and secured as to preclude such parts working loose during transit.

(11) Appliances.

(a) LP-gas appliances shall be approved for use on commercial vehicles.

(b) In the case of vehicles not intended for human occupancy and where the gas-fired heating appliance is used to protect the cargo, such heater may be of the unvented type but provision shall be made to dispose of the products of combustion to the outside.

(c) In the case of vehicles intended for human occupancy, all gas-fired heating appliances, including water heaters, shall be designed or installed to provide for complete separation of the combustion system from the atmosphere of the living space. Such appliances shall be installed with the combustion air inlet assembly furnished as a component of the appliance and, also, with either—

(i) The flue gas outlet assembly furnished as a component of the appliance, or

(ii) A listed roof jack if the appliance is listed for such use.

The combustion air inlet assembly, flue gas outlet assembly, and roof jack shall extend to the outside atmosphere.

(d) Provision shall be made to insure an adequate supply of outside air for combustion.

(e) All gas-fired heating appliances and water heaters shall be equipped with an approved automatic device designed to shut off the flow of gas to the main burner and to the pilot in the event the pilot flame is extinguished.

(f) Gas-fired appliances installed in the cargo space shall be located so they are readily accessible.

(g) Appliances shall be constructed or protected to reduce to a minimum possible damage or impaired operation resulting from cargo shifting or handling.

(h) Appliances inside the vehicle shall be located so that a fire at an appliance will not block egress of persons therefrom.

(12) General precautions.

(a) DOT containers shall be marked, maintained, and requalified for use in accordance with the regulations of DOT.

(b) Containers which have not been requalified as required by DOT regulations shall be removed from service. Requalified containers shall be stamped with the date of requalification. When DOT cylinders are requalified by retesting, such retest shall be made in accordance with DOT regulations.

(c) Containers shall not be charged with fuel unless they bear the proper markings of the code or specifications under which they were constructed, and in addition, with their water capacity. In the case of cylinders or portable containers filled by weight, the container shall be marked with its tareweight.

(d) DOT containers which have been involved in a fire shall not be recharged until they have been requalified for service according to DOT regulations.

(e) American Petroleum Institute-American Society of Mechanical Engineers (API-ASME) containers or ASME containers which have been involved in a fire shall not be recharged until they have been retested in accordance with the requirements for their original hydrostatic test and found to be suitable for continued service.

(f) Containers shall not be charged without the consent of the owner.

(g) A permanent caution plate shall be provided on the appliance or adjacent to the container outside of any enclosure. It shall include the word "caution" and following instructions, or instructions embodying substantially similar language.

(i) Be sure all appliance valves are closed before opening container valve.

(ii) Connections at appliances, regulators, and containers must be checked periodically for leaks with soapy water or its equivalent.

(iii) A match or flame shall not be used to check for leaks.

(iv) Container valves shall be closed when the equipment is not in use.

(13) Charging of containers. Containers shall be charged as provided in WAC 296-24-47505(12).

(14) Fire extinguisher. Mobile cook-units shall be provided with at least one approved portable fire extinguisher having a minimum rating of 8-B, C.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-47515, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-47515, filed 3/1/76; Order 73-5, § 296-24-47515, filed 5/9/73 and Order 73-4, § 296-24-47515, filed 5/7/73.]

WAC 296-24-47517 Liquefied petroleum gas service stations. (1) Application. This section applies to storage containers, and dispensing devices, and pertinent equipment in service stations where LP-gas is stored and is dispensed into fuel tanks of motor vehicles. See WAC 296-24-47511

for requirements covering use of LP-gas as a motor fuel. All requirements of WAC 296-24-47505 apply to this section unless otherwise noted.

(2) Design pressure and classification of storage containers. Storage containers shall be designed and classified in accordance with Table H-34.

(3) Container valves and accessories.

(a) A filling connection on the container shall be fitted with one of the following:

(i) A combination back-pressure check and excess flow valve.

(ii) One double or two single back-pressure valves.

(iii) A positive shutoff valve, in conjunction with either:

(A) An internal back-pressure valve, or

(B) An internal excess flow valve.

In lieu of an excess flow valve, filling connections may be fitted with a quick-closing internal valve, which shall remain closed except during operating periods. The mechanism for such valves may be provided with a secondary control which will cause it to close automatically in case of fire. When a fusible plug is used its melting point shall not exceed 220°F.

TABLE H-34

Container type	For gases with vapor press. not to exceed lb. per sq. in. gage at 100°F. (37.8°C.)	Minimum design pressure of container, lb. per sq. in gage	
		1949 and earlier editions of ASME Code (Par. U-68, U-69)	1949 edition of ASME Code (Par. U-200, U-201); 1950, 1952 1956, 1959, 1962, 1965, and 1968 (Division I) editions of ASME Code; All editions of API-ASME Code[2]
200[1]	215	200	250

[1]Container type may be increased by increments of 25. The minimum design pressure of containers shall be 100% of the container type designation when constructed under 1949 or earlier editions of ASME Code (Par. U-68 and U-69). The minimum design pressure of containers shall be 125% of the container type designation when constructed under: (1) The 1949 ASME Code (Par. U-200 and U-201), (2) 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of the ASME Code, and (3) all editions of the API-ASME Code.

[2]Construction of containers under the API-ASME Code is not authorized after July 1, 1961.

(b) A filling pipe inlet terminal not on the container shall be fitted with a positive shutoff valve in conjunction with either:

(i) A back pressure check valve, or

(ii) An excess flow check valve.

(c) All openings in the container except those listed below shall be equipped with approved excess flow check valves:

(i) Filling connections as provided in (3)(a) of this section.

(ii) Safety relief connections as provided in WAC 296-24-47505 (7)(b).

(iii) Liquid-level gaging devices as provided in WAC 296-24-47505 (7)(d) and (19)(d).

(iv) Pressure gage connections as provided in WAC 296-24-47505 (7)(e).

(d) All container inlets and outlets except those listed below shall be labeled to designate whether they connect with vapor or liquid (labels may be on valves):

(i) Safety relief valves.

(ii) Liquid-level gaging devices.

(iii) Pressure gages.

(e) Each storage container shall be provided with a suitable pressure gage.

(4) Safety-relief valves.

(a) All safety-relief devices shall be installed as follows:

(i) On the container and directly connected with the vapor space.

(ii) Safety-relief valves and discharge piping shall be protected against physical damage. The outlet shall be provided with loose-fitting rain caps. There shall be no return bends or restrictions in the discharge piping.

(iii) The discharge from two or more safety relief valves having the same pressure settings may be run into a common discharge header. The cross-sectional area of such header shall be at least equal to the sum of the individual discharges.

(iv) Discharge from any safety relief device shall not terminate in any building nor beneath any building.

(b) Aboveground containers shall be provided with safety relief valves as follows:

(i) The rate of discharge, which may be provided by one or more valves, shall be not less than that specified in WAC 296-24-47505 (10)(b).

(ii) The discharge from safety relief valves shall be vented to the open air unobstructed and vertically upwards in such a manner as to prevent any impingement of escaping gas upon the container; loose-fitting rain caps shall be used. On a container having a water capacity greater than 2,000 gallons, the discharge from the safety relief valves shall be vented away from the container vertically upwards to a point at least 7 feet above the container. Suitable provisions shall be made so that any liquid or condensate that may accumulate inside of the relief valve or its discharge pipe will not render the valve inoperative. If a drain is used, a means shall be provided to protect the container, adjacent containers, piping, or equipment against impingement of flame resulting from ignition of the product escaping from the drain.

(c) Underground containers shall be provided with safety relief valves as follows:

(i) The discharge from safety-relief valves shall be piped vertically upward to a point at least 10 feet above the ground. The discharge lines or pipes shall be adequately supported and protected against physical damage.

(ii) Where there is a probability of the manhole or housing becoming flooded, the discharge from regulator vent lines should be above the highest probable water level.

(iii) If no liquid is put into a container until after it is buried and covered, the rate of discharge of the relief valves may be reduced to not less than 30 percent of the rate shown in WAC 296-24-47505 (10)(b). If liquid fuel is present during installation of containers, the rate of discharge shall be the same as for aboveground containers. Such containers shall not be uncovered until emptied of liquid fuel.

(5) Capacity of liquid containers. Individual storage containers shall not exceed 30,000 gallons water capacity.

(6) Installation of storage containers.

(a) Each storage container used exclusively in service station operation shall comply with the following table which specifies minimum distances to a building, groups of buildings, and adjoining property lines which may be built upon.

Water capacity per container (gallons)	Minimum distances	
	Aboveground and underground (feet)	Between aboveground containers (feet)
Up to 2,000	25	3
Over 2,000	50	5

Note: The above distances may be reduced to not less than 10 feet for service station buildings of other than wood frame construction.

(i) Readily ignitible material including weeds and long dry grass, shall be removed within 10 feet of containers.

(ii) The minimum separation between LP-gas containers and flammable liquid tanks shall be 20 feet and the minimum separation between a container and the centerline of the dike shall be 10 feet.

(iii) LP-gas containers located near flammable liquid containers shall be protected against the flow or accumulation of flammable liquids by diking, diversion curbs, or grading.

(iv) LP-gas containers shall not be located within diked areas for flammable liquid containers.

(v) Field welding is permitted only on saddle plates or brackets which were applied by the container manufacturer.

(vi) When permanently installed containers are interconnected, provision shall be made to compensate for expansion, contraction, vibration, and settling of containers and interconnecting piping. Where flexible connections are used, they shall be of an approved type and shall be designed for a bursting pressure of not less than five times the vapor pressure of the product at 100°F. The use of nonmetallic hose is prohibited for interconnecting such containers.

(vii) Where high water table or flood conditions may be encountered protection against container flotation shall be provided.

(b) Aboveground containers shall be installed in accordance with this section.

(i) Containers may be installed horizontally or vertically.

(ii) Containers shall be protected by crash rails or guards to prevent physical damage unless they are so protected by virtue of their location. Vehicles shall not be serviced within 10 feet of containers.

(iii) Container foundations shall be of substantial masonry or other noncombustible material. Containers shall be mounted on saddles which shall permit expansion and contraction, and shall provide against the excessive concentration of stresses. Corrosion protection shall be provided for tank-mounting areas. Structural metal container supports shall be protected against fire. This protection is not required on prefabricated storage and pump assemblies, mounted on a common base, with container bottom not more than 24 inches above ground and whose water capacity is 2,000 gallons or less if the piping connected to the storage and pump assembly is sufficiently flexible to minimize the possibility of breakage or leakage in the event of failure of the container supports.

(c) Underground containers shall be installed in accordance with this section.

(i) Containers shall be given a protective coating before being placed under ground. This coating shall be equivalent to hot-dip galvanizing or to two coatings of red lead followed by a heavy coating of coal tar or asphalt. In lowering the container into place, care shall be exercised to minimize abrasion or other damage to the coating. Damage to the coating shall be repaired before back-filling.

(ii) Containers shall be set on a firm foundation (firm earth may be used) and surrounded with earth or sand firmly tamped in place. Backfill should be free of rocks or other abrasive materials.

(iii) A minimum of 2 feet of earth cover shall be provided. Where ground conditions make compliance with this requirement impractical, equivalent protection against physical damage shall be provided. The portion of the container to which manhole and other connections are attached need not be covered. If the location is subjected to vehicular traffic, containers shall be protected by a concrete slab or other cover adequate to prevent the weight of a loaded vehicle imposing concentrated direct loads on the container shell.

(7) Protection of container fittings. Valves, regulators, gages, and other container fittings shall be protected against tampering and physical damage.

(8) Transport truck unloading point.

(a) During unloading, the transport truck shall not be parked on public thoroughfares and shall be at least 5 feet from storage containers and shall be positioned so that shutoff valves are readily accessible.

(b) The filling pipe inlet terminal shall not be located within a building nor within 10 feet of any building or driveway. It shall be protected against physical damage.

(9) Piping, valves, and fittings.

(a) Piping may be underground, above ground, or a combination of both. It shall be well supported and protected against physical damage and corrosion.

(b) Piping laid beneath driveways shall be installed to prevent physical damage by vehicles.

(c) Piping shall be wrought iron or steel (black or galvanized), brass or copper pipe; or seamless copper, brass, or steel tubing and shall be suitable for a minimum pressure of 250 p.s.i.g. Pipe joints may be screwed, flanged, brazed, or welded. The use of aluminum alloy piping or tubing is prohibited.

(d) All shutoff valves (liquid or gas) shall be suitable for liquefied petroleum gas service and designed for not less than the maximum pressure to which they may be subjected. Valves which may be subjected to container pressure shall have a rated working pressure of at least 250 p.s.i.g.

(e) All materials used for valve seats, packing, gaskets, diaphragms, etc., shall be resistant to the action of LP-gas.

(f) Fittings shall be steel, malleable iron, or brass having a minimum working pressure of 250 p.s.i.g. Cast iron pipe fittings, such as ells, tees and unions shall not be used.

(g) All piping shall be tested after assembly and proved free from leaks at not less than normal operating pressures.

(h) Provision shall be made for expansion, contraction, jarring, and vibration, and for settling. This may be accomplished by flexible connections.

(10) Pumps and accessories. All pumps and accessory equipment shall be suitable for LP-gas service, and designed for not less than the maximum pressure to which they may be subjected. Accessories shall have a minimum rated working pressure of 250 p.s.i.g. Positive displacement pumps shall be equipped with suitable pressure actuated bypass valves permitting flow from pump discharge to storage container or pump suction.

(11) Dispensing devices.

(a) Meters, vapor separators, valves, and fittings in the dispenser shall be suitable for LP-gas service and shall be designed for a minimum working pressure of 250 p.s.i.g.

(b) Provisions shall be made for venting LP-gas contained in a dispensing device to a safe location.

(c) Pumps used to transfer LP-gas shall be equipped to allow control of the flow and to prevent leakage or accidental discharge. Means shall be provided outside the dispensing device to readily shut off the power in the event of fire or accident.

(d) A manual shutoff valve and an excess flow check valve shall be installed downstream of the pump and ahead of the dispenser inlet.

(i) Dispensing hose shall be resistant to the action of LP-gas in the liquid phase and designed for a minimum bursting pressure of 1,250 p.s.i.g.

(ii) An excess flow check valve or automatic shutoff valve shall be installed at the terminus of the liquid line at the point of attachment of the dispensing hose.

(e) LP-gas dispensing devices shall be located not less than 10 feet from aboveground storage containers greater than 2,000 gallons water capacity. The dispensing devices shall not be less then 20 feet from any building (not including canopies), basement, cellar, pit, or line of adjoining property which may be built upon and not less than 10 feet from sidewalks, streets, or thoroughfares. No drains or blowoff lines shall be directed into or in proximity to the sewer systems used for other purposes.

(i) LP-gas dispensing devices shall be installed on a concrete foundation or as part of a complete storage and dispensing assembly mounted on a common base, and shall be adequately protected from physical damage.

(ii) LP-gas dispensing devices shall not be installed within a building except that they may be located under a weather shelter or canopy provided this area is not enclosed on more than two sides. If the enclosing sides are adjacent to each other, the area shall be properly ventilated.

(f) The dispensing of LP-gas into the fuel container of a vehicle shall be performed by a competent attendant who shall remain at the LP-gas dispenser during the entire transfer operation.

(12) Additional standards. There shall be no smoking on the driveway of service stations in the dispensing areas or transport truck unloading areas. Conspicuous signs prohibiting smoking shall be posted within sight of the customer being served. Letters on such signs shall be not less than 4 inches high. The motors of all vehicles being fueled shall be shut off during the fueling operations.

(13) Electrical. Electrical equipment and installations shall conform to WAC 296-24-47505 (17) and (18).

(14) Fire protection. Each service station shall be provided with at least one approved portable fire extinguisher having at least an 8-B, C, rating.

[Order 73-5, § 296-24-47517, filed 5/9/73 and Order 73-4, § 296-24-47517, filed 5/7/73.]

PART F-2
STORAGE AND HANDLING OF ANHYDROUS AMMONIA

WAC 296-24-510 Storage and handling of anhydrous ammonia.

[Order 73-5, § 296-24-510, filed 5/9/73 and Order 73-4, § 296-24-510, filed 5/7/73.]

WAC 296-24-51001 Scope. (1) This standard is intended to apply to the design, construction, location, installation, and operation of anhydrous ammonia systems including refrigerated ammonia storage systems.

(2) This standard does not apply to:

(a) Ammonia manufacturing plants.

(b) Refrigeration plants where ammonia is used solely as a refrigerant. Such systems are covered in American National Standard Safety Code for Mechanical Refrigeration, B-9.1. (See Appendix C for availability.) The provisions of ANSI B-9.1 are not appropriate to refrigerated ammonia storage systems as covered in this standard.

(c) Ammonia transportation pipelines.

[Order 73-5, § 296-24-51001, filed 5/9/73 and Order 73-4, § 296-24-51001, filed 5/7/73.]

WAC 296-24-51003 General. (1) The term "anhydrous ammonia" as used in this standard refers to the compound formed by a combination of two gaseous elements, nitrogen and hydrogen, in the proportion of one part nitrogen to three parts hydrogen by volume. Anhydrous ammonia may be in either gaseous or liquid form. It is not to be confused with aqua ammonia which is a solution of ammonia gas in water. Whenever the term "ammonia" appears in this standard, it is understood to mean anhydrous ammonia.

(2) It is important that personnel understand the properties of this gas and that they be thoroughly trained in safe practices for its storage and handling. Some of the important physical properties of ammonia are listed in (4) of this section.

(3) Gaseous ammonia liquefies under pressure at ambient temperature. Advantage of this characteristic is taken by industry and for convenience this commodity is usually shipped and stored under pressure as a liquid. When refrigerated to or below its normal boiling point (-28°F) it may be shipped and stored as a liquid at atmospheric pressure.

(4) Physical properties of ammonia:

Molecular symbol	NH_3
Molecular weight	17.032
Boiling point at one atmosphere (one atmosphere = 14.7 psia)	-28°F
Melting point at one atmosphere	-107.9°F
Critical temperature	271.4°F
Critical pressure	1657 psia

Latent heat at -28°F and one atmosphere	589.3 BTU per pound
Relative density of vapor compared to dry air at 32°F and one atmosphere	0.5970
Vapor density at -28°F and one atmosphere	0.05555 lb. per cu. ft.
Specific gravity of liquid at -28°F compared to water at 39.2°F	0.6819
Liquid density at -28°F and one atmosphere	42.57 lb. per cu. ft.
Specific volume of vapor at 32°F and one atmosphere	20.78 cu. ft. per pound
Flammable limits by volume in air at atmospheric pressure	16% to 25%
Ignition temperature (in a standard quartz container)	1562°F
Specific heat, gas, 15 C, one atm at constant pressure, C_p	0.5232 Btu/lb. degree °F
at constant volume, C_v	0.3995 Btu/lb. degree °F

(5) Experience has shown that ammonia is extremely hard to ignite and under normal conditions is a very stable compound. It takes temperatures of 840-930°F to cause it to dissociate slightly at atmospheric pressure. The flammable limits at atmospheric pressure are 16% to 25% by volume of ammonia in air. Experiments conducted by a nationally recognized laboratory indicated that an ammonia-air mixture in a standard quartz test container does not ignite below 1562°F. Ammonia is classified by the United States Department of Transportation and the U.S. Coast Guard as a nonflammable compressed gas for the purpose of transportation.

(6) Ammonia should be handled only by properly trained personnel. In no case shall ammonia be used in conjunction with chemicals unless the possible reactions have first been adequately investigated. Under some circumstances ammonia and ammonium compounds can form explosive products with other chemicals. For additional information refer to NFPA 491M "Manual on Hazardous Chemical Reactions" (see Appendix C for availability) and CG-388, the "Chemical Data Guide for Bulk Shipment by Water" (1969 Edition).

(7) Ammonia gas irritates the skin and mucous membrane. At 50 ppm its odor is detectable by most people. The maximum allowable concentration for an 8 hour working exposure is specified as 50 PPM by the American Conference of Government Industrial Hygienists. Because it serves as its own warning agent, no person will voluntarily remain in concentrations which are hazardous. At 5000 ppm it is rapidly fatal. Since ammonia gas is lighter than air, adequate ventilation is the best means of preventing any accumulation.

(8) The common metals are not attacked by dry ammonia. Zinc, copper and copper base alloys such as brass are subject to rapid destructive action by ammonia in the presence of water.

[Order 73-5, § 296-24-51003, filed 5/9/73 and Order 73-4, § 296-24-51003, filed 5/7/73.]

WAC 296-24-51005 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-510 in the section number and shall be construed to have the meanings below.

(1) "Approved" as used in these standards means:

(a) Listed by a recognized testing laboratory, or

(b) Recommended by the manufacturer as suitable for use with anhydrous ammonia and so marked, or

(c) Accepted by the authority having jurisdiction.

(2) "Appurtenance" refers to all devices such as pumps, compressors, safety relief devices, liquid-level gaging devices, valves and pressure gages.

(3) "Capacity" refers to the total volume of the container measured in U.S. gallons, unless otherwise specified.

(4) "Cylinder" means a container of 1000 pounds water capacity or less constructed in accordance with United States Department of Transportation Specifications.

(5) The "code" refers to the Unfired Pressure Vessel Code of the American Society of Mechanical Engineers (Section VIII of the ASME Boiler Construction Code), 1952, 1956, 1959, 1962, 1965, 1968 and 1971 editions, the joint code of the American Petroleum Institute and the American Society of Mechanical Engineers (API-ASME Code) 1951 edition, and subsequent amendments to or later editions of the same, as adopted.

(6) "Container" includes all vessels, tanks, cylinders or spheres used for transportation, storage or application of anhydrous ammonia.

(7) "Design pressure" is identical to the term "maximum allowable working pressure" used in the code.

(8) An "implement of husbandry" is a farm wagon-type tank vehicle of not over 3000 gallons capacity, used as a field storage "nurse tank" supplying the fertilizer to a field applicator and moved on highways only for bringing the fertilizer from a local source of supply to farms or fields or from one farm or field to another.

(9) "Filling density" means the per cent ratio of the weight of the gas in a container to the weight of water at 60°F that the container will hold. One lb. H^2O = 27.737 cu. in. at 60°F. For determining the weight capacity of the tank in pounds, the weight of a gallon (231 cubic inches) of water at 60°F in air shall be 8.32828 pounds.

(10) "Gas" refers to anhydrous ammonia in either the gaseous or liquefied state.

(11) "Gas mask" refers to gas masks approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH). See American National Standards Institute for Respiratory Protection, Z88.2. (See Appendix C for availability.)

(12) "DOT regulations" refer to hazardous materials regulations of the department of transportation (Title 49—Transportation, Code of Federal Regulations, Parts 171 to 190), including Specifications for Shipping Containers.

(13) "Systems" as used in these standards refers to an assembly of equipment consisting essentially of the container or containers, appurtenances, pumps, compressors, and interconnecting piping.

(14) The abbreviations "psig" and "psia" refer to pounds per square inch gage and pounds per square inch absolute, respectively.

(15) The terms "charging" and "filling" are used interchangeably and have the same meaning.

(16) "Trailer" as used in these standards refers to every vehicle designed for carrying property and for being drawn by a motor vehicle and so constructed that no part of its weight except the towing device rests upon the towing vehicle.

(17) "Tank motor vehicle" means any motor vehicle designed or used for the transportation of anhydrous ammonia in any tank designed to be permanently attached to any motor vehicle or any container not permanently attached to any motor vehicle which by reason of its size, construction or attachment to any motor vehicle must be loaded and/or unloaded without being removed from the motor vehicle.

(18) "Semitrailer" refers to every vehicle designed for carrying property and for being drawn by a motor vehicle and so constructed that some part of its weight and that of its load rests upon or is carried by another vehicle.

(19) "Safety relief valve" refers to an automatic spring loaded or equivalent type pressure activated device for gas or vapor service characterized by pop action upon opening, sometimes referred to as a pop valve. (Refer to American National Standards Institute, Terminology for Pressure Relief Devices, B95.1.)

(20) "Hydrostatic relief valve" refers to an automatic pressure activated valve for liquid service characterized by throttle or slow weep opening (nonpop action). (Refer to American National Standards Institute, Terminology for Pressure Relief Devices, B95.1.)

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-51005, filed 7/20/94, effective 9/20/94; Order 74-27, § 296-24-51005, filed 5/7/74; Order 73-5, § 296-24-51005, filed 5/9/73 and Order 73-4, § 296-24-51005, filed 5/7/73.]

WAC 296-24-51007 Use of water in emergencies. (1) The concentration of ammonia vapor in air can effectively be reduced by the use of adequate volumes of water applied through spray or fog nozzles.

(2) Water should be used on liquid ammonia spills only if sufficient water is available. For the purpose of this section, sufficient water may be taken to be 100 parts of water to one part of ammonia.

(3) If an ammonia container is exposed to fire and cannot be removed, water should be used to cool it.

(4) Under some circumstances ammonia in a container is colder than the available water supply. Under these circumstances water should not be sprayed on the container walls since it would heat the ammonia and aggravate any gas leak.

(5) If it is found necessary to dispose of ammonia, as from a leaking container, liquid ammonia should be discharged into a vessel containing water sufficient to absorb it. Sufficient water may be taken to be ten parts of water per part ammonia. The ammonia should be injected into the water as near the bottom of the vessel as practical.

[Order 73-5, § 296-24-51007, filed 5/9/73 and Order 73-4, § 296-24-51007, filed 5/7/73.]

WAC 296-24-51009 Basic rules. This section applies to all sections of this chapter which include WAC 296-24-510 in the section number unless otherwise noted.

(1) Approval of equipment and systems. Each appurtenance shall be approved in accordance with (a), (b), (c), and (d) of this subsection.

(a) It was installed before February 8, 1973 and was approved and tested, and installed in accordance with either the provisions of the American National Standard for the Storage and Handling of Anhydrous Ammonia, K61.1, or the Fertilizer Institute Standards for the Storage and Handling of Agricultural Anhydrous Ammonia, M-1, in effect at the time of installation; or

(b) It is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory; or

(c) It is a type which no nationally recognized testing laboratory does, or will undertake to accept, certify, list, label, or determine to be safe; and such equipment is inspected or tested by any federal, state, municipal, or other local authority responsible for enforcing occupational safety provisions of a federal, state, municipal or other local law, code, or regulation pertaining to the storage, handling, transport, and use of anhydrous ammonia, and found to be in compliance with either the provisions of the American National Standard for the Storage and Handling of Anhydrous Ammonia, K61.1, or the Fertilizer Institute Standards for the Storage and Handling of Agricultural Anhydrous Ammonia, M-1, in effect at the time of installation; or

(d) It is a custom-designed and custom-built unit, which no nationally recognized testing laboratory, or federal, state, municipal or local authority responsible for the enforcement of a federal, state, municipal, or local law, code or regulation pertaining to the storage, transportation and use of anhydrous ammonia is willing to undertake to accept, certify, list, label or determine to be safe, and the employer has on file a document attesting to its safe condition following the conduct of appropriate tests. The document shall be signed by a registered professional engineer or other person having special training or experience sufficient to permit him/her to form an opinion as to safety of the unit involved. The document shall set forth the test bases, test data and results, and also the qualifications of the certifying person.

(e) For the purposes of this section the word "listed" means that equipment is of a kind mentioned in a list which is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment, and states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner. "Labeled" means there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment, and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner. "Certified" means it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and it bears a label, tag, or other record of certification.

(f) For purposes of this section, refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(2) Requirements for construction, original test and requalification of not-refrigerated containers.

(a) Containers used with systems covered in WAC 296-24-51011 and 296-24-51017 through 296-24-51021 shall be constructed and tested in accordance with the code except that construction under Table UW-12 at a basic joint efficiency of under eighty percent is not authorized.

Containers built according to the code do not have to comply with paragraphs UG-125 to UG-128, inclusive, and paragraphs UG-132 and UG-133 of the code.

(b) Containers exceeding thirty-six inches in diameter or two hundred fifty gallons water capacity shall be constructed to comply with one or more of the following:

(i) Containers shall be stress relieved after fabrication in accordance with the code, or

(ii) Cold-formed heads, when used, shall be stress relieved or,

(iii) Hot-formed heads shall be used.

(c) Welding to the shell, head, or any other part of the container subject to internal pressure shall be done in compliance with WAC 296-24-51005(5). Other welding is permitted only on saddle plates, lugs, or brackets attached to the container by the container manufacturer.

(d) Containers used with systems covered by subsection (3)(b)(iv) of this section shall be constructed and tested in accordance with the DOT specifications.

(e) The provisions of (a) of this subsection shall not be construed as prohibiting the continued use or reinstallation of containers constructed and maintained in accordance with the 1949, 1950, 1952, 1956, 1959, 1962, 1965 and 1968 editions of the Unfired Pressure Vessel Code of the ASME or any revisions thereof in effect at the time of fabrication.

(3) Markings on nonrefrigerated containers and systems other than DOT containers.

(a) System nameplates, when required, shall be permanently attached to the system so as to be readily accessible for inspection and shall include markings as prescribed in (b) of this subsection.

(b) Each container or system covered in WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be marked as specified in the following:

(i) With a marking identifying compliance with the rules of the code under which the container is constructed.

(ii) With a notation on the container and system nameplate when the system is designed for underground installation.

(iii) With the name and address of the supplier of the container or the trade name of the container and with the date of fabrication.

(iv) With the water capacity of the container in pounds at 60°F or gallons, United States standard.

(v) With the design pressure in pounds per square inch gage.

(vi) With the wall thickness of the shell and heads.

(vii) With marking indicating the maximum level to which the container may be filled with liquid anhydrous ammonia at temperatures between 20°F and 100°F except on containers provided with fixed maximum level indicators, such as fixed length dip tubes, or containers that are filled by weight. Markings shall be in increments of not more than 20°F.

(viii) With the outside surface area in square feet.

(ix) With minimum temperature in Fahrenheit for which the container is designed.

(x) Marking specified on container shall be on the container itself or on a nameplate permanently affixed thereto.

(c) All main operating valves on permanently installed containers having a capacity of over three thousand water gallons shall be identified to show whether the valve is in liquid or vapor service. The recommended method of identification may be legend or color code as specified in (c)(i) and (ii) of this subsection:

(i) Legend: The legend **liquid** (or **liquid valve**), **vapor** (or **vapor valve**), as appropriate, shall be placed on or within twelve inches of the valve by means of a stencil tag, or decal.

(ii) Color code: Liquid valves shall be painted orange and vapor valves shall be painted yellow. The legend **orange-liquid, yellow-vapor** shall be displayed in one or more conspicuous places at each permanent storage location. The legend shall have letters at least two inches high and shall be placed against a contrasting background. This is in accordance with American National Standard A13.1 "Schemes for Identification of Piping Systems"—1956, Page 5.

(4) Marking refrigerated containers. (See WAC 296-24-51013(3). Marking refrigerated containers.)

(5) Location of containers.

(a) Consideration shall be given to the physiological effects of ammonia as well as to adjacent fire hazards in selecting the location for a storage container. Containers shall be located outside of buildings or in buildings or sections thereof especially approved for this purpose.

(b) Containers shall be located at least fifty feet from a dug well or other sources of potable water supply, unless the container is a part of a water treatment installation.

(c) The location of permanent storage containers shall be outside densely populated areas.

(d) Container locations shall comply with the following table:

Nominal Capacity of Container	Minimum Distances (feet) from Container to:		
	Line of Adjoining Property Which may be Built upon, Highways & Mainline of Railroad	Place of Public Assembly	Institution Occupancy
Over 500 to 2,000	25	150	250
Over 2,000 to 30,000	50	300	500
Over 30,000 to 100,000	50	450	750
Over 100,000	50	600	1,000

(e) Storage areas shall be kept free of readily ignitable materials such as waste, weeds and long dry grass.

(6) Container appurtenances.

(a) All appurtenances shall be designed for not less than the maximum working pressure of that portion of the system on which they are installed. All appurtenances shall be fabricated from materials proved suitable for anhydrous ammonia service.

(b) All connections to containers except safety relief devices, gaging devices, or those fitted with a No. 54 drill

size orifice shall have shutoff valves located as close to the container as practicable.

(c) Excess flow valves where required by these standards shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections and line including valves and fittings being protected by an excess flow valve shall have a greater capacity than the rated flow of the excess flow valve.

(d) Liquid level gaging devices that require bleeding of the product to the atmosphere and which are so constructed that outward flow will not exceed that passed by a No. 54 drill size opening need not be equipped with excess flow valves.

(e) Openings from container or through fittings attached directly on container to which pressure gage connections are made need not be equipped with excess flow valves if such openings are not larger than No. 54 drill size.

(f) Excess flow and back pressure check valves where required by these standards shall be located inside of the container or at a point outside as close as practicable to where the line enters the container. In the latter case, installation shall be made in such manner that any undue stress beyond the excess flow or back pressure check valve will not cause breakage between the container and the valve.

(g) Excess flow valves shall be designed with a bypass, not to exceed a No. 60 drill size opening to allow equalization of pressures.

(h) Shutoff valves provided with an excess flow valve shall be designed for proper installation in a container connection so that the excess flow valve will close should the shutoff valve break.

(i) All excess flow valves shall be plainly and permanently marked with the name or trademark of the manufacturer, the catalog number, and the rated capacity.

(7) Piping, tubing and fittings.

(a) All piping, tubing and fittings shall be made of material suitable for anhydrous ammonia service.

(b) All piping, tubing and fittings shall be designed for a pressure not less than the maximum pressure to which they may be subjected in service.

(c) All piping shall be well supported and provision shall be made for expansion and contraction. All refrigeration system piping shall conform to the Refrigeration Piping Code (ANSI B31.5 1966 addenda B31.1a-1968), a section of the American Standard Code for Pressure Piping, as it applies to ammonia.

(d) Piping used on nonrefrigerated systems shall be at least ASTM A-53-1969 Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal. Such pipe shall be at least Schedule 40 when joints are welded, or welded and flanged. Such pipe shall be at least Schedule 80 when joints are threaded. Brass, copper, or galvanized steel pipe or tubing shall not be used.

(e) All metal flexible connections for permanent installations shall have a minimum working pressure of 250 p.s.i.g. (safety factor of 4). For temporary installations, hose meeting the requirement of subsection (8) of this section may be used.

(f) Cast iron fittings shall not be used but this shall not prohibit the use of fittings made specially for ammonia service of malleable or nodular iron such as Specification ASTM A47 or ASTM A395.

(g) Provisions shall be made for expansion, contraction, jarring, vibration, and for settling.

(h) Adequate provisions shall be made to protect all exposed piping from physical damage that might result from moving machinery, the presence of automobiles or trucks, or any other undue strain that may be placed upon the piping.

(i) Joint compounds shall be resistant to ammonia.

(j) After assembly, all piping and tubing shall be tested and proved to be free from leaks at a pressure not less than the normal operating pressure of the system.

(8) Hose specification.

(a) Hose used in ammonia service and subject to container pressure shall conform to the joint Rubber Manufacturers Association and the Fertilizer Institute "Hose Specifications for Anhydrous Ammonia" (see Appendix B).

(b) Hose subject to container pressure shall be designed for a minimum working pressure of 350 p.s.i.g. and a minimum burst pressure of 1750 p.s.i.g. Hose assemblies, when made up, shall be capable of withstanding a test pressure of 500 p.s.i.g.

(c) Hose and hose connections located on the low pressure side of flow control or pressure reducing valves on devices discharging to atmospheric pressure shall be designed for the maximum low side working pressure. All connections shall be designed, constructed, and installed so that there will be no leakage when connected.

(d) Where liquid transfer hose is not drained of liquid upon completion of transfer operations, such hose shall be equipped with an approved shutoff valve at the discharge end. Provision shall be made to prevent excessive hydrostatic pressure in the hose. (See subsection (9)(j) of this section.)

(e) On all hose one-half inch O.D. and larger, used for the transfer of anhydrous ammonia liquid or vapor, there shall be etched, cast, or impressed at five-foot intervals the following information:

"Anhydrous Ammonia"
xxx p.s.i.g. (Maximum working pressure)
Manufacturer's Name or Trademark
Year of Manufacture

(9) Safety relief devices.

(a) Every container used in systems covered by WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be provided with one or more safety relief valves of the spring-loaded or equivalent type. The discharge from safety relief valves shall be vented away from the container, upward and unobstructed to the atmosphere. All safety relief valve discharge openings shall have suitable raincaps that will allow free discharge of the vapor and prevent the entrance of water. Provision shall be made for draining condensate which may accumulate. The rate of the discharge shall be in accordance with the provisions of Appendix A.

(b) Container safety relief valves shall be set to start-to-discharge as follows, with relations to the design pressure of the container.

Containers	Minimum	Maximum*
ASME U-68, U-69	110%	125%
ASME U-200, U-201	95%	100%
ASME 1952, 1956, 1959, 1962, 1965, 1968 or 1971	95%	100%
API-ASME	95%	100%
U.S. Coast Guard (As required by USCG regulations)		
DOT (As required by DOT regulations)		

*Note: A relief valve manufacturer's tolerance of plus ten percent is permitted.

(c) Safety relief devices used in systems covered by WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be constructed to discharge at not less than the rates required in (a) of this subsection before the pressure is in excess of one hundred twenty percent (not including the ten percent tolerance referred to in (b) of this subsection) of the maximum permitted start-to-discharge pressure setting of the device.

(d) Safety relief valves shall be so arranged that the possibility of tampering will be minimized. If the pressure setting adjustment is external, the relief valves shall be provided with means for sealing the adjustment.

(e) Shutoff valves shall not be installed between the safety relief valves and the containers or systems described in WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021, except that a shutoff valve may be used where the arrangement of this valve is such as always to afford required capacity flow through the relief valves.

Note: The above exception is made to cover such cases as a threeway valve installed under two safety relief valves, each of which has the required rate of discharge and is so installed as to allow either of the safety relief valves to be closed off, but does not allow both safety valves to be closed off at the same time. Another exception to this may be where two separate relief valves are installed with individual shutoff valves. In this case, the two shutoff valve stems shall be mechanically interconnected in a manner which will allow full required flow of one safety relief valve at all times. Still another exception is a safety relief valve manifold which allows one valve of two, three, four or more to be closed off and the remaining valve or valves will provide not less than the rate of discharge shown on the manifold nameplate.

(f) Safety relief valves shall have direct communication with the vapor space of the container.

(g) Each safety relief valve used with systems described in WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be plainly and permanently marked as follows:

(i) With the letters "AA" or the symbol "NH3."

(ii) The pressure in pounds per square inch gage (p.s.i.g.) at which the valve is set to start-to-discharge.

(iii) The rate of discharge of the valve in cubic feet per minute of air at 60°F and atmospheric pressure (14.7 p.s.i.a.).

(iv) The manufacturer's name and catalog number.

For example, a safety relief valve marked AA-250-4200 (air) would mean that this valve is suitable for use on an anhydrous ammonia container; that it is set to start-to-discharge at 250 p.s.i.g.; and that its rate of discharge (see subsection (8)(a) through (c) of this section) is four thousand two hundred cubic feet per minute of air.

(h) The flow capacity of the safety relief valve shall not be restricted by any connection to it on either the upstream or downstream side.

(i) The manufacturer or supplier of a safety relief valve manifold shall publish complete data showing the flow rating through the combined assembly of the manifold with safety relief valves installed. The manifold flow rating shall be determined by testing the manifold with all but one valve discharging. If one or more openings have restrictions not present in the remaining openings, the restricted opening or openings or those having the lowest flow shall be used to establish the flow rate marked on the manifold nameplate. The marking shall be similar to that required in (g) of this subsection for individual valves.

(j) A hydrostatic relief valve shall be installed between each pair of valves in the liquid ammonia piping or hose where liquid may be trapped so as to relieve into the atmosphere at a safe location.

(k) Discharge from safety relief devices shall not terminate in or beneath any building.

(10) Safety. See CGA Pamphlet G-2, TFI Operational Safety Manual M-2 and MCA Safety Data Sheet SD-8 (see Appendix C for availability).

(a) Personnel required to handle ammonia shall be trained in safe operating practices and the proper action to take in the event of emergencies. Personnel shall be instructed to use the equipment listed in (c) of this subsection in the event of an emergency. (Rev. 1-22-76)

(b) If a leak occurs in an ammonia system, the personnel trained for and designated to act in such emergencies shall:

(i) See that persons not required to deal with an emergency are evacuated from the contaminated area.

(ii) Put on a suitable gas mask.

(iii) Wear gauntlet type plastic or rubber gloves and wear plastic or rubber suits in heavily contaminated atmospheres.

(iv) Shut off the appropriate valves.

(c) All storage systems shall have on hand, as a minimum, the following equipment for emergency and rescue purposes:

*(i) One full face gas mask with anhydrous ammonia refill canisters.

**(ii) One pair of protective gloves.

**(iii) One pair of protective boots.

**(iv) One protective slicker and/or protective pants and jacket.

(v) Easily accessible shower and/or at least fifty gallons of clean water in an open top container.

(vi) Tight fitting vented goggles or one full face shield.

*An ammonia canister is effective for short periods of time in light concentrations of ammonia vapor, generally fifteen minutes in concentrations of three percent and will not protect breathing in heavier concentrations. If ammonia vapors are detected when mask is applied the concentration is too high for safety. The life of a canister in service is controlled by the percentage of vapors to which it is exposed. Canisters must not be opened until ready for use and should be discarded after use. Unopened canisters may be guaranteed for as long as three years. All should be dated when received because of this limited life. In addition to this protection, an independently supplied air mask of the type used by fire departments may be used for severe emergencies.

**Gloves, boots, slickers, jackets and pants shall be made of rubber or other material impervious to ammonia.

(d) Where several persons are usually present, additional safety equipment may be desirable.

(e) Each tank motor vehicle transporting anhydrous ammonia, except farm applicator vehicles, shall carry a container of at least five gallons of water and shall be equipped with a full face gas mask, a pair of tight-fitting goggles or one full face shield. The driver shall be instructed in their use and the proper action to take to provide for his/her safety.

(f) If a leak occurs in transportation equipment and it is not practical to stop the leak, the driver should move the vehicle to an isolated location away from populated communities or heavily traveled highways.

(g) If liquid ammonia contacts the skin or eyes, the affected area should be promptly and thoroughly flushed with water. Do not use neutralizing solutions or ointments on affected areas. A physician shall treat all cases of eye exposure to liquid ammonia.

(11) Filling densities. (See WAC 296-24-51005(9).)

(a) The filling densities for nonrefrigerated containers shall not exceed the following:

	Aboveground	Underground
(i) Uninsulated	56%*	58%
(ii) Insulated	57%	

(iii) DOT containers shall be filled in accordance with DOT regulations.

*This corresponds to 82% by volume at -28°F, 85% by volume at 5°F, 87.5% by volume at 30°F, and 90.6% by volume at 60°F.

(b) The filling density for refrigerated storage tanks temperature corresponding to the vapor pressure at the start-to-discharge pressure setting of the safety relief valve.

(c) If containers are to be filled according to liquid level by any gaging method other than a fixed length dip tube gage, each container should have a thermometer well so that the internal liquid temperature can be easily determined and the amount of liquid and vapor in the container corrected to a 60°F basis.

(12) Transfer of liquids.

(a) Anhydrous ammonia shall always be at a temperature suitable for the material of construction and design of the receiving containers. Ordinary steels are not suitable for refrigerated ammonia. See Appendix R of API Standard 620 "Recommended Rules for Design and Construction of Large Welded Low-Pressure Storage Tanks" for materials for low temperature service.

(b) At least one attendant shall supervise the transfer of liquids from the time the connections are first made until they are finally disconnected.

(c) Flammable gases or gases which will react with ammonia (such as air) shall not be used to unload tank cars or transport trucks.

(d) Containers shall be charged or used only upon authorization of the owner.

(e) Containers shall be gaged and charged only in the open atmosphere or in buildings approved for that purpose.

(f) Pumps used for transferring ammonia shall be recommended and labeled for ammonia service by the manufacturer.

(i) Pumps shall be designed for at least 250 p.s.i.g. working pressure.

(ii) Positive displacement pumps shall have installed, off the discharge port, a constant differential relief valve discharging into the suction port of the pump through a line of sufficient size to carry the full capacity of the pump at relief valve setting, which setting and installation shall be according to pump manufacturer's recommendations.

(iii) On the discharge side of the pump, before the relief valve line, there shall be installed a pressure gage graduated from 0 to 400 p.s.i.g.

(iv) Plant piping shall contain shutoff valves located as close as practical to pump connections.

(g) Compressors used for transferring or refrigerating ammonia shall be recommended and labeled for ammonia service by the manufacturer.

(i) Compressors, except those used for refrigeration, shall be designed for at least 250 p.s.i.g. working pressure. Crank cases of compressors not designed to withstand system pressure shall be protected with a suitable safety relief valve.

(ii) Plant piping shall contain shutoff valves located as close as practical to compressor connections.

(iii) A safety relief valve large enough to discharge the full capacity of the compressor shall be connected to the discharge before any shutoff valve.

(iv) Compressors shall have pressure gages at suction and discharge graduated to at least one and one-half times the maximum pressure that can be developed.

(v) Adequate means, such as drainable liquid trap, may be provided on the compressor suction to minimize the entry of liquid into the compressor.

(vi) Where necessary to prevent contamination, an oil separator shall be provided on the discharge side of the compressor.

(h) Loading and unloading systems shall be protected by suitable devices to prevent emptying of the storage container or the container being loaded or unloaded in the event of severance of the hose. Backflow check valves or properly sized excess flow valves shall be installed where necessary to provide such protection. In the event that such valves are not practical, remotely operated shutoff valves may be installed.

(i) Meters used for the measurement of liquid anhydrous ammonia shall be recommended and labeled for ammonia service by the manufacturer.

(i) Liquid meters shall be designed for a minimum working pressure of 250 p.s.i.g.

(ii) The metering system shall incorporate devices that will prevent the inadvertent measurement of vapor.

(13) Tank car unloading points and operations.

(a) Provisions for unloading tank cars shall conform to the regulations of the department of transportation.

(b) Unloading operations shall be performed by reliable persons properly instructed and made responsible for careful compliance with all applicable procedures.

(c) Caution signs shall be so placed on the track or car as to give necessary warning to persons approaching car from open end or ends of siding and shall be left up until after car is unloaded and disconnected from discharge connections. Signs shall be of metal or other suitable material, at least twelve by fifteen inches in size and bear

the words "STOP—Tank car connected" or "STOP—Men at work" the word "STOP," being in letters at least four inches high and the other words in letters at least two inches high. The letters shall be white on a blue background.

(d) The track of a tank car siding shall be substantially level.

(e) Brakes shall be set and wheels blocked on all cars being unloaded.

(f) Tank cars of anhydrous ammonia shall be unloaded only at approved locations meeting the requirements of subsections (9)(c) and (12)(h) of this section.

(14) Liquid level gaging device.

(a) Each container except those filled by weight shall be equipped with an approved liquid level gaging device.

(b) All gaging devices shall be arranged so that the maximum liquid level to which the container is filled is readily determined. (See subsection (4)(b)(vii) of this section.)

(c) Gaging devices that require bleeding of the product to the atmosphere such as the rotary tube, fixed tube, and slip tube devices, shall be designed so that the maximum opening of the bleed valve is not larger than No. 54 drill size unless provided with an excess flow valve. (This requirement does not apply to farm vehicles used for the application of ammonia as covered in WAC 296-24-51021.)

(d) Gaging devices shall have a design pressure equal to or greater than the design pressure of the container on which they are installed.

(e) Fixed liquid level gages shall be so designed that the maximum volume of the container filled by liquid shall not exceed eighty-five percent of its water capacity. The coupling into which the fixed liquid level gage is threaded must be placed at the eighty-five percent level of the container. If located elsewhere, the dip tube of this gage must be installed in such a manner that it cannot be readily removed.

Note: This does not apply to refrigerated storage.

(f) Gage glasses of the columnar type shall be restricted to stationary storage installation. They shall be equipped with shutoff valves having metallic handwheels, with excess-flow valves, and with extra heavy glass adequately protected with a metal housing applied by the gage manufacturer. They shall be shielded against the direct rays of the sun.

(15) Painting of containers. Aboveground uninsulated containers should have a reflective surface maintained in good condition. White is recommended for painted surfaces, but other light reflecting colors are acceptable.

(16) Electrical equipment and wiring.

(a) Electrical equipment and wiring for use in ammonia installations shall be general purpose or weather resistant as appropriate.

(b) Where concentrations of ammonia in air in excess of sixteen percent by volume are likely to be encountered, electrical equipment and wiring shall be of a type specified by and be installed according to chapter 296-24 WAC Part L, for Class I, Group D locations.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-51009, filed 11/22/91, effective 12/24/91; 88-23-054 (Order 88-25), § 296-24-51009, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51009, filed 11/13/80; Order 76-6, § 296-24-51009, filed 3/1/76; Order 74-27, § 296-24-51009, filed 5/7/74; Order 73-5, § 296-24-51009, filed 5/9/73 and Order 73-4, § 296-24-51009, filed 5/7/73.]

WAC 296-24-51011 Systems utilizing stationary, pier-mounted or skid-mounted aboveground or underground, nonrefrigerated storage. This section applies to stationary, pier-mounted, skid-mounted, aboveground or underground, nonrefrigerated storage installations utilizing containers other than those constructed in accordance with department of transportation specifications. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted.

(1) Design pressure and construction of containers. The minimum design pressure for nonrefrigerated aboveground containers shall be 250 psig. (See WAC 296-24-51009 (2)(a)(i).)

Note: U-68 and U-69 ASME Code containers with a design pressure of 200 psig are acceptable if recertified to 250 psig and equipped with safety relief valves set at 250 psig as permitted in WAC 296-24-51009 (9)(b).

(2) Container valves and accessories, filling and discharging connections.

(a) Each filling connection shall be provided with combination back-pressure check valve and excess flow valve; one double or two single back-pressure check valves; or a positive shutoff valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve.

(b) All vapor and liquid connections, except safety relief valves and those specifically exempt in WAC 296-24-51009 (6)(d) and (e) shall be equipped with approved excess flow valves; or in lieu thereof, may be fitted with approved quick-closing internal valves which, except during operating periods, shall remain closed.

(c) Each storage container shall be provided with a pressure gage graduated from 0 to 400 psig. Gages shall be designated for use in ammonia service.

(d) All containers shall be equipped with an approved vapor return valve.

(e) All containers shall be equipped with a fixed maximum liquid level gage.

(3) Safety relief devices.

(a) Every container shall be provided with one or more safety relief valves of spring-loaded or equivalent type and shall comply with the following:

(i) The discharge from safety relief valves shall be directed away from the container upward and unobstructed to the open air. Vent pipes shall not be restrictive or smaller in size than the safety relief outlet connection. All safety relief valve discharges shall have suitable rain caps that will allow free discharge of the vapor and prevent the entrance of water. Suitable provision shall be made for draining condensate which may accumulate.

(ii) If desired, vent pipes from two or more safety relief devices located on the same unit, or similar lines from two or more different units, may be run into a common header, provided the cross-sectional area of such header is at least equal to the sum of the cross-sectional areas of the individual vent pipes.

(b) The rate of discharge of spring-loaded safety relief valves installed on underground containers may be reduced to a minimum of 30 percent of the rate of discharge speci-

fied in Appendix A. Containers so protected shall not be uncovered after installation until the liquid ammonia has been removed. Containers which may contain liquid ammonia before being installed underground and before being completely covered with earth are to be considered aboveground containers when determining the rate of discharge requirements of the safety relief valves.

(c) On underground installations where there is a probability of the manhole or housing becoming flooded, the discharge from vent lines shall be located above the high water level. All manholes or housings shall be provided with ventilated louvres or their equivalent, the area of such openings equaling or exceeding combined discharge areas of safety relief valves and vent lines which discharge their content into the manhole housing.

(4) Installation of storage containers.

(a) Containers installed aboveground shall be provided with substantial reinforced concrete footings and foundations or structural steel supports mounted on reinforced concrete foundations. In either case, the reinforced concrete foundations or footings shall extend below the established frost line and shall be of sufficient width and thickness to support the total weight of the containers and contents adequately. The foundation shall maintain the lowest point of the tank at not less than 18 inches above the ground. Floating type foundations shall also be acceptable providing the foundations are designed to adequately support the tank, contents and pumping equipment. (See WAC 296-24-51009(7).)

(b) Horizontal aboveground containers shall be mounted on foundations in such a manner as to permit expansion and contraction. Every container shall be supported so as to prevent the concentration of excessive loads on the supporting portion of the shell. The bearing afforded by the saddles shall extend over at least one third of the circumference of the shell. Suitable means for preventing corrosion shall be provided on that portion of the container in contact with the foundations or saddles.

(c) Containers buried underground shall be placed so that the top of the container is at least one foot below the surface of the ground. Should ground conditions make compliance with these requirements impracticable, precautions shall be taken to prevent physical damage to the container. It is not necessary to cover the portion of the container to which a manhole and other connections are affixed when necessary to prevent floating, containers shall be securely anchored or weighted.

(d) Underground containers shall be set on firm foundations (firm earth may be used) and surrounded with soft earth or sand well tamped in place. As a further means of resisting corrosion, the container, prior to being placed underground, shall be given a protective coating satisfactory to the authority having jurisdiction. Such protective coating shall be equivalent to hot dip galvanizing, or to two preliminary coatings of red lead followed by a heavy coating of coal tar or asphalt. The container thus coated shall be lowered into place in such a manner as to prevent abrasion or other damage to the coating.

(e) Distance between aboveground and underground containers of over 1,200 gallons capacity shall be at least five feet.

(f) Secure anchorage or adequate pier height shall be provided against container flotation wherever sufficiently high flood water might occur.

(5) Reinstallation of containers.

(a) Containers once installed underground shall not later be reinstalled aboveground or underground, unless they successfully withstand hydrostatic pressure retests at the pressure specified for the original hydrostatic test as required by the code under which the tank was constructed and show no evidence of serious corrosion.

(b) Where containers are reinstalled underground, the corrosion resistant coating shall be put in good condition; see WAC 296-24-51011 (4)(d). Where containers are reinstalled aboveground, safety relief devices or gaging devices shall comply with WAC 296-24-51009(9) and 296-24-51011(3) respectively for aboveground containers.

(6) Marking of containers. Each container or group of containers shall be marked on at least two sides with the words "anhydrous ammonia" or "caution—ammonia" in sharply contrasting colors with letters not less than four inches high.

(7) Protection of container appurtenances.

(a) Valves and other appurtenances shall be protected against physical damage. Main container shut-off valves shall be kept closed and locked when the installation is unattended. If the facility is protected against tampering by fencing or other suitable means, valve locks are not required.

(b) All connections to underground containers should be located within a substantial dome, housing or manhole fitted with a substantial removable cover. Appurtenances shall also be protected during the transit of containers intended for installation underground.

(c) Storage containers need not be grounded.

(8) Identification. A sign shall be displayed in a conspicuous place stating the name, address, and phone number of the nearest representative, agent, or owner of the storage system.

[Order 76-6, § 296-24-51011, filed 3/1/76; Order 73-5, § 296-24-51011, filed 5/9/73 and Order 73-4, § 296-24-51011, filed 5/7/73.]

WAC 296-24-51013 Refrigerated storage. This section applies specifically to systems utilizing tanks for the storage of anhydrous ammonia under refrigerated conditions. All basic rules of WAC 296-24-51009 apply to this section unless inconsistent with the requirements of this section.

(1) Design of tanks.

(a) Tanks may be designed for any storage pressure desired as determined by economical design of the refrigerated system.

(b) The design temperature shall be the minimum temperature to which the container will be refrigerated and shall be so designated.

(c) Containers with a design pressure exceeding 15 p.s.i.g. shall be constructed in accordance with WAC 296-24-51009(2) and the material shall be selected from those listed in API Standards 620, 4th edition 1970, Recommended Rules for Design and Construction of Large, Welded Low-Pressure Storage Tanks, Tables 2.02, R.2.1, R.2.2, R.2.3 or R.2.4.

(d) Tanks with a design pressure of 15 p.s.i.g. and less shall be constructed in accordance with the general require-

ments of API Standard 620, 4th edition, 1970, including Appendix R.

(e) When austenitic steels or nonferrous materials are used, the ASME Code shall be used as a guide in selection of materials for use at the design temperature.

(f) The filling density for refrigerated storage containers shall be such that the container will not be liquid full at a liquid temperature corresponding to the vapor pressure at the start-to-discharge pressure setting of the safety-relief valve. (New 1-22-76)

(2) Installation of storage tanks.

(a) Tanks shall be supported on suitable noncombustible foundations designed to accommodate the type of tank being used.

(b) Adequate protection against flotation or other water damage shall be provided wherever high flood water might occur.

(c) Tanks for product storage at less than 32°F shall be supported in such a way, or heat shall be supplied, to prevent the effects of freezing and consequent frost heaving.

(d) The area surrounding a refrigerated tank or group of tanks shall be provided with drainage, or shall be diked to prevent accidental discharge of liquid from spreading to uncontrolled areas.

(e) When drainage is employed, a slope of not less than one percent shall be provided. The drainage system shall terminate in an impounding basin having a capacity as large as the largest tank served.

(f) Provision shall be made for drainage of rain water from the diked or impounding area. Such drainage shall not permit the release of ammonia.

(g) When a dike surrounding the tank is employed, the capacity of the diked enclosure shall be as large as the largest tank served.

(h) The walls of a diked enclosure or the wall of an impounding basin used in a drainage system shall be of earth, steel or concrete designed to be liquid tight and to withstand the hydrostatic pressure and the temperature. Earth walls shall have a flat top at least 2 feet wide. The slope shall be stable and consistent with the angle of repose of the earth used.

(i) The ground in an impounding basin or within a diked enclosure, should be graded so that small spills, or the early part of a large spill, will accumulate at one side or corner contacting a relatively small area of ground and exposing a relatively small surface area for heat gain. Shallow channels in the ground surface or low curbs of earth can help guide the liquid to these low areas without contacting a large ground area.

(3) Marking refrigerated containers.

Each refrigerated container shall be marked with a nameplate on the outer covering in an accessible place as specified in the following:

(a) With the name and address of the builder and the date of fabrication.

(b) With the maximum volume or weight of the product whichever is most meaningful to user.

(c) With the design pressure.

(d) With the minimum temperature in degrees Fahrenheit for which the container was designed.

(e) With the maximum allowable water level to which the container may be filled for the test purposes.

(f) With the density of the product in pounds per cubic foot for which the container was designed.

(g) With the maximum level to which the container may be filled with liquid anhydrous ammonia.

(4) Tank valves, fill pipes and discharge pipes.

(a) Shut-off valves shall be:

(i) Provided for all connections except those with a No. 54 drill size restriction, plugs, safety valves, thermometer wells, and

(ii) Located as close to the tank as practicable.

(b) When operating conditions make it advisable, a check valve shall be installed on the fill connection and a remotely operated shut-off valve on other connections located below the maximum liquid level.

(5) Safety relief devices.

(a) Safety relief valves shall be set to start-to-discharge at a pressure not in excess of the design pressure of the tank and shall have a total relieving capacity sufficient to prevent a maximum pressure in a tank of more than one hundred twenty percent of the design pressure.

(b) The total relieving capacity shall be the larger requirement of (b)(i) or (ii) of this subsection.

(i) Possible refrigeration system upset such as (A) cooling water failure, (B) power failure, (C) instrument air or instrument failure, (D) mechanical failure of any equipment, (E) excessive pumping rates, (F) changing atmospheric conditions.

(ii) Either one of the following formulas for fire exposure, (A) for valve manufacturers who use weight of vapors to be relieved as basis for classifying valves:

$$W = \frac{34{,}500\ F\ A^{0.82}}{L}$$

or (B) for valve manufacturers that classify valves on the basis of air flow:

$$Q_a = \frac{633{,}000\ F\ A^{0.82}}{L\ C}\sqrt{\frac{Z\ T}{M}}$$

Where

- W = weight of vapors to be relieved in pounds/hour at relieving conditions;
- Q_a = air flow in cubic feet per minute at standard conditions (60F and 14.7 psi);
- F = fireproofing credit. Use F =1.0 except when an approved fireproofing material of recommended thickness is used, then use F =0.2.
- A = total surface area in square feet up to 25 feet above grade or to the equator of a sphere, whichever is greater;
- Z = compressibility factor of ammonia at relieving conditions (if not known, use Z =1.0);
- T = temperature in degrees R (460 + temperature in degrees F of gas at relieving conditions);
- M = molecular weight =17 for ammonia;
- L = latent heat of ammonia at relieving conditions;
- C = constant based on relation of specific heats. (C may be obtained from the following table.)

(If K is not known use C = 315.)

K	C	K	C	K	C
1.00	315	1.26	343	1.52	366
1.02	318	1.28	345	1.54	368
1.04	320	1.30	347	1.56	369
1.06	322	1.32	349	1.58	371
1.08	324	1.34	351	1.60	372
1.10	327	1.36	352	1.62	374
1.12	329	1.38	354	1.64	376
1.14	331	1.40	356	1.66	377
1.16	333	1.42	358	1.68	379
1.18	335	1.44	359	1.70	380
1.20	337	1.46	361	2.00	400
1.22	339	1.48	363	2.20	412
1.24	341	1.50	364		

Where $K = C_p/C_v$ at atmospheric conditions and

C_p = specific heat of vapor at constant pressure.
C_v = specific heat of vapor at constant volume.

(c) Shut-off valves of adequate flow capacity may be provided and used to facilitate inspection and repair of safety relief valves. When a shut-off valve is provided it shall be so arranged that it can be locked or sealed open, and it shall not be closed except by an authorized person who shall remain stationed there while the valve remains closed, and who shall again lock or seal the valve open when leaving the station.

(d) Safety relief devices shall comply with the following:

(i) If stacks are used they shall be suitably designed to prevent obstruction by rain, snow, ice or condensate. The outlet size shall not be smaller than the nominal size of the safety relief valve outlet connection.

(ii) Discharge lines may be used if desired. Multiple safety relief valves on the same storage unit may be run into a common discharge header. The discharge line and header shall be designed to accommodate the maximum flow and a back pressure not exceeding ten percent of the design pressure of the storage container. This back pressure shall be included in the one hundred twenty percent total maximum pressure given in (a) of this subsection. No other container or system shall exhaust into this discharge line or header. The vent lines shall be installed to prevent accumulation of liquid in the lines.

(e) Atmospheric storage shall be provided with vacuum breakers. Ammonia gas may be used to provide a pad.

(6) Protection of container appurtenances. Refrigerated storage containers shall comply with the provisions of WAC 296-24-51011(7).

(7) Reinstallation of containers. Containers of such size as to require field fabrication shall, when moved and reinstalled, be reconstructed and reinspected in complete accordance with the code under which they were constructed. The containers shall be subjected to a pressure retest, and if rerating is necessary, it shall be done in accordance with the applicable code pressures.

(8) Damage from vehicles. Precaution shall be taken to avoid any damage by trucks, tractors, or other vehicles.

(9) Refrigeration load and equipment.

(a) The total refrigeration load shall be computed as the sum of the following:

(i) Load imposed by heat flow into the container caused by the temperature differential between the ambient temperature and the design storage temperature.

(ii) Load imposed by heat flow into the tank caused by maximum sun radiation.

(iii) Maximum load imposed by filling the tank with ammonia warmer than the design storage temperature.

(b) More than one storage tank may be handled by the same refrigeration system.

(c) Compressors. (See also WAC 296-24-51009 (12)(g).)

(i) A minimum of two compressors shall be provided, either of which is of sufficient size to handle the loads listed in (a)(i) and (ii) of this subsection. Where more than two compressors are provided, minimum standby equipment equal to the largest normally operating equipment shall be installed. Compressors required for (a)(iii) of this subsection may be used as standby equipment for compressors required in (a)(i) and (ii) of this subsection.

(ii) Compressors shall be sized to operate with a suction pressure at least ten percent below the minimum setting of the safety relief valve(s) on the storage tank and shall withstand a suction pressure at least equal to one hundred twenty percent of the design pressure of the tank. Discharge pressure will be governed by condensing conditions.

(d) Compressor drives.

(i) Each compressor shall have its individual driving unit.

(ii) Any standard drive consistent with good design may be used.

(iii) An emergency source of power of sufficient capacity to handle the loads listed in (a)(i) and (ii) of this subsection shall be provided, unless facilities are provided to safely dispose of vented vapors while the refrigeration system is not operating.

(e) Automatic control equipment.

(i) The refrigeration system shall be arranged with suitable controls to govern the compressor operation in accordance with the load as evidenced by the pressure in the container(s).

(ii) An emergency alarm system shall be installed to function in the event the pressure in the container(s) rises to the maximum or falls to the minimum allowable operating pressure.

(iii) An emergency alarm and shut-off shall be located in the condenser system to respond to excess discharge pressure caused by failure of the cooling medium.

(iv) All automatic controls shall be installed in a manner to preclude operation of alternate compressors unless the controls will function with the alternate compressors.

(f) Separators.

(i) An entrainment separator of suitable size and design pressure shall be installed in the compressor suction line. The separator shall be equipped with a drain and gaging device.

(ii) An oil separator of suitable size shall be installed in the compressor discharge line. It shall be designed for at least 250 p.s.i.g. and shall be equipped with a gaging device and drain valve.

(g) Condensers. The condenser system may be cooled by air or water or both. The condenser shall be designed for

at least 250 p.s.i.g. Provision shall be made for purging noncondensibles either manually or automatically.

(h) Receiver and liquid drain. A receiver shall be provided which is equipped with an automatic float valve to discharge the liquid ammonia to storage or with a high pressure liquid drain trap of suitable capacity. The receiver shall be designed for at least 250 p.s.i.g. operating pressure and be equipped with the necessary connections, safety relief valves and gaging device.

(i) Insulation. Refrigerated containers and pipe lines which are insulated shall be covered with a material of suitable quality and thickness for the temperatures encountered. Insulation shall be suitably supported and protected against the weather. Weatherproofing shall be of a type which will not support flame propagation.

(10) Safety equipment. All refrigerated storage plants shall have on hand the minimum safety equipment required under WAC 296-24-51009 (10)(c).

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-51013, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51013, filed 11/13/80; Order 76-6, § 296-24-51013, filed 3/1/76; Order 73-5, § 296-24-51013, filed 5/9/73 and Order 73-4, § 296-24-51013, filed 5/7/73.]

WAC 296-24-51015 Systems utilizing portable DOT containers. This section applies specifically to systems utilizing cylinders, portable tanks (DOT-51), or "ton containers" (DOT-106A, DOT-110A), constructed in accordance with department of transportation specifications. All basic rules of WAC 296-24-51009 apply to this section, unless otherwise noted.

(1) Containers.

(a) Containers shall comply with department of transportation specifications and shall be maintained, filled, packaged, marked, labeled and shipped to comply with current DOT regulations and American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1. (See Appendix C for availability.)

(b) Containers shall be stored in an area free from ignitable debris and in such manner as to prevent external corrosion. (Storage may be indoors or outdoors.)

(c) Containers shall not be buried below ground.

(d) Containers shall be set upon firm foundations or otherwise firmly secured. The possible effect of settling on the outlet piping shall be guarded against by a flexible connection or special fitting.

(e) Containers shall be protected from heat sources such as radiant flame and steam pipes. Do not apply heat directly to containers to raise the pressure.

(f) Containers shall be stored in such manner as to protect them from moving vehicles or external damage.

(g) Any container which is designed to have a valve protection cap shall have the cap securely in place when the container is not in service.

(2) Container valves and regulating equipment.

(a) Container valves and pressure regulating equipment shall be protected against tampering when installed for use.

(b) Container valves shall be protected while in transit, in storage, and while being moved into final utilizations, as follows:

(i) By setting them into a recess of the container, or

(ii) By ventilated cap or collar, fastened to the container, capable of withstanding a blow from any direction equivalent to that of a 30-lb. weight dropped four feet. Construction must be such that a blow will not be transmitted to the valves or other connections.

(c) When containers are not connected for service, the outlet valves shall be kept tightly closed even though containers are considered empty.

(3) Safety relief devices. Containers shall be provided with safety relief devices as required by department of transportation regulations.

[Order 73-5, § 296-24-51015, filed 5/9/73 and Order 73-4, § 296-24-51015, filed 5/7/73.]

WAC 296-24-51017 Systems mounted on trucks, semi-trailers, and trailers for transportation of ammonia. This section applies specifically to systems mounted on trucks, semi-trailers and trailers (other than those covered under WAC 296-24-51019 and 296-24-51021) used for the transportation of ammonia. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted. Systems for trucks and trailers for transportation of anhydrous ammonia, in addition to complying with the requirements of these standards, shall also comply where required, with the requirements of the department of transportation and those of any other regulatory body which may apply.

(1) Design pressure of containers.

(a) Containers used in intrastate commerce shall be constructed in accordance with WAC 296-24-51009(2) with a minimum design pressure of 250 psig. Containers used in interstate commerce shall meet DOT regulations.

(b) The shell or head thickness of any container shall not be less than 3/16 inch.

(c) All container openings, except safety relief valves, liquid level gaging devices and pressure gages, shall be labeled to designate whether they communicate with liquid or vapor space. Labels may be on valves.

(d) Baffles are not required for cargo tanks.

(2) Mounting containers on truck.

(a) The means of attachment of any container to the cradle, frame or chassis of a vehicle shall be designed on a basis of two "g" loading in either direction, using a safety factor of not less than 4, based on the ultimate strength of the material used. For purposes of this requirement, two "g" of load support is equivalent to three times the static weight of the articles supported; two "g" of loading and bending, acceleration, and torsion is equivalent to twice the static weight support applied horizontally at the road surface.

(b) "Hold-down" devices, when used, shall anchor the container to the cradle, frame or chassis in a suitable and safe manner that will not introduce undue concentration of stresses. These devices shall incorporate positive means for drawing the container down tight, and suitable stops or anchors shall be provided to prevent relative movement between container and framing due to stopping, starting or changes in direction.

(c) Vehicles designed and constructed so that the cargo tanks constitute in whole or in part the stress member used in lieu of the frame shall be supported by external cradles suspending at least 120° of the shell circumference. The

design calculation shall include beam stress, shear stress, torsion stress, bending moment and acceleration stress, in addition to those covered by the code under which the cargo tank was designed.

(d) If a liquid withdrawal line is installed in the bottom of a container, the connections thereto, including hose, shall not be lower than the lowest horizontal edge of the trailer axle.

(e) Provisions shall be made to secure both ends of the hose while in transit.

(f) When the cradle and the container are not welded together, suitable material shall be used between them to eliminate metal-to-metal friction.

(3) Container appurtenances.

(a) Nonrecessed container fittings and appurtenances shall be protected against physical damage by either: (i) A protected location, (ii) the vehicle frame or bumper, or (iii) a protective housing. The protective housing, if used, shall comply with the requirements under which the containers are fabricated with respect to design and construction, and shall be designed to withstand static loadings in any direction equal to twice the weight of the container and attachments when filled with the lading using a safety factor of not less than 4, based on the ultimate strength of the material to be used. The protective housing if used shall be protected with a weather cover, if necessary, to insure proper operation of valves and safety relief devices.

(b) All connections to containers, except filling connections (see WAC 296-24-51017 (3)(c)), safety relief devices, and liquid level and pressure gage connections, shall be provided with suitable automatic excess flow valves, or in lieu thereof, may be fitted with quick-closing internal valves, which shall remain closed except during delivery operations. The control mechanism for such valves may be provided with a secondary control remote from the delivery connections and such control mechanism shall be provided with a fusible section (melting point 208F to 220F) which will permit the internal valve to close automatically in case of fire.

(c) Filling connections shall be provided with automatic back-pressure check valves, excess-flow check valves, or quick-closing internal valves, to prevent back-flow in case the filling connection is broken. Where the filling and discharge connect to a common opening in the container shell and that opening is fitted with a quick-closing internal valve as specified in WAC 296-24-51017 (3)(b), the automatic valve shall not be required.

(d) All containers shall be equipped for spray loading (filling in the vapor space) or with an approved vapor return valve of adequate capacity.

(e) All containers shall be equipped with a fixed maximum liquid level gage.

(f) All containers shall be equipped with a pressure-indicating gage having a dial graduated from 0-400 psig.

(4) Piping and fittings.

(a) All piping, tubing and fittings shall be securely mounted and protected against physical damage.

(b) Piping used on nonrefrigerated systems shall be at least ASTM A-53 Grade B electric resistance welded and electric flash welded pipe or equal. Such pipe shall be at least Schedule 40 when joints are welded, or welded and flanged. Such pipe shall be at least Schedule 80 when joints are threaded. Brass, copper, or galvanized steel pipe or tubing shall not be used.

(c) The truck unloading line shall be provided with an excess flow valve at the hose connection unless an approved quick closing internal valve is provided in the container unloading connection. (See WAC 296-24-51017 (3)(b).)

(5) Safety relief devices. The discharge from container safety relief valves shall be vented away from the container upward and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container; loose fitting rain caps shall be used. Size of discharge lines from safety relief valves shall not be smaller than the nominal size of the safety relief valve outlet connection. Suitable provision shall be made for draining condensate which may accumulate in the discharge pipe.

(6) Marking of container. Every container, whether loaded or empty, shall be conspicuously and legibly marked on each side and rear thereof on a background of sharply contrasting color with the words "COMPRESSED GAS" in letters at least four inches high; or with the words "ANHYDROUS AMMONIA" in letters at least four inches high; or in compliance with department of transportation regulations.

(7) Transfer of liquids.

(a) The content of tank motor vehicle containers shall be determined by weight, by suitable liquid level gaging devices, meters, or other approved methods.

Note: If the content of a container is to be determined by liquid level measurement, the container shall have a thermometer well so that the internal liquid temperature can be easily determined. This volume when converted to weight shall not exceed the filling density specified by the department of transportation regulations.

(b) Pumps or compressors shall be designed and installed in accordance with WAC 296-24-51009(12) and protected against physical damage when mounted upon ammonia tank trucks and trailers.

(c) Tank motor vehicles of greater than 3500 water gallons capacity shall be unloaded only at approved locations meeting the requirements of WAC 296-24-51009 (10)(c) and (12)(h).

(8) Trailers and semi-trailers.

(a) Trailers shall be firmly and securely attached to the vehicle drawing them by means of suitable drawbars, supplemented by suitable safety chain (or chains) or safety cables.

(b) Every trailer and semi-trailer shall be equipped with an emergency braking system to be activated in the event of hitch failure.

(c) Trailers shall be of a type of construction which will prevent the towed vehicle from whipping or swerving dangerously from side to side and which will cause it to follow substantially in the path of the towing vehicle.

(d) Where a fifth wheel is employed on a semi-trailer, it shall be ruggedly designed, securely fastened to both units, and equipped with a positive locking mechanism which will prevent separation of the two units except by manual release.

(e) Every trailer or semi-trailer shall be provided with side lights and a tail light.

(9) Electrical equipment and lighting. Tank trucks, tank trailers, and tank semi-trailers, may not be equipped with any artificial light other than electric light. Electric lighting circuits shall have suitable overcurrent protection (fuses or

automatic circuit breakers). The wiring shall have sufficient carrying capacity and mechanical strength, and shall be suitably secured, insulated and protected against physical damage.

(10) Protection against collision. Each tank motor vehicle shall be provided with properly attached bumpers or chassis extensions arranged to protect the tank, piping, valves and fittings from physical damage in case of collision.

(11) Chock blocks. At least two chock blocks shall be provided. These blocks shall be placed to prevent rolling of the vehicle whenever it is parked during loading and unloading operations.

(12) Portable tanks (including skid tanks). When portable tanks are used in lieu of cargo tanks and are permanently mounted on tank motor vehicles for the transportation of ammonia, they shall comply with the requirements of WAC 296-24-51017. Where portable tanks, including those built to DOT Specification 51, 106A or 110A, are used for farm storage they shall comply with WAC 296-24-51011. When portable tanks are used as shipping containers in interstate commerce they shall comply with WAC 296-24-51015.

(13) Safety equipment.

(a) All tank trucks, trailers, and semi-trailers should be equipped with the following for emergency and rescue purposes:

(i) One full face gas mask with anhydrous ammonia refill canisters.

(ii) One pair of protective gloves made of rubber or other material impervious to ammonia.

(iii) Tight-fitting goggles or one full face shield.

(iv) A container of not less than five gallons of readily available clean water.

*An ammonia canister is effective for short periods of time in light concentrations of ammonia vapor, generally 15 minutes in concentrations of 3% and will not protect breathing in heavier concentrations. If ammonia vapors are detected when mask is applied the concentration is too high for safety. The life of a canister in service is controlled by the percentage of vapors to which it is exposed. Canisters must not be opened until ready for use and should be discarded after use. Unopened canisters may be guaranteed for as long as three years. All should be dated when received because of this limited life. In addition to this protection, an independently supplied air mask of the type used by fire departments may be used for severe emergencies.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51017, filed 11/13/80; Order 76-6, § 296-24-51017, filed 3/1/76; Order 73-5, § 296-24-51017, filed 5/9/73 and Order 73-4, § 296-24-51017, filed 5/7/73.]

WAC 296-24-51019 Systems mounted on farm wagons (implements of husbandry) for the transportation of ammonia. This section applies to containers of 3000 gallons capacity or less and pertinent equipment mounted on farm wagons (implements of husbandry) and used for the transportation of ammonia. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted.

(1) Design of containers. Containers shall be constructed in accordance with WAC 296-24-51009(2).

(2) Mounting containers.

(a) A suitable "stop" or "stops" shall be mounted on the farm wagon or on the container in such a way that the container shall not be dislodged from its mounting due to farm wagon coming to a sudden stop.

(b) A suitable "hold-down" device shall be provided which will anchor the container to the farm wagon at one or more places on each side of the container.

(c) When containers are mounted on four-wheel farm wagons, care shall be taken to insure that the weight is distributed evenly over both axles.

(d) When the cradle and the container are not welded together, suitable material shall be used between them to eliminate metal-to-metal friction.

(3) Container appurtenances.

(a) All containers shall be equipped with a fixed maximum liquid level gage.

(b) All containers with a capacity exceeding 250 gallons shall be equipped with a pressure gage having a dial graduated from 0-400 psi.

(c) The filling connection shall be fitted with combination back-pressure check valve and excess-flow valve; one double or two single back-pressure check valves; or a positive shut-off valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve.

(d) All containers with a capacity exceeding 250 gallons shall be equipped for spray loading or with an approved vapor return valve.

(e) All vapor and liquid connections, except safety relief valves and those specifically exempt in WAC 296-24-51009 (6)(e), shall be equipped with approved excess flow valves or may be fitted with quick-closing internal valves which, except during operating periods, shall remain closed.

(f) Fittings shall be protected from physical damage by means of a rigid guard designed to withstand static loading in any direction equal to twice the weight of the container and lading using a safety factor of four based upon the ultimate strength of the material used. If the guard is fully enclosed, the safety relief valves shall be properly vented through the guard.

(g) If a liquid withdrawal line is installed in the bottom of a container, the connections thereto, including hose, shall not be lower than the lowest horizontal edge of the farm wagon axle.

(h) Both ends of the hose shall be made secure while in transit.

(4) Marking of container. There shall appear on each side and on the rear end of the container in letters at least four inches high, the words "**anhydrous ammonia**" or, "**caution—ammonia**" or the container shall be marked in accordance with department of transportation regulations.

(5) Farm wagons (implements of husbandry).

(a) Farm wagons (implements of husbandry) shall conform with state regulations.

(b) All farm wagons shall be securely attached to the vehicle drawing them by means of drawbars supplemented by suitable safety chains.

(c) A farm wagon shall be constructed so that it will follow substantially in the path of the towing vehicle and will prevent the towed farm wagon from whipping or swerving dangerously from side to side.

(d) All farm wagons shall have five gallons or more of readily available clean water.

[Order 73-5, § 296-24-51019, filed 5/9/73 and Order 73-4, § 296-24-51019, filed 5/7/73.]

WAC 296-24-51021 Systems mounted on farm equipment (implements of husbandry) for the application of ammonia. This section applies to systems mounted on farm equipment and used for the field application of ammonia. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted.

(1) Design of containers. The minimum design for containers shall be in accordance with WAC 296-24-51009(2).

(2) Mounting of containers. All containers shall be securely mounted.

(3) Container valves and appurtenances.

(a) Each container shall have a fixed maximum liquid-level gage.

(b) The filling connection shall be fitted with combination back-pressure check valve and excess-flow valve; one double or two single back-pressure check valves; or a positive shut-off valve in conjunction with either an internal back-pressure check valve or an internal excess-flow valve.

(c) An excess-flow valve is not required in the vapor connection, provided the controlling orifice is not in excess of seven-sixteenths of an inch in diameter and the valve is hand-operated (attached hand wheel or equivalent) shut-off valve. To assist in filling applicator tanks, it is permissible to bleed vapors to the open air, providing the preceding requirements are met.

(d) Metering devices may be connected directly to the tank withdrawal valve. A union type connection is permissible between the tank valve and metering device. Remote mounting of metering devices is permissible using hose which meets with specifications set out in Appendix B. When the applicator tank is trailed and the metering device is remotely mounted, such as on the tractor tool bar, an automatic break-a-way type, self-closing, coupling must be used.

(e) No excess-flow valve is required in the liquid withdrawal line provided the controlling orifice between the contents of the container and the outlet of the shut-off valve (see WAC 296-24-51009 (6)(b)) does not exceed 7/16 inch in diameter.

APPENDIX A

Minimum required rate of discharge in cubic feet per minute of air at 120 percent of the maximum permitted start-to-discharge pressure for safety relief valves to be used on containers other than those constructed in accordance with United States Department of Transportation cylinder specifications.

Surface Area sq. ft.	Flow Rate CFM Air
20	258
25	310
30	360
35	408
40	455
45	501
50	547
55	591
60	635
65	678
70	720
75	762
80	804
85	845
90	885
95	925
100	965
105	1,010
110	1,050
115	1,090
120	1,120
125	1,160
130	1,200
135	1,240
140	1,280
145	1,310
150	1,350
155	1,390
160	1,420
165	1,460
170	1,500
175	1,530
180	1,570
185	1,600
190	1,640
195	1,670
200	1,710
210	1,780
220	1,850
230	1,920
240	1,980
250	2,050
260	2,120
270	2,180
280	2,250
290	2,320
300	2,380
310	2,450
320	2,510
330	2,570
340	2,640
350	2,700
360	2,760
370	2,830
380	2,890
390	2,950
400	3,010
450	3,320
500	3,620
550	3,910
600	4,200
650	4,480
700	4,760
750	5,040
800	5,300
850	5,590
900	5,850
950	6,120
1,000	6,380
1,050	6,640
1,100	6,900
1,150	7,160
1,200	7,410
1,250	7,660
1,300	7,910
1,350	8,160
1,400	8,410
1,450	8,650
1,500	8,900
1,550	9,140
1,600	9,380
1,650	9,620
1,700	9,860
1,750	10,090
1,800	10,330
1,850	10,560
1,900	10,800
1,950	11,030

2,000	11,260
2,050	11,490
2,100	11,720
2,150	11,950
2,200	12,180
2,250	12,400
2,300	12,630
2,350	12,850
2,400	13,080
2,450	13,300
2,500	13,520

Surface area = total outside surface area of container in square feet. When the surface area is not stamped on the name plate or when the marking is not legible, the area can be calculated by using one of the following formulas:

(1) Cylindrical container with hemispherical heads
Area = overall length in feet times outside diameter in feet times 3.1416.

(2) Cylindrical container with other than hemispherical heads
Area = (overall length in feet plus 0.3 outside diameter in feet) times outside diameter in feet times 3.1416.

(3) Spherical container
Area = outside diameter in feet squared times 3.1416.

Flow rate — CFM air = cubic feet per minute of air required at standard conditions, 60F and atmospheric pressure (14.7 psia).

The rate of discharge may be interpolated for intermediate values of surface area. For containers with total outside surface area greater that 2,500 sq. ft., the required flow rate can be calculated using the formula, flow rate CFM air = 22.11 A0.82 where A = outside surface area of the container in square feet.

APPENDIX B

TFI-RMA SPECIFICATION FOR ANHYDROUS AMMONIA HOSE TFI-RMA STANDARD NO. M-5

(1) **Scope.** This specification covers hose and hose assemblies commonly referred to as "pressure transfer hose," used to convey anhydrous ammonia liquid or to convey anhydrous ammonia gas where the gas is in contact with liquid ammonia. This specification primarily covers hose and hose assemblies which have a minimum burst pressure of 1750 psig, a safety factor of 5, and a maximum working pressure of 350 psig. These figures should not be misconstrued to mean that they are the maximum pressures to which anhydrous ammonia hose and hose assemblies are built, since higher pressure hose and hose assemblies are available for special applications.

(2) **Sizes and tolerances.** Anhydrous ammonia hose shall be made with the following dimensions and tolerances:

RUBBER COVERED HOSE FOR USE WITH TWO-PIECE SCREW TYPE COUPLINGS

I.D.	Tolerance	O.D.	Tolerance
1/2"	± 1/32"	15/16"	± 1/32"
3/4"	± 1/32"	1 1/4"	± 1/32"
1 "	± 1/16"	1 1/2"	± 1/16"

NONRUBBER COVERED AND RUBBER COVERED HOSE FOR USE WITH FULL FLOW COUPLINGS

I.D.	Tolerance	O.D.	Tolerance	Nominal Tubing O.D.
13/32"	+.039" - .015"	49/64"	± .031"	1/2 "
1/2"	+.047" - .015"	59/64"	± .031"	5/8 "
5/8"	+.047" - .015"	1- 5/64"	± .031"	3/4 "
7/8"	+.047" - .015"	1- 15/64"	± .031"	1 "
1 1/8"	+.062" - .015"	1 1/2"	± .047"	1 1/4 "
1 3/8"	+.062" - .015"	1 3/4"	± .047"	1 1/2 "
1- 13/16"	+.062" - .015"	2- 7/32"	± .047"	2 "

HOSE FOR USE WITH OTHER TYPES OF COUPLINGS*

I.D.	Tolerance
1/2"	± 1/32"
3/4"	± 1/32"
1 "	± 1/16"
1 1/4"	± 1/16"
1 1/2"	± 1/16"
2 "	± 1/16"

*The O.D. dimension and tolerance were intentionally omitted from this tabulation to provide for developments in both hose and couplings.

(3) **Construction.**

(a) Inner tube. The tube shall be uniform in quality and thickness and free from injurious defects. It shall meet the physical requirements of (4) of Appendix B. The material shall be resistant to hardening or other deterioration due to the action of ammonia.

(b) Reinforcement. The reinforcement shall consist of any material not adversely affected by permeating ammonia. The reinforcement shall be applied evenly and uniformly, and in such a way that it will meet the physical requirements of (4) of Appendix B. In constructions utilizing a ply or plies of wire reinforcement, the composition of the wire shall be a suitable corrosion resistant stainless steel.

(c) Cover. A rubber cover if used shall be uniform in quality and thickness and free from injurious defects. It shall meet the physical requirements of (4) of Appendix B. The cover shall be so compounded or constructed that it will not blister in service, and will be resistant to deterioration due to the action of ammonia. A gas tight cover shall be pricked to relieve pressure build-up between inner tube and cover. The cover shall be resistant to deterioration due to exposure to the elements.

(4) **Physical tests.**

(a) Tension test of tube and cover.

	Tube	Cover
Tensile, psi. min.	800	1200
Elongation, percent, min.	150	200

(b) Adhesion test

	Tube	Ply	Cover
Adhesion lbs./in.	10	8	10

(i) In constructions having braided wire or woven wire filler reinforcing members, only the cover adhesion requirement will apply, as it is impractical to prepare adhesion test specimens except for determining cover adhesion.

(c) Burst test. All sizes have a minimum burst of 1750 psig. (See scope.)

(d) Ammonia performance test. During the conditioning and flexing described in (7)(d) and (7)(d)(ii) of Appendix B there shall be no evidence of cover blistering or leakage. At the conclusion of the conditioning and at the conclusion of the flexing test, the burst must still meet the requirements of (4)(c) of Appendix B. There shall be no evidence of separation of the component parts when the remainder of the samples are examined.

(e) Low temperatures test. The hose shall not fail at minus 40F plus or minus 2°, when tested as described in (7)(e) of Appendix B.

(5) **Types of tests.**

(a) Acceptance inspection. This includes all the test specified, with the exception of the ammonia performance test.

(b) Qualification tests. The qualification tests are intended to establish that the hose is properly designed and constructed to give satisfactory service life. These tests shall be conducted by a recognized independent laboratory. The qualification tests shall consist of all the tests specified herein including the ammonia performance test.

(6) **Method of sampling.**

(a) Acceptance inspection. A 24-inch sample of each size and type hose, representative of the lot, shall be selected from each lot manufactured at one time, or from each 25,000 feet, whichever is smaller.

(b) Qualification test. In addition to the samples specified in (6)(a) of Appendix B, two 12-foot lengths of each size hose shall be selected for the ammonia performance test. Each new hose shall be subjected to a qualification test, and again whenever there has been a design change.

(7) **Methods of testing.**

(a) Tension test of tube and rubber cover. The tension test shall be made in accordance with ASTM D-380.

(b) Friction test. The friction test shall be made in accordance with ASTM D-380.

(c) Burst test. The burst test shall be made in accordance with ASTM D-380 using the method entitled "straight bursting test."

(d) Ammonia performance test. Two 12-foot lengths of hose, to be marked "A" and "B" shall be filled with liquid anhydrous ammonia by connecting to a tank and flushing out with ammonia to remove all the air. One end of each length shall be sealed and the other end left connected to the liquid space of a tank of anhydrous ammonia. The hose shall then be conditioned for 14 days at ambient temperature of 60 to 100F. A valve between the ammonia tank and the hose may be closed providing it is opened at least once each day to completely fill the hose with liquid anhydrous ammonia. The hose shall be examined each day for visible defects. There shall be no evidence of the cover blistering or perceptible leakage. If the hose is valved off at each end when liquid full, a hydrostatic relief valve should be provided between the block valves.

(i) Conditioned hose burst test. A 24-inch sample cut from hose marked "A" shall be subjected to a straight hydrostatic bursting test in accordance with (7)(c) of Appendix B.

(ii) Conditioned hose flexing test.

(A) The 12-foot hose length marked "B" shall be installed in flexing test machine (Fig. 1). One end of the hose is to be connected to the traveling block and the free end passed around two pulleys with diameters as shown in Table 1. A 30-pound weight shall then be attached to the free end.

(B) From the remainder of hose length marked "A", (sizes 1 inch and under only), cut a section to length indicated in Table 1. Connect one end to the vertically traveling block as shown in Fig. 1 and connect the other end to the liquid space of a tank of anhydrous ammonia. Maintain the temperature of hose and ammonia between 70F and 90F. The test on the feeder hose does not apply to sizes over 1 inch. To conduct the flex test on the larger sizes any convenient hose may be used as a feeder hose.

(C) The flexing test shall continue for 72 hours at a rate of approximately 470 cycles per hour with a 42-inch vertical movement of the traveling block. A valve between the ammonia tank and the hose may be closed providing it is opened at least once each day to pressurize the hose. The hose shall be examined each day for visible defect. There shall be no evidence of cover blistering or leakage.

(D) At the conclusion of the flexing period, cut a 24-inch sample from hose "A" and from hose "B" and subject each sample to a straight burst test in accordance with (7)(c) of Appendix B. All samples shall have a minimum burst of 1750 psig.

TABLE 1

Hose Size	Pulley Diameter	Feeder Hose Length
1/2"	14" ± 1/4"	36"
3/4"	14" ± 1/4"	36"
1 "	14" ± 1/4"	36"
1 1/4"	15" ± 1/4"	
1 1/2"	18" ± 1/4"	
2 "	24" ± 1/4"	

(E) Low temperature test. A straight piece of hose at least 24 inches long, conditioned to minus 40F plus or minus 2F for 5 hours, and bent 180° within two seconds around a mandrel 12 times the nominal inside diameter of the hose, shall not break or show cracks in the tube or cover.

(8) **Retests and rejections.** Any hose which fails in one or more tests may be resampled and retested, for which purpose two additional samples shall be selected from the hose for the test that failed to meet the requirements. Failure of either of the retested samples shall be cause for final rejection.

(9) **Hose assemblies.** The couplings must be so designed and constructed, that an assembly shall have sufficient strength that it will reach the minimum burst pressure, as required by (4)(c) of Appendix B, before the end fittings leak or come off when pressure is applied as specified in ASTM D-380 for hydrostatic tests. Fittings must be resistant to the action of anhydrous and aqueous ammonia and in no case may assemblies be supplied with copper alloy fittings.

(10) **Markings.** Hose shall be clearly marked at least once every five feet with manufacturer's name or trademark, "anhydrous ammonia," the maximum working pressure in psig, year of manufacturer, and "TFI-RMA Spec.," for all

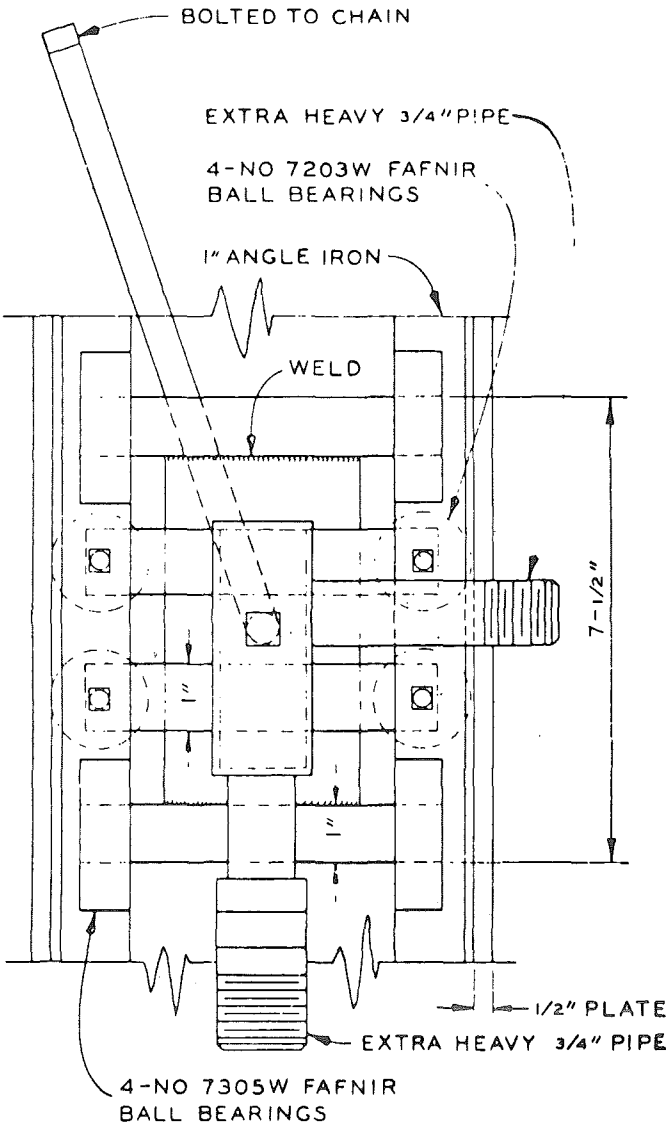
hose manufactured after January 1, 1964. As indicated in the scope, the maximum working pressure must not be less than 350 psig.

(11) **Packaging.**

(a) Packing. Unless otherwise specified, hose shall be packed in substantial commercial containers of the type, size and kind commonly used for the purpose, so constructed as to insure acceptance and safe delivery to common or other carriers, at the lowest rate, to the point of delivery specified on the order.

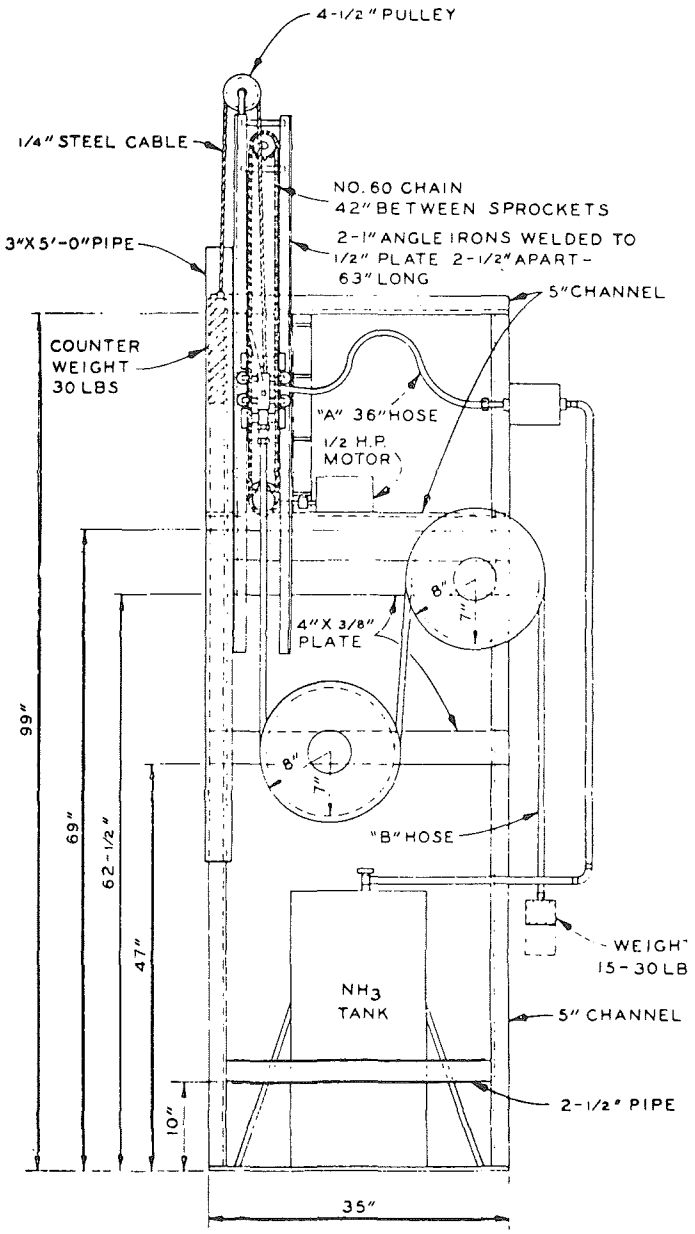
(b) Identification. Unless otherwise specified, shipping containers shall be marked with the size and quantity of hose therein, the name of the manufacturer, and the number of the order.

Figure 1



Note: 1/2 H.P. electric motor-1750 RPM 20:1 gear reduction unit sprockets-14 teeth.

TROLLEY



TYPICAL HOSE FLEXING MACHINE

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51021, filed 11/13/80; Order 73-5, § 296-24-51021, filed 5/9/73 and Order 73-4, § 296-24-51021, filed 5/7/73.]

WAC 296-24-51099 Appendix C—Availability of reference material.

APPENDIX C

AVAILABILITY OF REFERENCE MATERIAL

American National Standards Institute, Inc. (ANSI)
[formerly United States of America Standards Institute (USASI) formerly American Standards Association (ASA)]
11 West 42nd Street
New York, New York 10036

American Petroleum Institute (API)
1220 L Street Northwest
Washington, D.C. 20005

American Society of Mechanical Engineers (ASME)
345 East 47th Street
New York, New York 10017

American Society for Testing and Materials (ASTM)
1916 Race Street
Philadelphia, Pennsylvania 19103-1187

Bureau of Explosives*
50 "F" Street, N.W.
Washington, D.C. 20001

Compressed Gas Association, Incorporated (CGA)
1725 Jefferson Davis Highway
Arlington, Virginia 22202

The Fertilizer Institute (TFI) (formerly Agricultural Nitrogen Institute—National Plant Food Institute)
501 2nd Street Northeast
Washington, D.C. 20002

Chemical Manufacturers Association (CMA)
2501 "M" Street Northwest
Washington, D.C. 20037

National Fire Protection Association (NFPA)
Batterymarch Park
Quincy, Massachusetts 02269

Mine Safety and Health Administration
4015 Wilson Blvd.
Boston Towers, Number 3
Arlington, Virginia 22203

U.S. Government Printing Office*
North Capitol & "H" Streets Northwest
Washington, D.C. 20401

*DOT regulations available at nominal cost.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-51099, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-51099, filed 3/1/76.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

PART G-1
MEANS OF EGRESS

WAC 296-24-550 Means of egress. Requirements for means of egress for all new and existing buildings shall be in accordance with specifications of National Fire Code, Volume 5, NFPA 101, Chapter 5, 1985 Ed., which is approved by the American National Standards Institute.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-550, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-550, filed 5/9/73 and Order 73-4, § 296-24-550, filed 5/7/73.]

WAC 296-24-55001 Definitions. (1) Means of egress. A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consists of three separate and distinct parts: The way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards.

(2) Exit access. Exit access is that portion of a means of egress which leads to an entrance to an exit.

(3) Exit. Exit is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in these standards to provide a protected way of travel to the exit of discharge.

(4) Exit discharge. Exit discharge is that portion of a means of egress between the termination of an exit and a public way.

(5) Low hazard contents. Low hazard contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur and that consequently the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

(6) High-hazard contents. High-hazard contents shall be classified as those which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

(7) Ordinary hazard contents. Ordinary hazard contents shall be classified as those which are liable to burn with moderate rapidity and to give off a considerable volume of smoke but from which neither poisonous fumes nor explosions are to be feared in case of fire.

(8) Approved. For the purposes of chapter 296-24 WAC, Parts G-1, G-2 and G-3, approved shall mean listed or approved equipment by a nationally recognized testing laboratory. Refer to WAC 296-24-58503 (3)(c)(iv)(A) for definition of listed, and federal regulation 29 CFR 1910.7 for nationally recognized testing laboratory.

(9) Emergency action plan. A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

(10) Emergency escape route. The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-55001, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-55001, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-55001, filed 12/24/81; Order 73-5, § 296-24-55001, filed 5/9/73 and Order 73-4, § 296-24-55001, filed 5/7/73.]

WAC 296-24-55003 General requirements. (1) Application. WAC 296-24-550 through 296-24-55005 contain general fundamental requirements essential to providing a safe means of egress from fire and like emergencies. Nothing in these standards shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in these standards. Exits from vehicles, vessels, or other mobile structures are not covered by these standards.

[Order 73-5, § 296-24-55003, filed 5/9/73 and Order 73-4, § 296-24-55003, filed 5/7/73.]

WAC 296-24-55005 Fundamental requirements. (1) Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency will not depend solely on any single safeguard; additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure.

(2) Every building or structure shall be so constructed, arranged, equipped, maintained, and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the building or structure in case of fire or other emergency.

(3) Every building or structure shall be provided with exits of kinds, numbers, location, and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.

(4) In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

(5) Every exit shall be clearly visible or the route to reach it shall be conspicuously indicated in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point, and each path of escape, in its entirety, shall be so arranged or marked that the way to a place of safety outside is unmistakable. Any doorway or passageway not constituting an exit or way to reach an exit, but of such a character as to be subject to being mistaken for an exit, shall be so arranged or marked as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space, such as a cellar or storeroom, from which there is no other way out.

(6) In every building or structure equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.

(7) In every building or structure of such size, arrangement, or occupancy that a fire may not itself provide adequate warning to occupants, fire alarm facilities shall be provided where necessary to warn occupants of the existence of fire so that they may escape, or to facilitate the orderly conduct of fire exit drills.

(8) Every building or structure, section, or area thereof of such size, occupancy, and arrangement that the reasonable safety of numbers of occupants may be endangered by the blocking of any single means of egress due to fire or smoke, shall have at least two means of egress remote from each other, so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency conditions.

(9) Compliance with WAC 296-24-550 through 296-24-55005 shall not be construed as eliminating or reducing the necessity for other provisions for safety of persons using a structure under normal occupancy conditions, nor shall any provision of these standards be construed as requiring or permitting any condition that may be hazardous under normal occupancy conditions.

(10) Freezer rooms or refrigerated rooms. The opening device on all doors of walk-in refrigerated or freezer rooms must be the type, when locked from the outside with a lock, can be opened from inside.

[Order 74-27, § 296-24-55005, filed 5/7/74; Order 73-5, § 296-24-55005, filed 5/9/73 and Order 73-4, § 296-24-55005, filed 5/7/73.]

WAC 296-24-55007 Protection of employees exposed by construction and repair operations. (1) No building or structure under construction shall be occupied in whole or in part until all exit facilities required for the part occupied are completed and ready for use.

(2) No existing building shall be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained, or in lieu thereof other measures are taken which provide equivalent safety.

(3) No flammable or explosive substances or equipment for repairs or alterations shall be introduced in a building of normally low or ordinary hazard classification while the building is occupied, unless the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the building.

[Order 73-5, § 296-24-55007, filed 5/9/73 and Order 73-4, § 296-24-55007, filed 5/7/73.]

WAC 296-24-55009 Maintenance. (1) Every required exit, way of approach thereto, and way of travel from the exit into the street or open space, shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

(2) Every automatic sprinkler system, fire detection and alarm system, exit lighting, fire door, and other item of equipment, where provided, shall be continuously in proper operating condition.

[Order 73-5, § 296-24-55009, filed 5/9/73 and Order 73-4, § 296-24-55009, filed 5/7/73.]

WAC 296-24-565 Means of egress, general.

[Order 73-5, § 296-24-565, filed 5/9/73 and Order 73-4, § 296-24-565, filed 5/7/73.]

WAC 296-24-56501 Permissible exit components. An exit shall consist only of the approved components. Exit components shall be constructed as an integral part of the building or shall be permanently affixed thereto.

[Order 73-5, § 296-24-56501, filed 5/9/73 and Order 73-4, § 296-24-56501, filed 5/7/73.]

WAC 296-24-56503 Protective enclosure of exits. When an exit is protected by separation from other parts of the building the separating construction shall meet the following requirements.

(1) The separation shall have at least a 1-hour fire resistance rating when the exit connects three stories or less. This applies whether the stories connected are above or below the story at which exit discharge begins.

(2) The separation shall have at least a 2-hour fire resistance rating when the exit connects four or more stories, whether above or below the floor of discharge. It shall be constructed of noncombustible materials, and shall be supported by construction having at least a 2-hour fire resistance rating.

(3) Any opening therein shall be protected by an approved self-closing fire door.

(4) Openings in exit enclosures shall be confined to those necessary for access to the enclosure from normally occupied spaces and for egress from the enclosure.

[Order 73-5, § 296-24-56503, filed 5/9/73 and Order 73-4, § 296-24-56503, filed 5/7/73.]

WAC 296-24-56505 Width and capacity of means of egress. (1) The capacity in number of persons per unit of exit width for approved components of means of egress shall be as follows:

(a) Level egress components (including Class A ramps) 100 persons.

(b) Inclined egress components (including Class B ramps) 60 persons.

(c) A ramp shall be designated as Class A or Class B in accordance with the following Table E-1:

TABLE E-1

	Class A	Class B
Width	44 inches and greater.	30 to 44 inches.
Slope	1 to 1 3/16 inches in 12 inches.	1 3/16 to 2 inches in 12 inches.
Maximum height between landings	No limit.	12 feet.

(2) Means of egress shall be measured in units of exit width of 22 inches. Fractions of a unit shall not be counted, except that 12 inches added to one or more full units shall be counted as one-half a unit of exit width.

(3) Units of exit width shall be measured in the clear at the narrowest point of the means of egress except that a handrail may project inside the measured width on each side not more than 5 inches and a stringer may project inside the measured width not more than 1 1/2 inches. An exit or exit access door swinging into an aisle or passageway shall not restrict the effective width thereof at any point during its swing to less than the minimum widths hereafter specified.

[Order 73-5, § 296-24-56505, filed 5/9/73 and Order 73-4, § 296-24-56505, filed 5/7/73.]

WAC 296-24-56507 Egress capacity and occupant load. (1) The capacity of means of egress for any floor, balcony, tier, or other occupied space shall be sufficient for the occupant load thereof. The occupant load shall be the maximum number of persons that may be in the space at any time.

(2) Where exits serve more than one floor, only the occupant load of each floor considered individually need be used in computing the capacity of the exits at that floor, provided that exit capacity shall not be decreased in the direction of exit travel.

[Order 73-5, § 296-24-56507, filed 5/9/73 and Order 73-4, § 296-24-56507, filed 5/7/73.]

WAC 296-24-56509 Arrangement of exits. When more than one exit is required from a story, at least two of the exits shall be remote from each other and so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency condition.

[Order 73-5, § 296-24-56509, filed 5/9/73 and Order 73-4, § 296-24-56509, filed 5/7/73.]

WAC 296-24-56511 Access to exits. (1) Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times. Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles, or corridors leading directly to every exit and so arranged as to provide convenient access for each occupant to at least two exits by separate ways of travel, except as a single exit or limited dead ends are permitted by other provisions of these standards shall be maintained.

(2) A door from a room to an exit or to a way of exit access shall be of the side-hinged, swinging type. It shall swing with exit travel when the room is occupied by more than 50 persons or used for a high hazard occupancy.

(3) In no case shall access to an exit be through a bathroom, or other room subject to locking, except where the exit is required to service only the room subject to locking.

(4) Ways of exit access and the doors to exits to which they lead shall be so designed and arranged as to be clearly recognizable as such. Hangings or draperies shall not be placed over exit doors or otherwise so located as to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

(5) Exit access shall be so arranged that it will not be necessary to travel toward any area of high hazard occupancy in order to reach the nearest exit, unless the path of travel is effectively shielded from the high hazard location by suitable partitions or other physical barriers.

(6) The minimum width of any way of exit access shall in no case be less than 28 inches. Where a single way of exit access leads to an exit, its capacity in terms of width

shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit access leads to an exit, each shall have a width adequate for the number of persons it must accommodate.

[Order 73-5, § 296-24-56511, filed 5/9/73 and Order 73-4, § 296-24-56511, filed 5/7/73.]

WAC 296-24-56513 Exterior ways of exit access. (1) Access to an exit may be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this section.

(2) Exterior ways of exit access shall have smooth, solid floors, substantially level, and shall have guards on the unenclosed sides.

(3) Where accumulation of snow or ice is likely because of the climate, the exterior way of exit access shall be protected by a roof, unless it serves as the sole normal means of access to the rooms or spaces served, in which case it may be assumed that snow and ice will be regularly removed in the course of normal occupancy.

(4) A permanent, reasonably straight path of travel shall be maintained over the required exterior way of exit access. There shall be no obstruction by railings, barriers, or gates that divide the open space into sections appurtenant to individual rooms, apartments, or other uses. Where the director or his/her duly authorized representative finds the required path of travel to be obstructed by furniture or other movable objects, he/she may require that they be fastened out of the way or he/she may require that railings or other permanent barriers be installed to protect the path of travel against encroachment.

(5) An exterior way of exit access shall be so arranged that there are no dead ends in excess of 20 feet. Any unenclosed exit served by an exterior way of exit access shall be so located that no part of the exit extends past a vertical plane 20 feet and one-half the required width of the exit from the end of and at right angles to the way of exit access.

(6) Any gallery, balcony, bridge, porch or other exterior exit access that projects beyond the outside wall of the building shall comply with the requirements of this section as to width and arrangement.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-56513, filed 11/14/88; Order 73-5, § 296-24-56513, filed 5/9/73 and Order 73-4, § 296-24-56513, filed 5/7/73.]

WAC 296-24-56515 Discharge from exits. (1) All exits shall discharge directly to the street, or to a yard, court, or other open space that gives safe access to a public way. The streets to which the exits discharge shall be of width adequate to accommodate all persons leaving the building. Yards, courts, or other open spaces to which exits discharge shall also be of adequate width and size to provide all persons leaving the building with ready access to the street.

(2) Stairs and other exits shall be so arranged as to make clear the direction of egress to the street. Exit stairs that continue beyond the floor of discharge shall be interrupted at the floor of discharge by partitions, doors, or other effective means.

(3) Where a doorway or corner of a building is located near a railroad or trolley track so that a worker is liable to walk upon the track in front of an approaching engine or cars a standard safeguard shall be installed with a warning sign.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-56515, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-56515, filed 5/9/73 and Order 73-4, § 296-24-56515, filed 5/7/73.]

WAC 296-24-56517 Headroom. Means of egress shall be so designed and maintained as to provide adequate headroom, but in no case shall the ceiling height be less than 7 feet 6 inches nor any projection from the ceiling be less than 6 feet 8 inches from the floor.

[Order 73-5, § 296-24-56517, filed 5/9/73 and Order 73-4, § 296-24-56517, filed 5/7/73.]

WAC 296-24-56519 Changes in elevation. Where a means of egress is not substantially level, such differences in elevation shall be negotiated by stairs or ramps.

[Order 73-5, § 296-24-56519, filed 5/9/73 and Order 73-4, § 296-24-56519, filed 5/7/73.]

WAC 296-24-56521 Maintenance and workmanship. (1) Doors, stairs, ramps, passages, signs, and all other components of means of egress shall be of substantial, reliable construction and shall be built or installed in a workmanlike manner.

(2) Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

(3) Any device or alarm installed to restrict the improper use of an exit shall be so designed and installed that it cannot, even in cases of failure, impede or prevent emergency use of such exit.

[Order 73-5, § 296-24-56521, filed 5/9/73 and Order 73-4, § 296-24-56521, filed 5/7/73.]

WAC 296-24-56523 Furnishings and decorations. (1) No furnishings, decorations, or other objects shall be so place as to obstruct exits, access thereto, egress therefrom, or visibility thereof.

(2) No furnishings or decorations of an explosive or highly flammable character shall be used in any occupancy.

[Order 73-5, § 296-24-56523, filed 5/9/73 and Order 73-4, § 296-24-56523, filed 5/7/73.]

WAC 296-24-56525 Automatic sprinkler systems. All automatic sprinkler systems shall be continuously maintained in reliable operating condition at all times, and such periodic inspections and tests shall be made as are necessary to assure proper maintenance.

[Order 73-5, § 296-24-56525, filed 5/9/73 and Order 73-4, § 296-24-56525, filed 5/7/73.]

WAC 296-24-56527 Fire alarm signaling systems. The employer shall assure that fire alarm signaling systems are maintained and tested in accordance with the requirements of WAC 296-24-63107.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-56527, filed 12/24/81; Order 73-5, § 296-24-56527, filed 5/9/73 and Order 73-4, § 296-24-56527, filed 5/7/73.]

WAC 296-24-56529 Fire retardant paints. Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary flame retardant properties.

[Order 73-5, § 296-24-56529, filed 5/9/73 and Order 73-4, § 296-24-56529, filed 5/7/73.]

WAC 296-24-56531 Exit marking. (1) Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants.

(2) Any door, passage, or stairway which is neither an exit nor a way of exit access, and which is so located or arranged as to be likely to be mistaken for an exit, shall be identified by a sign reading "not an exit" or similar designation, or shall be identified by a sign indicating its actual character, such as "to basement," "storeroom," "linen closet," or the like.

(3) Every required sign designating an exit or way of exit access shall be so located and of such size, color, and design as to be readily visible. No decorations, furnishings, or equipment which impair visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision to the required exit sign of such a character as to so detract attention from the exit sign that it may not be noticed.

(4) Every exit sign shall be distinctive in color and shall provide contrast with decorations, interior finish, or other signs.

(5) A sign reading "exit," or similar designation, with an arrow indicating the direction, shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent.

(6) Every exit sign shall be suitably illuminated by a reliable light source giving a value of not less than 5-foot candles on the illuminated surface. Artificial lights giving illumination to exit signs other than the internally illuminated types shall have screens, discs, or lenses of not less than 25 square inches area made of translucent material to show red or other specified designating color on the side of the approach.

(7) Each internally illuminated exit sign shall be provided in all occupancies where reduction of normal illumination is permitted.

(8) Every exit sign shall have the word "exit" in plainly legible letters not less than 6 inches high, with the principal strokes of letters not less than three-fourths-inch wide.

[Order 73-5, § 296-24-56531, filed 5/9/73 and Order 73-4, § 296-24-56531, filed 5/7/73.]

WAC 296-24-567 Employee emergency plans and fire prevention plans. (1) Emergency action plan.

(a) Scope and application. This subdivision applies to all emergency action plans required by a particular WISHA standard. The emergency action plan shall be in writing, and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

(b) Elements. The following elements, at a minimum, shall be included in the plan:

(i) Emergency escape procedures and emergency escape route assignments;

(ii) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

(iii) Procedures to account for all employees after emergency evacuation has been completed;

(iv) Rescue and medical duties for those employees who are to perform them;

(v) The preferred means of reporting fires and other emergencies; and

(vi) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

(c) Alarm systems.

(i) The employer shall establish an employee alarm system which complies with WAC 296-24-631.

(ii) If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.

(d) Evacuation. The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

(e) Training.

(i) Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

(ii) The employer shall review the plan with each employee covered by the plan at the following times:

(A) Initially when the plan is developed;

(B) Whenever the employee's responsibilities or designated actions under the plan change; and

(C) Whenever the plan is changed.

(iii) The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review.

(2) Fire prevention plan.

(a) Scope and application. This subsection applies to all fire prevention plans required by a particular WISHA standard. The fire prevention plan shall be in writing.

(b) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:

(i) A list of the major workplace fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

(ii) Names or regular job titles of those personnel responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and

(iii) Names or regular job titles of those personnel responsible for control of fuel source hazards.

(c) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

(d) Training.

(i) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

(ii) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review.

(e) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-567, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-567, filed 12/24/81.]

WAC 296-24-56701 Appendix. This appendix serves as a nonmandatory guideline to assist employers in complying with the appropriate requirements.

(1) Employee emergency plans. Emergency action plan elements. The emergency action plan should address emergencies that the employer may reasonably expect in the workplace. Examples are: Fire, toxic chemical releases; hurricanes; tornadoes; blizzards; floods; and others. The elements of the emergency action plan presented in WAC 296-24-567 (1)(b) can be supplemented by the following to more effectively achieve employee safety and health in an emergency. The employer should list in detail the procedures to be taken by those employees who have been selected to remain behind to care for essential plant operations until their evacuations become absolutely necessary. Essential plant operations may include the monitoring of plant power supplies, water supplies, and other essential services which cannot be shut down for every emergency alarm. Essential plant operations may also include chemical or manufacturing processes which must be shut down in stages or steps where certain employees must be present to assure that safe shut down procedures are completed.

The use of floor plans or workplace maps which clearly show the emergency escape routes should be included in the emergency action plan. Color coding will aid employees in determining their route assignments.

The employer should also develop and explain in detail what rescue and medical first aid duties are to be performed and by whom. All employees are to be told what actions they are to take in these emergency situations that the employer anticipates may occur in the workplace.

(2) Emergency evacuation. At the time of an emergency, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In some cases where the emergency is very grave, total and immediate evacuation of all employees is necessary. In other emergencies, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. In some cases, only those employees in the immediate area of the fire may be expected to evacuate or move to a safe area such as when a local application fire suppression system discharge employee alarm is sounded. Employees must be sure that they know what is expected of them in all such emergency possibilities which have been planned in order to provide assurance of their safety from fire or other emergency.

The designation of refuge or safe areas for evacuation should be determined and identified in the plan. In a building divided into fire zones by fire walls, the refuge area may still be within the same building but in a different zone from where the emergency occurs.

Exterior refuge or safe areas may include parking lots, open fields or streets which are located away from the site of the emergency and which provide sufficient space to accommodate the employees. Employees should be instructed to move away from the exit discharge doors of the building, and to avoid congregating close to the building where they may hamper emergency operations.

(3) Emergency action plan training. The employer should assure that an adequate number of employees are available at all times during working hours to act as evacuation wardens so that employees can be swiftly moved from the danger location to the safe areas. Generally, one warden for each twenty employees in the workplace should be able to provide adequate guidance and instruction at the time of a fire emergency. The employees selected or who volunteer to serve as wardens should be trained in the complete workplace layout and the various alternative escape routes from the workplace. All wardens and fellow employees should be made aware of handicapped employees who may need extra assistance, such as using the buddy system, and of hazardous areas to be avoided during emergencies. Before leaving, wardens should check rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the area.

After the desired degree of evacuation is completed, the wardens should be able to account for or otherwise verify that all employees are in the safe areas.

In buildings with several places of employment, employers are encouraged to coordinate their plans with the other employers in the building. A building-wide or standardized plan for the whole building is acceptable provided that the employers inform their respective employees of their duties and responsibilities under the plan. The standardized plan need not be kept by each employer in the multi-employer building provided there is an accessible location within the building where the plan can be reviewed by affected employees. When multi-employer, building-wide plans are not feasible, employers should coordinate their plans with the other employers within the building to assure that conflicts and confusion are avoided during time of emergencies. In multistory buildings where more than one employer is on a single floor, it is essential that these employers coordinate their plans with each other to avoid conflicts and confusion.

(4) Fire prevention housekeeping. The standard calls for the control of accumulations of flammable and combustible waste materials.

It is the intent of this standard to assure that hazardous accumulations of combustible waste materials are controlled so that a fast developing fire, rapid spread of toxic smoke, or an explosion will not occur. This does not necessarily mean that each room has to be swept each day. Employers and employees should be aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses. Certainly, oil soaked rags have to be treated

differently than general paper trash in office areas. However, large accumulations of waste paper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this standard is concerned. Such combustible materials may be easily ignited by matches, welder's sparks, cigarettes, and similar low level energy ignition sources.

(5) Maintenance of equipment under the fire prevention plan. Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through periodic inspection or testing, that these controls are operable. Manufacturers' recommendations should be followed to assure proper maintenance procedures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-56701, filed 12/24/81.]

PART G-2
FIRE PROTECTION

WAC 296-24-585 Fire protection.

[Order 73-5, § 296-24-585, filed 5/9/73 and Order 73-4, § 296-24-585, filed 5/7/73.]

WAC 296-24-58501 Definitions applicable to fire protection. (1) "Class A fires" are fires in ordinary combustible materials, such as wood, cloth, paper, and rubber.

(2) "Class B fires" are fires in flammable liquids, gases, and greases.

(3) "Class C fires" are fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is deenergized, extinguisher for Class A or B fires may be used safely.)

(4) "Class D fires" are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

(5) Classification of portable fire extinguishers: "Portable fire extinguishers" are classified for use on certain classes of fires and rated for relative extinguishing effectiveness at a temperature of plus 70°F by nationally recognized testing laboratories. This is based upon the preceding classification of fires and the fire extinguishment potentials as determined by fire tests.

Note: The classification and rating system described in this section is that used by Underwriters' Laboratories, Inc. and Underwriters' Laboratories of Canada and is based on extinguishing preplanned fires of determined size and description as follows:

(a) Class A rating—Wood and excelsior fires excluding deep-seated conditions.

(b) Class B rating—Two-inch depth gasoline fires in square pans.

(c) Class C rating—No fire test. Agent must be a nonconductor of electricity.

(d) Class D rating—Special tests on specific combustible metal fires.

(6) A "light hazard" is a situation where the amount of combustibles or flammable liquids present is such that fires of small size may be expected. These may include offices, schoolrooms, churches, assembly halls, telephone exchanges, etc.

(7) An "ordinary hazard" is a situation where the amount of combustibles or flammable liquids present is such that fires of moderate size may be expected. These may include mercantile storage and display, auto showrooms, parking garages, light manufacturing, warehouses not classified as extra hazard, school shop areas, etc.

(8) An "extra hazard" is a situation where the amount of combustibles or flammable liquids present is such that fires of severe magnitude may be expected. These may include woodworking, auto repair, aircraft servicing, warehouses with high-piled (14 feet or higher) combustibles, and processes such as flammable liquid handling, painting, dipping, etc.

(9) Sprinkler system: A "sprinkler system," for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply, such as a gravity tank, fire pump, reservoir, or pressure tank and/or connection by underground piping to a city main. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

Note: The design and installation of water supply facilities such as gravity tanks, fire pumps, reservoirs, or pressure tanks, and underground piping are covered by NFPA Standards No. 22-1970, Water Tanks for Private Fire Protection; No. 20-1970, Installation of Centrifugal Fire Pumps and No. 24-1970, Outside Protection.

(10) Sprinkler alarms: A "sprinkler alarm" unit is an assembly of apparatus approved for the service and so constructed and installed that any flow of water from a sprinkler system equal to or greater than that from a single automatic sprinkler will result in an audible alarm signal on the premises.

(11) Class of service—Standpipe systems: "Standpipe systems" are grouped into three general classes of service for the intended use in the extinguishment of fire.

(a) Class I: For use by fire departments and those trained in handling heavy fire streams (2 1/2- inch hose).

(b) Class II: For use primarily by the building occupants until the arrival of the fire department (small hose).

(c) Class III: For use by either fire departments and those trained in handling heavy hose streams or by the building occupants.

(12) Class I service: "Class I service" is a standpipe system capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings or for exposure fire.

(13) Class II service: "Class II service" is a standpipe system which affords a ready means for the control of incipient fires by the occupants of buildings during working hours and by watchperson and those present during the night time and holidays.

(14) Class III service: "Class III service" is a standpipe system capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings as well as providing a ready means for the control of fires by the occupants of the building.

(15) Standpipe system: "Standpipe systems" are usually of the following types:

(a) A wet standpipe system having a supply valve open and water pressure maintained at all times.

(b) A standpipe system so arranged through the use of approved devices as to admit water to the system automatically by opening a hose valve.

(c) A standpipe system arranged to admit water to the system through manual operation of approved remote control devices located at each hose station.

(d) Dry standpipe having no permanent water supply. See also (11) of this section.

(16) Type I storage: "Type I storage" is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored over 15 feet but not more than 21 feet high in solid piles or over 12 feet but not more that 21 feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification.

(17) Type II storage: "Type II storage" is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored not over 15 feet high in solid piles or not over 12 feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification.

(18) Type III storage: "Type III storage" is that in which the stored commodities, packaging, and storage aids are noncombustible or contain only a small concentration of combustibles which are incapable of producing a fire that would cause appreciable damage to the commodities stored or to noncombustible wall, floor or roof construction. Ordinary combustible commodities in completely sealed noncombustible containers may qualify in this classification. General commodity storage that is subject to frequent changing and storage of combustible packaging and storage aids is excluded from this category.

(19) Approved: "Approved" means listed or approved by: (a) At least one of the following nationally recognized testing laboratories: Factory Mutual Engineering Corp.; Underwriters' Laboratories, Inc., or (b) federal agencies such as Mine Safety and Health Administration (MSHA); the National Institute for Occupational Safety and Health (NIOSH); Department of Transportation; or U.S. Coast Guard, which issue approvals for such equipment.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-58501, filed 7/20/94, effective 9/20/94; Order 74-27, § 296-24-58501, filed 5/7/74; Order 73-5, § 296-24-58501, filed 5/9/73 and Order 73-4, § 296-24-58501, filed 5/7/73.]

WAC 296-24-58503 Scope, application and definitions applicable. (1) Scope. This section contains requirements for fire brigades, and all portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of this chapter.

(2) Application. This section applies to all employments except for maritime, and construction. This section shall apply to agriculture March 1, 1995.

(3) Definitions applicable to this section.

(a) "After-flame," means the time a test specimen continues to flame after the flame source has been removed.

(b) "Aqueous film forming foam (AFFF)," means a fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

(c) "Approved," means acceptable to the director under the following criteria:

(i) If it is accepted, or certified, or listed, or labeled or otherwise determined to be safe by a nationally recognized testing laboratory; or

(ii) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency and found in compliance with the provisions of the applicable National Fire Protection Association Fire Code; or

(iii) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director; and

(iv) For the purposes of (c) of this subsection:

(A) Equipment is listed if it is of a kind mentioned in a list which is published by a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and which states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner;

(B) Equipment is labeled if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner;

(C) Equipment is accepted if it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes;

(D) Equipment is certified if it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner or is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and if it bears a label, tag, or other record of certification; and

(E) Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(d) "Automatic fire detection device," means a device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.

(e) "Buddy-breathing device," means an accessory to self-contained breathing apparatus which permits a second person to share the same air supply as that of the wearer of the apparatus.

(f) "Carbon dioxide," means a colorless, odorless, electrically nonconductive inert gas (chemical formula CO_2) that is a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.

(g) "Class A fire," means a fire involving ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.

(h) "Class B fire," means a fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

(i) "Class C fire," means a fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media.

(j) "Class D fire," means a fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

(k) "Dry chemical," means an extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

(l) "Dry powder," means a compound used to extinguish or control Class D fires.

(m) "Education," means the process of imparting knowledge or skill through systematic instruction. It does not require formal classroom instruction.

(n) "Enclosed structure," means a structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat similar to those found in buildings.

(o) "Extinguisher classification," means the letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

(p) "Extinguisher rating," means the numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

(q) "Fire brigade," (private fire department, industrial fire department) means an organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations.

(r) "Fixed extinguishing system," means a permanently installed system that either extinguishes or controls a fire at the location of the system.

(s) "Flame resistance," is the property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

(t) "Foam," means a stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

(u) "Gaseous agent," is a fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

(v) "Halon 1211," means a colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula $CBrC1F_2$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

(w) "Halon 1301," means a colorless, odorless, electrically nonconductive gas (chemical formula $CBrF_3$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.

(x) "Helmet," is a head protective device consisting of a rigid shell, energy absorption system and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

(y) "Incipient stage fire," means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

(z) "Inspection," means a visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of a fire.

(aa) "Interior structural fire fighting," means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

(bb) "Lining," means a material permanently attached to the inside of the outer shell of a garment for the purpose of thermal protection and padding.

(cc) "Local application system," means a fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to automatically discharge extinguishing agent directly on the burning material to extinguish or control a fire.

(dd) "Maintenance," means the performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fitting, devices and agent supplies.

(ee) "Multipurpose dry chemical," means a dry chemical which is approved for use on Class A, Class B and Class C fires.

(ff) "Outer shell," is the exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. It is attached to the vapor barrier and liner and is usually constructed with a storm flap, suitable closures, and pockets.

(gg) "Positive-pressure breathing apparatus," means self-contained breathing apparatus in which the pressure in the breathing zone is positive in relation to the immediate environment during inhalation and exhalation.

(hh) "Predischarge employee alarm," means an alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

(ii) "Quick disconnect valve," means a device which starts the flow of air by inserting of the hose (which leads from the facepiece) into the regulator of self-contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator.

(jj) "Sprinkler alarm," means an approved device installed so that any waterflow from a sprinkler system equal to or greater than that from single automatic sprinkler will result in an audible alarm signal on the premises.

(kk) "Sprinkler system," means a system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply, and a network of specially sized piping and sprinklers which are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

(ll) "Standpipe systems:"

(i) "Class I standpipe system," means a two and one-half-inch (6.3 cm) hose connection for use by fire departments and those trained in handling heavy fire streams.

(ii) "Class II standpipe system," means a one and one-half-inch (3.8 cm) hose system which provides a means for the control or extinguishment of incipient stage fires.

(iii) "Class III standpipe system," means a combined system of hose which is for the use of employees trained in the use of hose operations and which is capable of furnishing effective water discharge during the more advanced stages of fire (beyond the incipient stage) in the interior of workplaces. Hose outlets are available for both one and one-half-inch (3.8 cm) and two and one-half-inch (6.3 cm) hose.

(iv) "Small hose system," means a system of hose ranging in diameter from five-eighths-inch (1.6 cm) up to one and one-half-inch (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

(mm) "Total flooding system," means a fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of fire extinguishment or control.

(nn) "Training," means the process of making proficient through instruction and hands-on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used in the performance of assigned duties.

(oo) "Vapor barrier," means that material used to prevent or substantially inhibit the transfer of water, corrosive liquids and steam or other hot vapors from the outside of a garment to the wearer's body.

[Statutory Authority: Chapter 49.17 RCW. 94-06-068 (Order 93-17), § 296-24-58503, filed 3/2/94, effective 3/1/95; 88-23-054 (Order 88-25), § 296-24-58503, filed 11/14/88; 87-24-051 (Order 87-24), § 296-24-58503, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58503, filed 12/24/81.]

WAC 296-24-58505 Fire brigades. Scope and application.

(1) Scope. This section contains requirements for the organization, training and personal protective equipment of fire brigades whenever they are established by an employer.

(2) Application. The requirements of this section apply to fire brigades, industrial fire departments and private or contractual type fire departments. Personal protective equipment requirements apply only to members of fire brigades performing interior structural fire fighting. The requirements of this section do not apply to airport crash rescue or forest fire fighting operations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58505, filed 12/24/81.]

WAC 296-24-58507 Organization. (1) Organizational statement. The employer shall prepare and maintain a statement or written policy which establishes the existence of a fire brigade; the basic organizational structure; the type, amount, and frequency of training to be provided to fire brigade members; the expected number of members in the fire brigade; and the functions that the fire brigade is to perform at the workplace. The organizational statement shall be available for inspection by the director and by employees or their designated representatives.

(2) Personnel. The employer shall assure that employees who are expected to do interior structural fire fighting are physically capable of performing duties which may be assigned to them during emergencies. The employer shall not permit employees with known heart disease, epilepsy, or emphysema, to participate in fire brigade emergency activities unless a physician's certificate of the employees' fitness to participate in such activities is provided. For employees assigned to fire brigades before September 15, 1980, this section is effective on September 15, 1990. For employees assigned to fire brigades on or after September 15, 1980, this section is effective thirty days after filing with the code reviser.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58507, filed 12/24/81.]

WAC 296-24-58509 Training and education. (1) The employer shall provide training and education for all fire brigade members commensurate with those duties and functions that fire brigade members are expected to perform. Such training and education shall be provided to fire brigade members before they perform fire brigade emergency activities. Fire brigade leaders and training instructors shall be provided with training and education which is more comprehensive than that provided to the general membership of the fire brigade.

(2) The employer shall assure that training and education is conducted frequently enough to assure that each member of the fire brigade is able to perform the member's assigned duties and functions satisfactorily and in a safe manner so as not to endanger fire brigade members or other employees. All fire brigade members shall be provided with training at least annually. In addition, fire brigade members who are expected to perform interior structural fire fighting shall be provided with an education session or training at least quarterly.

(3) The quality of the training an education program for fire brigade members shall be similar to those conducted by such fire training schools as the Maryland Fire and Rescue Institute; Iowa Fire Service Extension; West Virginia Fire Service Extension; Georgia Fire Academy; New York State Department, Fire Prevention and Control; Louisiana State University Firemen Training Program; or Washington State's Fire Service Training Commission for Vocational Education.

(For example, for the oil refinery industry, with its unique hazards, the training and education program for those fire brigade members shall be similar to those conducted by Texas A and M University, Lamar University, Reno Fire School, or the Delaware State Fire School.)

(4) The employer shall inform fire brigade members about special hazards such as storage and use of flammable liquids and gases, toxic chemicals, radioactive sources, and water reactive substances, to which they may be exposed during fire and other emergencies. The fire brigade members shall also be advised of any changes that occur in relation to the special hazards. The employer shall develop and make available for inspection by fire brigade members, written procedures that describe the actions to be taken in situations involving the special hazards and shall include these in the training and education program.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58509, filed 12/24/81.]

WAC 296-24-58511 Fire fighting equipment. The employer shall maintain and inspect, at least annually, fire fighting equipment to assure the safe operational condition of the equipment. Portable fire extinguishers and respirators shall be inspected at least monthly. Fire fighting equipment that is in damaged or unserviceable condition shall be removed from service and replaced.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58511, filed 12/24/81.]

WAC 296-24-58513 Protective clothing. The following requirements apply to those employees who perform interior structural fire fighting. The requirements do not apply to employees who use fire extinguishers or standpipe systems to control or extinguish fires only in the incipient stage.

(1) General.

(a) The employer shall provide at no cost to the employee and assure the use of protective clothing which complies with the requirements of this section. The employer shall assure that protective clothing ordered or purchased after January 1, 1982, meets the requirements contained in this section. As the new equipment is provided, the employer shall assure that all fire brigade members wear the equipment when performing interior structural fire fighting. After July 1, 1985, the employer shall assure that all fire brigade members wear protective clothing meeting the requirements of this section when performing interior structural fire fighting.

(b) The employer shall assure that protective clothing protects the head, body, and extremities, and consists of at least the following components: Foot and leg protection; hand protection; body protection; eye, face and head protection.

(2) Foot and leg protection.

(a) Foot and leg protection shall meet the requirements of (b) and (c) of this subsection, and may be achieved by either of the following methods:

(i) Fully extended boots which provide protection for the legs; or

(ii) Protective shoes or boots worn in combination with protective trousers that meet the requirements of subsection (3) of this section.

(b) Protective footwear shall meet the requirements of WAC 296-24-088 for Class 75 footwear. In addition, protective footwear shall be water-resistant for at least five inches (12.7 cm) above the bottom of the heel and shall be equipped with slip-resistant outer soles.

(c) Protective footwear shall be tested in accordance with WAC 296-24-63599(1) Appendix E, and shall provide protection against penetration of the midsole by a size 8D common nail when at least 300 pounds (1330 N) of static force is applied to the nail.

(3) Body protection.

(a) Body protection shall be coordinated with foot and leg protection to ensure full body protection for the wearer. This shall be achieved by one of the following methods:

(i) Wearing of a fire-resistive coat meeting the requirements of (b) of this subsection, in combination with fully extended boots meeting the requirements of subsection (2)(b) and (c) of this section; or

(ii) Wearing of fire-resistive coat in combination with protective trousers both of which meet the requirements of (b) of this subsection.

(b) The performance, construction, and testing of fire-resistive coats and protective trousers shall be at least equivalent to the requirements of the National Fire Protection Association (NFPA) standard NFPA No. 1971-1975, "Protective Clothing for Structural Fire Fighting," (see WAC 296-24-63499, Appendix D) with the following permissible variations from those requirements:

(i) Tearing strength of the outer shell shall be a minimum of eight pounds (35.6 N) in any direction when tested in accordance with WAC 296-24-63599(2), Appendix E; and

(ii) The outer shell may discolor but shall not separate or melt when placed in a forced air laboratory oven at a temperature of 500°F (260°C) for a period of five minutes. After cooling to ambient temperature and using the test method specified in WAC 296-24-63599(3) Appendix E, char length shall not exceed 4.0 inches (10.2 cm) and afterflame shall not exceed 2.0 seconds.

(4) Hand protection.

(a) Hand protection shall consist of protective gloves or glove system which will provide protection against cut, puncture, and heat penetration. Gloves or glove system shall be tested in accordance with the test methods contained in the National Institute for Occupational Safety and Health (NIOSH) 1976 publication, "The Development of Criteria for Fire Fighter's Gloves; Vol. II, Part II: Test Methods," (see WAC 296-24-63499, Appendix D—Availability of publications incorporated by references in WAC 296-24-58505—Fire brigades) and shall meet the following criteria for cut, puncture, and heat penetration:

(i) Materials used for gloves shall resist surface cut by a blade with an edge having a 60 degree included angle and a .001 inch (.0025 cm.) radius, under an applied force of 16 lbf (72N) and at a slicing velocity of greater or equal to 60 in/min. (2.5 cm/sec);

(ii) Materials used for the palm and palm side of the fingers shall resist puncture by a penetrometer (simulating a 4d lath nail), under an applied force of 13.2 lbf (60N) and at a velocity greater or equal to 20 in/min. (.85 cm/sec); and

(iii) The temperature inside the palm and gripping surface of the fingers of gloves shall not exceed 135°F (57°C) when gloves or glove system are exposed to 932°F (500°C) for five seconds at 4 psi (28 kPa) pressure.

(b) Exterior materials of gloves shall be flame resistant and shall be tested in accordance with WAC 296-24-63599(3) Appendix E. Maximum allowable after-flame shall be 2.0 seconds, and the maximum char length shall be 4.0 inches (10.2 cm).

(c) When design of the fire-resistive coat does not otherwise provide protection for the wrists, protective gloves shall have wristlets of at least 4.0 inches (10.2 cm) in length to protect the wrist area when the arms are extended upward and outward from the body.

(5) Head, eye and face protection.

(a) Head protection shall consist of a protective head device with ear flaps and chin strap which meet the performance, construction, and testing requirements of the National Fire Safety and Research Office of the National Fire Prevention and Control Administration, United States Department of Commerce (now known as the United States Fire Administration), which are contained in, "Model Performance Criteria for Structural Fire Fighters' Helmets," (August 1977) (see WAC 296-24-63499, Appendix D).

(b) Protective eye and face devices which comply with WAC 296-24-078 shall be used by fire brigade members when performing operations where the hazards of flying or falling materials which may cause eye and face injuries are present. Protective eye and face devices provided as accessories to protective head devices (face shields) are permitted when such devices meet the requirements of WAC 296-24-078.

(c) Full facepieces, helmets, or hoods of breathing apparatus which meet the requirements of WAC 296-62-071 and 296-24-58515, shall be acceptable as meeting the eye and face protection requirements of (b) of this subsection.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-58513, filed 7/20/94, effective 9/20/94; 92-23-017 (Order 92-13), § 296-24-58513, filed 11/10/92, effective 12/18/92; 90-03-029 (Order 89-20), § 296-24-58513, filed 1/11/90, effective 2/26/90; 88-14-108 (Order 88-11), § 296-24-58513, filed 7/6/88; 87-24-051 (Order 87-24), § 296-24-58513, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58513, filed 12/24/81.]

WAC 296-24-58515 Respiratory protection devices. (1) General requirements.

(a) The employer shall provide at no cost to the employee and assure the use of respirators which comply with the requirements of this section. The employer shall assure that respiratory protective devices worn by brigade members meet the requirements contained in WAC 296-62-071, and the requirements contained in this section, and are certified under 30 CFR Part II.

(b) Approved self-contained breathing apparatus with full-facepiece, or with approved helmet or hood configuration, shall be provided to and worn by fire brigade members while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency may be present. Such apparatus shall also be worn during emergency situations involving toxic substances.

(c) Approved self-contained breathing apparatus may be equipped with either a "buddy-breathing" device or a quick disconnect valve, even if these devices are not certified by NIOSH. If these accessories are used, they shall not cause damage to the apparatus, or restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus.

(d) Approved self-contained compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet DOT and NIOSH criteria.

(e) Self-contained breathing apparatus shall have a minimum service life rating of thirty minutes in accordance with the methods and requirements of the mine safety and health administration (MSHA) and NIOSH, except for escape self-contained breathing apparatus (ESCBA) used only for emergency escape purposes.

(f) Self-contained breathing apparatus shall be provided with an indicator which automatically sounds an audible alarm when the remaining service life of the apparatus is reduced to within a range of twenty to twenty-five percent of its rated service time.

(2) Positive-pressure breathing apparatus.

(a) The employer shall assure that self-contained breathing apparatus ordered or purchased after January 1, 1982, for use by fire brigade members performing interior structural fire fighting operations, are of the pressure-demand or other positive-pressure type. Effective July 1, 1983, only pressure-demand or other positive-pressure self-contained breathing apparatus shall be worn by fire brigade members performing interior structural fire fighting.

(b) This section does not prohibit the use of a self-contained breathing apparatus where the apparatus can be switched from a demand to a positive-pressure mode. However, such apparatus shall be in the positive-pressure mode when fire brigade members are performing interior structural fire fighting operations.

(c) Negative-pressure self-contained breathing apparatus with a rated service life of more than two hours and which have a minimum protection factor of 5,000, as determined by an acceptable quantitative fit test performed on each individual, is acceptable for use only during those interior structural fire fighting situations for which the employer demonstrates that long duration breathing apparatus is necessary. Quantitative fit test procedures shall be available for inspection by the director or authorized representative. Such negative-pressure breathing apparatus will continue to be acceptable for eighteen months after a positive-pressure breathing apparatus with the same or longer rated service life is certified by NIOSH. After this eighteen-month period, all self-contained breathing apparatus used for these long duration situations shall be of the positive-pressure type.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-58515, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58515, filed 12/24/81.]

WAC 296-24-58517 Appendix A—Fire brigades. (1) Scope. This section does not require an employer to organize a fire brigade. However, if an employer does decide to organize a fire brigade, the requirements of this section apply.

(2) Prefire planning. It is suggested that prefire planning be conducted by the local fire department and/or the workplace fire brigade in order for them to be familiar with the workplace and process hazards. Involvement with the local fire department or fire prevention bureau is encouraged to facilitate coordination and cooperation between members of the fire brigade and those who might be called upon for assistance during a fire emergency.

(3) Organizational statement. In addition to the information required in the organizational statement, WAC 296-24-58507(1), it is suggested that the organizational statement also contain the following information: A description of the duties that the fire brigade members are expected to perform; the line authority of each fire brigade officer; the number of the fire brigade officers and number of training instructors; and a list and description of the types of awards or recognition that brigade members may be eligible to receive.

(4) Physical capability. The physical capability requirement applies only to those fire brigade members who perform interior structural fire fighting. Employees who cannot meet the physical capability requirement may still be members of the fire brigade as long as such employees do not perform interior structural fire fighting. It is suggested that fire brigade members who are unable to perform interior structural fire fighting be assigned less stressful and physically demanding fire brigade duties, e.g., certain types of training, recordkeeping, fire prevention inspection and maintenance, and fire pump operations.

Physically capable can be defined as being able to perform those duties specified in the training requirements of WAC 296-24-58509. Physically capable can also be determined by physical performance tests or by a physical examination when the examining physician is aware of the duties that the fire brigade member is expected to perform.

It is also recommended that fire brigade members participate in a physical fitness program. There are many benefits which can be attributed to being physically fit. It is believed that physical fitness may help to reduce the number of sprain and strain injuries as well as contributing to the improvement of the cardiovascular system.

(5) Training and education. The section on training and education does not contain specific training and education requirements because the type, amount, and frequency of training and education will be as varied as are the purposes for which fire brigades are organized. However, the section does require that training and education be commensurate with those functions that the fire brigade is expected to perform; i.e., those functions specified in the organizational statement. Such a performance requirement provides the necessary flexibility to design a training program which meets the needs of individual fire brigades.

At a minimum, hands-on training is required to be conducted annually for all fire brigade members. However, for those fire brigade members who are expected to perform interior structural fire fighting, some type of training or education session must be provided at least quarterly.

In addition to the required hands-on training, it is strongly recommended that fire brigade members receive other types of training and education such as: Classroom instruction, review of emergency action procedures, prefire planning, review of special hazards in the workplace, and practice in the use of self-contained breathing apparatus.

It is not necessary for the employer to duplicate the same training or education that a fire brigade member receives as a member of a community volunteer fire department, rescue squad, or similar organization. However, such training or education must have been provided to the fire brigade member within the past year and it must be documented that the fire brigade member has received the training or education. For example: There is no need for a fire brigade member to receive another training class in the use of positive-pressure self-contained breathing apparatus if the fire brigade member has recently completed such training as a member of a community fire department. Instead, the fire brigade member should receive training or education covering other important equipment or duties of the fire brigade as they relate to the workplace hazards, facilities and processes.

It is generally recognized that the effectiveness of fire brigade training and education depends upon the expertise of those providing the training and education as well as the motivation of the fire brigade members. Fire brigade training instructors must receive a higher level of training and education than the fire brigade members they will be teaching. This includes being more knowledgeable about the functions to be performed by the fire brigade and the hazards involved. The instructors should be qualified to train fire brigade members and demonstrate skills in communication, methods of teaching, and motivation. It is important for instructors and fire brigade members alike to be motivated toward the goal of the fire brigade and be aware of the importance of the service that they are providing for the protection of other employees and the workplace.

It is suggested that publications from the International Fire Service Training Association, the National Fire Protection Association (NFPA-1041), the International Society of Fire Service Instructors and other fire training sources be consulted for recommended qualifications of fire brigade training instructors.

In order to be effective, fire brigades must have competent leadership and supervision. It is important for those who supervise the fire brigade during emergency situations, e.g., fire brigade chiefs, leaders, etc., to receive the necessary training and education for supervising fire brigade activities during these hazardous and stressful situations. These fire brigade members with leadership responsibilities should demonstrate skills in strategy and tactics, fire suppression and prevention techniques, leadership principles, prefire planning, and safety practices. It is again suggested that fire service training sources be consulted for determining the kinds of training and education which are necessary for those with fire brigade leadership responsibilities.

It is further suggested that fire brigade leaders and fire brigade instructors receive more formalized training and education on a continuing basis by attending classes provided by such training sources as universities and university fire extension services.

The following recommendations should not be considered to be all of the necessary elements of a complete comprehensive training program, but the information may be helpful as a guide in developing a fire brigade training program.

All fire brigade members should be familiar with exit facilities and their location, emergency escape routes for

handicapped workers, and the workplace "emergency action plan."

In addition, fire brigade members who are expected to control and extinguish fires in the incipient stage should, at a minimum, be trained in the use of fire extinguishers, standpipes, and other fire equipment they are assigned to use. They should also be aware of first aid medical procedures and procedures for dealing with special hazards to which they may be exposed. Training and education should include both classroom instruction and actual operation of the equipment under simulated emergency conditions. Hands-on type training must be conducted at least annually but some functions should be reviewed more often.

In addition to the above training, fire brigade members who are expected to perform emergency rescue and interior structural fire fighting should, at a minimum, be familiar with the proper techniques in rescue and fire suppression procedures. Training and education should include fire protection courses, classroom training, simulated fire situations including "wet drills" and, when feasible, extinguishment of actual mock fires. Frequency of training or education must be at least quarterly, but some drills or classroom training should be conducted as often as monthly or even weekly to maintain the proficiency of fire brigade members.

There are many excellent sources of training and education that the employer may want to use in developing a training program for the workplace fire brigade. These sources include publications, seminars, and courses offered by universities.

There are also excellent fire school courses by such facilities as Texas A and M University, Delaware State Fire School, Lamar University, and Reno Fire School, that deal with those unique hazards which may be encountered by fire brigades in the oil and chemical industry. These schools, and others, also offer excellent training courses which would be beneficial to fire brigades in other types of industries. These courses should be a continuing part of the training program, and employers are strongly encouraged to take advantage of these excellent resources.

It is also important that fire brigade members be informed about special hazards to which they may be exposed during fire and other emergencies. Such hazards as storage and use areas of flammable liquids and gases, toxic chemicals, water-reactive substances, etc., can pose difficult problems. There must be written procedures developed that describe the actions to be taken in situations involving special hazards. Fire brigade members must be trained in handling these special hazards as well as keeping abreast of any changes that occur in relation to these special hazards.

(6) Fire fighting equipment. It is important that fire fighting equipment that is in damaged or unserviceable condition be removed from service and replaced. This will prevent fire brigade members from using unsafe equipment by mistake.

Fire fighting equipment, except portable fire extinguishers and respirators, must be inspected at least annually. Portable fire extinguishers and respirators are required to be inspected at least monthly.

(7) Protective clothing.

(a) General. WAC 296-24-58513 does not require all fire brigade members to wear protective clothing. It is not the intention of these standards to require employers to provide a full ensemble of protective clothing for every fire brigade member without consideration given to the types of hazardous environments to which the fire brigade member might be exposed. It is the intention of these standards to require adequate protection for those fire brigade members who might be exposed to fires in an advanced stage, smoke, toxic gases, and high temperatures. Therefore, the protective clothing requirements only apply to those fire brigade members who perform interior structural fire fighting operations.

Additionally, the protective clothing requirements do not apply to the protective clothing worn during outside fire fighting operations (brush and forest fires, crash crew operations) or other special fire fighting activities. It is important that the protective clothing to be worn during these types of fire fighting operations reflect the hazards which are expected to be encountered by fire brigade members.

(b) Foot and leg protection. WAC 296-24-58513 permits an option to achieve foot and leg protection.

The section recognizes the interdependence of protective clothing to cover one or more parts of the body. Therefore, an option is given so that fire brigade members may meet the foot and leg requirements by either wearing long fire-resistive coats in combination with fully extended boots, or by wearing shorter fire-resistive coats in combination with protective trousers and protective shoes or shorter boots.

(c) Body protection. WAC 296-24-58513(3) provides an option for fire brigade members to achieve body protection. Fire brigade members may wear a fire-resistive coat in combination with fully extended boots, or they may wear a fire-resistive coat in combination with protective trousers.

Fire-resistive coats and protective trousers meeting all of the requirements contained in NFPA 1971-1975, "Protective Clothing for Structural Fire Fighters," are acceptable as meeting the requirements of this standard.

The lining is required to be permanently attached to the outer shell. However, it is permissible to attach the lining to the outer shell material by stitching in one area such as at the neck. Fastener tape or snap fasteners may be used to secure the rest of the lining to the outer shell to facilitate cleaning. Reference to permanent lining does not refer to a winter liner which is a detachable extra lining used to give added protection to the wearer against the effects of cold weather and wind.

(d) Hand protection. The requirements of WAC 296-24-58513(4) on hand protection may be met by protective gloves or a glove system. A glove system consists of a combination of different gloves. The usual components of a glove system consist of a pair of gloves, which provide thermal insulation to the hand, worn in combination with a second pair of gloves which provide protection against flame, cut and puncture.

It is suggested that protective gloves provide dexterity and a sense of feel for objects. Criteria and test methods for dexterity are contained in the NIOSH publications, "The Development of Criteria for Firefighters' Gloves; Vol. I: Glove Requirements," and "Vol. II: Glove Criteria and Test Methods." These NIOSH publications also contain a permissible modified version of Federal Test Method 191, Method 5903, (WAC 296-24-63599(3) Appendix E) for

flame resistance when gloves, rather than glove material, are tested for flame resistance.

(e) Head, eye and face protection. Head protective devices which meet the requirements contained in NFPA No. 1972 are acceptable as meeting the requirements of this standard for head protection.

Head protective devices are required to be provided with ear flaps so that the ear flaps will be available if needed. It is recommended that ear protection always be used while fighting interior structural fires.

Many head protective devices are equipped with face shields to protect the eyes and face. These face shields are permissible as meeting the eye and face protection requirements of this section as long as such face shields meet the requirements of WAC 296-24-078 of the general safety and health standards.

Additionally, full facepieces, helmets or hoods of approved breathing apparatus which meet the requirements of WAC 296-62-071 and 296-24-58515 are also acceptable as meeting the eye and face protection requirements.

It is recommended that a flame resistant protective head covering such as a hood or snood, which will not adversely affect the seal of a respirator facepiece, be worn during interior structural fire fighting operations to protect the sides of the face and hair.

(8) Respiratory protective devices. Respiratory protection is required to be worn by fire brigade members while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency is likely to be present; respirators are also to be worn during emergency situations involving toxic substances. When fire brigade members respond to emergency situations, they may be exposed to unknown contaminants in unknown concentrations. Therefore, it is imperative that fire brigade members wear proper respiratory protective devices during these situations. Additionally, there are many instances where toxic products of combustion are still present during mop-up and overhaul operations. Therefore, fire brigade members should continue to wear respirators during these types of operations.

Self-contained breathing apparatus are not required to be equipped with either buddy-breathing device or a quick disconnect valve. However, these accessories may be very useful and are acceptable as long as such accessories do not cause damage to the apparatus, restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus.

Buddy-breathing devices are useful for emergency situations where a victim or another fire brigade member can share the same air supply with the wearer of the apparatus for emergency escape purposes.

The employer is encouraged to provide fire brigade members with an alternative means of respiratory protection to be used only for emergency escape purposes if the self-contained breathing apparatus becomes inoperative. Such alternative means of respiratory protection may be either a buddy-breathing device or an escape self-contained breathing apparatus (ESCBA). The ESCBA is a short-duration respiratory protective device which is approved for only emergency escape purposes. It is suggested that if ESCBA units are used, that they be of at least five minutes service life.

Quick disconnect valves are devices which start the flow of air by insertion of the hose (which leads to the facepiece) into the regulator of self-contained breathing apparatus, and stop the flow of air by disconnecting the hose from the regulator. These devices are particularly useful for those positive-pressure self-contained breathing apparatus which do not have the capability of being switched from the demand to the positive-pressure mode.

The use of a self-contained breathing apparatus where the apparatus can be switched from a demand to a positive-pressure mode is acceptable as long as the apparatus is in the positive-pressure mode when performing interior structural fire fighting operations. Also acceptable are approved respiratory protective devices which have been converted to the positive-pressure type when such modification is accomplished by trained and experienced persons using kits or parts approved by NIOSH and provided by the manufacturer and by following the manufacturer's instructions.

There are situations which require the use of respirators which have a duration of two hours or more. Presently, there are no approved positive-pressure apparatus with a rated service life of more than two hours. Consequently, negative-pressure self-contained breathing apparatus with a rated service life of more than two hours and which have a minimum protection factor of 5,000 as determined by an acceptable quantitative fit test performed on each individual, will be acceptable for use during situations which require long duration apparatus. Long duration apparatus may be needed in such instances as working in tunnels, subway systems, etc. Such negative-pressure breathing apparatus will continue to be acceptable for a maximum of eighteen months after a positive-pressure apparatus with the same or longer rated service life of more than two hours is certified by NIOSH/MSHA. After this eighteen-month phase-in period, all self-contained breathing apparatus used for these long duration situations will have to be of the positive-pressure type.

Protection factor (sometimes called fit factor) is defined as the ratio of the contaminant concentrations outside of the respirator to the contaminant concentrations inside the facepiece of the respirator.

$$PF = \frac{\text{Concentration outside respirator}}{\text{Concentration inside facepiece}}$$

Protection factors are determined by quantitative fit tests. An acceptable quantitative fit test should include the following elements:

(a) A fire brigade member who is physically and medically capable of wearing respirators, and who is trained in the use of respirators, dons a self-contained breathing apparatus equipped with a device that will monitor the concentration of a contaminant inside the facepiece.

(b) The fire brigade member then performs a qualitative fit test to assure the best face-to-facepiece seal as possible. A qualitative fit test can consist of a negative-pressure test, positive-pressure test, isoamyl acetate vapor (banana oil) test, or an irritant smoke test. For more details on respirator fitting see the NIOSH booklet entitled, "A Guide to Industrial Respiratory Protection," June 1976, and HHS publication No. (NIOSH) 76-189.

(c) The wearer should then perform physical activity which reflects the level of work activity which would be expected during fire fighting activities. The physical activity should include simulated fire-ground work activity or physical exercise such as running-in-place, a step test, etc.

(d) Without readjusting the apparatus, the wearer is placed in a test atmosphere containing a nontoxic contaminant with a known, constant concentration.

The protection factor is then determined by dividing the known concentration of the contaminant in the test atmosphere by the concentration of the contaminant inside the facepiece when the following exercises are performed:

(i) Normal breathing with head motionless for one minute;

(ii) Deep breathing with head motionless for thirty seconds;

(iii) Turning head slowly from side to side while breathing normally, pausing for at least two breaths before changing direction. Continue for at least one minute;

(iv) Moving head slowly up and down while breathing normally, pausing for at least two breaths before changing direction. Continue for at least two minutes;

(v) Reading from a prepared text, slowly and clearly, and loudly enough to be heard and understood. Continue for one minute; and

(vi) Normal breathing with head motionless for at least one minute.

The protection factor which is determined must be at least 5,000. The quantitative fit test should be conducted at least three times. It is acceptable to conduct all three tests on the same day. However, there should be at least one hour between tests to reflect the protection afforded by the apparatus during different times of the day.

The above elements are not meant to be a comprehensive, technical description of a quantitative fit test protocol. However, quantitative fit test procedures which include these elements are acceptable for determining protection factors. Procedures for a quantitative fit test are required to be available for inspection by the director or authorized representative.

Organizations such as Los Alamos National Laboratory, Lawrence Livermore Laboratory, NIOSH, and American National Standards Institute (ANSI) are excellent sources for additional information concerning qualitative and quantitative fit testing.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-58517, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58517, filed 12/24/81.]

PART G-3
FIRE SUPPRESSION EQUIPMENT

WAC 296-24-592 Portable fire extinguishers. All sections of this chapter which include WAC 296-24-592 in the section number apply to portable fire extinguishers.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-592, filed 12/24/81.]

WAC 296-24-59201 Scope and application. The requirements of this section apply to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. WAC 296-24-59207 does not apply to extinguishers provided for employee use on the outside of workplace buildings or structures. Where extinguishers are provided but are not intended for employee use and the employer has an emergency action plan and a fire prevention plan which meet the requirements of WAC 296-24-567, then only the requirements of WAC 296-24-59209 and 296-24-59211 apply.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59201, filed 12/24/81.]

WAC 296-24-59203 Exemptions. (1) Where the employer has established and implemented a written fire safety policy which requires the immediate and total evacuation of employees from the workplace upon the sounding of a fire alarm signal and which includes an emergency action plan and a fire prevention plan which meet the requirements of WAC 296-24-567, and when extinguishers are not available in the workplace, the employer is exempt from all requirements of this section unless a specific standard in chapter 296-24 WAC requires that a portable fire extinguisher be provided.

(2) Where the employer has an emergency action plan meeting the requirements of WAC 296-24-567, which designates certain employees to be the only employees authorized to use the available portable fire extinguishers, and which requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm, the employer is exempt from the distribution requirements in WAC 296-24-59207.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59203, filed 12/24/81.]

WAC 296-24-59205 General requirements. (1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.

(2) Only approved portable fire extinguishers shall be used to meet the requirements of this section.

(3) The employer shall not provide or make available in the workplace portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents.

(4) The employer shall assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

(5) The employer shall permanently remove from service by January 1, 1982, all soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59205, filed 12/24/81.]

WAC 296-24-59207 Selection and distribution. (1) Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of

anticipated workplace fires and on the size and degree of hazard which would affect their use.

(2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.

(3) The employer may use uniformly spaced standpipe systems or hose stations connected to a sprinkler system installed for emergency use by employees instead of Class A portable fire extinguishers, provided that such systems meet the respective requirements of WAC 296-24-602 or 296-24-607, that they provide total coverage of the area to be protected, and that employees are trained at least annually in their use.

(4) The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.

(5) The employer shall distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

(6) The employer shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59207, filed 12/24/81.]

WAC 296-24-59209 Inspection, maintenance and testing. (1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

(2) Portable extinguishers or hose used in lieu thereof under WAC 296-24-59207(3) shall be visually inspected monthly.

(3) The employer shall assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record shall be available to the director upon request.

(4) The employer shall assure that stored-pressure dry chemical extinguishers that require a twelve-year hydrostatic test are emptied and subjected to applicable maintenance procedures every six years. Dry chemical extinguishers having nonrefillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the six-year requirement begins from that date.

(5) The employer shall assure that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59209, filed 12/24/81.]

WAC 296-24-59211 Hydrostatic testing. (1) The employer shall assure that hydrostatic testing is performed by trained persons with suitable testing equipment and facilities.

(2) The employer shall assure that portable extinguishers are hydrostatically tested at the intervals listed in Table I of this section, except under any of the following conditions:

(a) When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;

(b) When the cylinder or shell threads are damaged;

TABLE I

Type of Extinguishers	Test Interval (Years)
Soda acid (soldered brass shells) (until January 1, 1982)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until January 1, 1982)	(1)
Foam (stainless steel shell)	5
Aqueous film forming form (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated, with mild steel shell	12

(1) Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982. (Not permitted.)

(c) When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;

(d) When the extinguisher has been burned in a fire; or

(e) When a calcium chloride extinguishing agent has been used in a stainless steel shell.

(3) In addition to an external visual examination, the employer shall assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

(4) The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in subsection (2)(a) through (e) of this section.

(5) The employer shall assure that hydrostatic tests are performed on extinguisher hose assemblies which are equipped with a shut-off nozzle at the discharge end of the hose. The test interval shall be the same as specified for the extinguisher on which the hose is installed.

(6) The employer shall assure that carbon dioxide hose assemblies with a shut-off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).

(7) The employer shall assure that dry chemical and dry powder hose assemblies with a shut-off nozzle are hydrostatically tested at 300 psi (2,070 kPa).

(8) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.

(9) The employer shall assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.

(10) The employer shall assure that carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every five years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with 29 CFR 173.34(e)(15) may be hydrostatically tested every ten years.

(11) The employer shall assure that all stored pressure and Halon 1211 types of extinguishers are hydrostatically tested at the factory test pressure not to exceed two times the service pressure.

(12) The employer shall assure that acceptable self-generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).

(13) Air or gas pressure may not be used for hydrostatic testing.

(14) Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.

(15)(a) The equipment for testing compressed gas type cylinders shall be of the water-jacket type. The equipment shall be provided with an expansion indicator which operates with an accuracy within one percent of the total expansion or 0.1 cc (.1 mL) of liquid.

(b) The equipment for testing noncompressed gas type cylinders shall consist of the following:

(i) A hydrostatic test pump, hand or power operated, capable of producing not less than one hundred fifty percent of the test pressure, which shall include appropriate check valves and fittings;

(ii) A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet, or hose outlet, as is applicable; and

(iii) A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.

(16) The employer shall maintain and provide upon request to the director evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in Table I. Such evidence shall include the date of test, the test pressure used, the serial number, or other identifier of the fire extinguisher that was tested, and the person or agency performing the test. Such records shall be kept until the extinguisher is hydrostatically retested at the time interval specified in Table I, or until the extinguisher is taken out of service, whichever is less.

[Statutory Authority: Chapter 49.17 RCW. 92-23-017 (Order 92-13), § 296-24-59211, filed 11/10/92, effective 12/18/92; 87-24-051 (Order 87-24), § 296-24-59211, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59211, filed 12/24/81.]

WAC 296-24-59213 Training and education. (1) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

(2) The employer shall provide the education required in subsection (1) of this section upon initial employment and at least annually thereafter.

(3) The employer shall provide employees who have been designated to use fire fighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.

(4) The employer shall provide the training required in subsection (3) of this section upon initial assignment to the designated group of employees and at least annually thereafter.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59213, filed 12/24/81.]

WAC 296-24-59215 Appendix A—Portable fire extinguishers. (1) Scope and application. The scope and application of this section is written to apply to three basic types of workplaces. First, there are those workplaces where the employer has chosen to evacuate all employees from the workplace at the time of a fire emergency. Second, there are those workplaces where the employer has chosen to permit certain employees to fight fires and to evacuate all other nonessential employees at the time of a fire emergency. Third, there are those workplaces where the employer has chosen to permit all employees in the workplace to use portable fire extinguishers to fight fires.

The section also addresses two kinds of work areas. The entire workplace can be divided into outside (exterior) work areas and inside (interior) work areas. This division of the workplace into two areas is done in recognition of the different types of hazards employees may be exposed to during fire fighting operations. Fires in interior workplaces, pose a greater hazard to employees; they can produce greater exposure to quantities of smoke, toxic gases, and heat because of the capability of a building or structure to contain or entrap these products of combustion until the building can be ventilated. Exterior work areas, normally open to the environment, are somewhat less hazardous, because the products of combustion are generally carried away by the thermal column of the fire. Employees also have a greater selection of evacuation routes if it is necessary to abandon fire fighting efforts.

In recognition of the degree of hazard present in the two types of work areas, the standards for exterior work areas are somewhat less restrictive in regards to extinguisher distribution. WAC 296-24-59201 explains this by specifying which sections apply.

(2) Portable fire extinguisher exemptions. In recognition of the three options given to employers in regard to the amount of employee evacuation to be carried out, the standards permit certain exemptions based on the number of employees expected to use fire extinguishers.

Where the employer has chosen to totally evacuate the workplace at the time of a fire emergency and when fire extinguishers are not provided, the requirements of this section do not apply to that workplace.

Where the employer has chosen to partially evacuate the workplace or the effected area at the time of a fire emergency and has permitted certain designated employees to remain behind to operate critical plant operations or to fight fires with extinguishers, then the employer is exempt from the

distribution requirements of this section. Employees who will be remaining behind to perform incipient fire fighting or members of a fire brigade must be trained in their duties. The training must result in the employees becoming familiar with the locations of fire extinguishers. Therefore, the employer must locate the extinguishers in convenient locations where the employees know they can be found. For example, they could be mounted in the fire truck or cart that the fire brigade uses when it responds to a fire emergency. They can also be distributed as set forth in the National Fire Protection Association's Standard No. 10, "Portable Fire Extinguishers."

Where the employer has decided to permit all employees in the workplace to use fire extinguishers, then the entire WISHA standard applies.

(3) Portable fire extinguisher mounting. Previous standards for mounting fire extinguishers have been criticized for requiring specific mounting locations. In recognition of this criticism, the standard has been rewritten to permit as much flexibility in extinguisher mounting as is acceptable to assure that fire extinguishers are available when needed and that employees are not subjected to injury hazards when they try to obtain an extinguisher.

It is the intent of WISHA to permit the mounting of extinguishers in any location that is accessible to employees without the use of portable devices such as a ladder. This limitation is necessary because portable devices can be moved or taken from the place where they are needed and, therefore, might not be available at the time of an emergency.

Employers are given as much flexibility as possible to assure that employees can obtain extinguishers as fast as possible. For example, an acceptable method of mounting extinguishers in areas where fork lift trucks or tow-motors are used is to mount the units on retractable board which, by means of counterweighting, can be raised above the level where they could be struck by vehicular traffic. When needed, they can be lowered quickly for use. This method of mounting can also reduce vandalism and unauthorized use of extinguishers. The extinguishers may also be mounted as outlined in the National Fire Protection Association's Standard No. 10, "Portable Fire Extinguishers."

(4) Selection and distribution. The employer is responsible for the proper selection and distribution of fire extinguishers and the determination of the necessary degree of protection. The selection and distribution of fire extinguishers must reflect the type and class of fire hazards associated with a particular workplace.

Extinguishers for protecting Class A hazards may be selected from the following types: Water, foam, loaded stream, or multipurpose dry chemical. Extinguishers for protecting Class B hazards may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, dry chemicals, foam, or loaded stream. Extinguishers for Class C hazards may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, or dry chemical.

Combustible metal (Class D hazards) fires pose a different type of fire problem in the workplace. Extinguishers using water, gas, or certain dry chemicals cannot extinguish or control this type of fire. Therefore, certain metals have specific dry powder extinguishing agents which can extinguish or control this type of fire. Those agents which have been specifically approved for use on certain metal fires provide the best protection; however, there are also some "universal" type agents which can be used effectively on a variety of combustible metal fires if necessary. The "universal" type agents include: Foundry flux, Lith-X powder, TMB liquid, pyromet powder, TEC powder, dry talc, dry graphite powder, dry sand, dry sodium chloride, dry soda ash, lithium chloride, zirconium silicate, and dry dolomite.

Water is not generally accepted as an effective extinguishing agent for metal fires. When applied to hot burning metal, water will break down into its basic atoms of oxygen and hydrogen. This chemical breakdown contributes to the combustion of the metal. However, water is also a good universal coolant and can be used on some combustible metals, but only under proper conditions and application, to reduce the temperature of the burning metal below the ignition point. For example, automatic deluge systems in magnesium plants can discharge such large quantities of water on burning magnesium that the fire will be extinguished. The National Fire Protection Association has specific standards for this type of automatic sprinkler system. Further information on the control of metal fires with water can be found in the National Fire Protection Association's *Fire Protection Handbook.*

An excellent source of selection and distribution criteria is found in the National Fire Protection Association's Standard No. 10. Other sources of information include the National Safety Council and the employer's fire insurance carrier.

(5) Substitution of standpipe systems for portable fire extinguishers. The employer is permitted to substitute acceptable standpipe systems for portable fire extinguishers under certain circumstances. It is necessary to assure that any substitution will provide the same coverage that portable units provide. This means that fire hoses, because of their limited portability, must be spaced throughout the protected area so that they can reach around obstructions such as columns, machinery, etc., and so that they can reach into closets and other enclosed areas.

(6) Inspection, maintenance and testing. The ultimate responsibility for the inspection, maintenance and testing of portable fire extinguishers lies with the employer. The actual inspection, maintenance, and testing may, however, be conducted by outside contractors with whom the employer has arranged to do the work. When contracting for such work, the employer should assure that the contractor is capable of performing the work that is needed to comply with this standard.

If the employer should elect to perform the inspection, maintenance, and testing requirements of this section in-house, then the employer must make sure that those persons doing the work have been trained to do the work and to recognize problem areas which could cause an extinguisher to be inoperable. The National Fire Protection Association provides excellent guidelines in its standard for portable fire extinguishers. The employer may also check with the manufacturer of the unit that has been purchased and obtain guidelines on inspection, maintenance, and testing. Hydrostatic testing is a process that should be left to contractors or individuals using suitable facilities and having the training necessary to perform the work.

Any time the employer has removed an extinguisher from service to be checked or repaired, alternate equivalent protection must be provided. Alternate equivalent protection could include replacing the extinguisher with one or more units having equivalent or equal ratings, posting a fire watch, restricting the unprotected area from employee exposure, or providing a hose system ready to operate.

(7) Hydrostatic testing. As stated before, the employer may contract for hydrostatic testing. However, if the employer wishes to provide the testing service, certain equipment and facilities must be available. Employees should be made aware of the hazards associated with hydrostatic testing and the importance of using proper guards and water pressures. Severe injury can result if extinguisher shells fail violently under hydrostatic pressure.

Employers are encouraged to use contractors who can perform adequate and reliable service. Firms which have been certified by the Materials Transportation Board (MTB) of the United States Department of Transportation (DOT), or state licensed extinguisher servicing firms, or recognized by the National Association of Fire Equipment Distributors in Chicago, Illinois, are generally acceptable for performing this service.

(8) Training and education. This part of the standard is of the utmost importance to employers and employees if the risk of injury or death due to extinguisher use is to be reduced. If an employer is going to permit an employee to fight a workplace fire of any size, the employer must make sure that the employee knows everything necessary to assure the employee's safety.

Training and education can be obtained through many channels. Often, local fire departments in larger cities have fire prevention bureaus or similar organizations which can provide basic fire prevention training programs. Fire insurance companies will have data and information available. The National Fire Protection Association and the National Safety Council will provide, at a small cost, publications that can be used in a fire prevention program.

Actual fire fighting training can be obtained from various sources in the country. The Texas A and M University, the University of Maryland's Fire and Rescue Institute, West Virginia University's Fire Service Extension, Iowa State University's Fire Service Extension and other state training schools and land grant colleges have fire fighting programs directed to industrial applications. Some manufacturers of extinguishers, such as the Ansul Company and Safety First, conduct fire schools for customers in the proper use of extinguishers. Several large corporations have taken time to develop their own on-site training programs which expose employees to the actual "feeling" of fire fighting. Simulated fires for training of employees in the proper use of extinguishers are also an acceptable part of a training program.

In meeting the requirements of this section, the employer may also provide educational materials, without classroom instruction, through the use of employee notice campaigns using instruction sheets or flyers or similar types of informal programs. The employer must make sure that employees are trained and educated to recognize not only what type of fire is being fought and how to fight it, but also when it is time to get away from it and leave fire suppression to more experienced fire fighters.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-59215, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59215, filed 12/24/81.]

WAC 296-24-602 Standpipe and hose systems. This section establishes design and installation criteria for standpipe systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-602, filed 12/24/81.]

WAC 296-24-60201 Scope and application. (1) Scope. This section applies to all small hose, Class II and Class III standpipe systems installed to meet the requirements of a particular WISHA standard.

(2) Exception. This section does not apply to Class I standpipe systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60201, filed 12/24/81.]

WAC 296-24-60203 Protection of standpipes. The employer shall assure that standpipes are located or otherwise protected against mechanical damage. Damaged standpipes shall be repaired promptly.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60203, filed 12/24/81.]

WAC 296-24-60205 Equipment. (1) Reels and cabinets. Where reels or cabinets are provided to contain fire hose, the employer shall assure that they are designed to facilitate prompt use of the hose valves, the hose, and other equipment at the time of a fire or other emergency. The employer shall assure that the reels and cabinets are conspicuously identified and used only for fire equipment.

(2) Hose outlets and connections.

(a) The employer shall assure that hose outlets and connections are located high enough above the floor to avoid being obstructed and to be accessible to employees.

(b) The employer shall standardize screw threads or provide appropriate adapters throughout the system and assure that the hose connections are compatible with those used on the supporting fire equipment.

(3) Hose.

(a) The employer shall assure that every one and one-half inch (3.8 cm) or smaller hose outlet used to meet this standard is equipped with hose connected and ready for use. In extremely cold climates where such installation may result in damaged equipment, the hose may be stored in another location provided it is readily available and can be connected when needed.

(b) Standpipe systems installed after July 1, 1982, for use by employees, shall be equipped with lined hose. Unlined hose may remain in use on existing systems. However, after the effective date of this standard, unlined hose which becomes unserviceable shall be replaced with lined hose.

(c) Beginning July 1, 1982, the employer shall provide hose of such length that friction loss resulting from water flowing through the hose will not decrease the pressure at the nozzle below 30 psi (210 kPa). The dynamic pressure

at the nozzle shall be within the range of 30 psi (210 kPa) to 125 psi (860 kPa).

(4) Nozzles. Beginning July 1, 1982, the employer shall assure that standpipe hose is equipped with shut-off type nozzles.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60205, filed 12/24/81.]

WAC 296-24-60207 Water supply. The minimum water supply for standpipe and hose systems, which are provided for the use of employees, shall be sufficient to provide 100 gallons per minute (6.3 l/s) for a period of at least thirty minutes.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60207, filed 12/24/81.]

WAC 296-24-60209 Tests and maintenance. (1) Acceptance tests.

(a) The employer shall assure that the piping of Class II and Class III systems installed after July 1, 1982, including yard piping, is hydrostatically tested for a period of at least two hours at not less than 200 psi (1,380 kPa), or at least 50 psi (340 kPa) in excess of normal pressure when such pressure is greater than 150 psi (1,030 kPa).

(b) The employer shall assure that hose on all standpipe systems installed after July 1, 1982, is hydrostatically tested with couplings in place, at a pressure of not less than 200 psi (1,380 kPa), before it is placed in service. This pressure shall be maintained for at least fifteen seconds and not more than one minute during which time the hose shall not leak nor shall any jacket thread break during the test.

(2) Maintenance.

(a) The employer shall assure that water supply tanks are kept filled to the proper level except during repairs. When pressure tanks are used, the employer shall assure that proper pressure is maintained at all times except during repairs.

(b) The employer shall assure that valves in the main piping connections to the automatic sources of water supply are kept fully open at all times except during repair.

(c) The employer shall assure that hose systems are inspected at least annually and after each use to assure that all of the equipment and hose are in place, available for use, and in serviceable condition.

(d) When the system or any portion thereof is found not to be serviceable, the employer shall remove it from service immediately and replace it with equivalent protection such as extinguishers and fire watches.

(e) The employer shall assure that hemp or linen hose on existing systems is unracked, physically inspected for deterioration, and reracked using a different fold pattern at least annually. The employer shall assure that defective hose is replaced in accordance with WAC 296-24-60205 (3)(b).

(f) The employer shall designate trained persons to conduct all inspections required under this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60209, filed 12/24/81.]

WAC 296-24-60299 Appendix A—Standpipe and hose systems. (1) Scope and application. This section has been written to provide adequate coverage of those standpipe and hose systems that an employer may install in the workplace to meet the requirements of a particular WISHA standard. For example, WISHA permits the substitution of hose systems for portable fire extinguishers in WAC 296-24-592. If an employer chooses to provide hose systems instead of portable Class A fire extinguishers, then those hose systems used for substitution would have to meet the applicable requirements of WAC 296-24-592. All other standpipe and hose systems not used as a substitute would be exempt from these requirements.

The section specifically exempts Class I large hose systems. By large hose systems, WISHA means those two and one-half inch hose lines that are usually associated with fire departments of the size that provide their own water supply through fire apparatus. When the fire gets to the size that outside protection of that degree is necessary, WISHA believes that in most industries employees will have been evacuated from the fire area and the "professional" fire fighters will take control.

(2) Protection of standpipes. Employers must make sure that standpipes are protected so that they can be relied upon during a fire emergency. This means protecting the pipes from mechanical and physical damage. There are various means for protecting the equipment such as, but not limited to, enclosing the supply piping in the construction of the building, locating the standpipe in an area which is inaccessible to vehicles, or locating the standpipe in a stairwell.

(3) Hose covers and cabinets. The employer should keep fire protection hose equipment in cabinets or inside protective covers which will protect it from the weather elements, dirt or other damaging sources. The use of protective covers must be easily removed or opened to assure that hose and nozzle are accessible. When the employer places hose in a cabinet, the employer must make sure that the hose and nozzle are accessible to employees without subjecting them to injury. In order to make sure that the equipment is readily accessible, the employer must also make sure that the cabinets used to store equipment are kept free of obstructions and other equipment which may interfere with the fast distribution of the fire hose stored in the cabinet.

(4) Hose outlets and connections. The employer must assure that employees who use standpipe and hose systems can reach the hose rack and hose valve without the use of portable equipment such as ladders. Hose reels are encouraged for use because one employee can retrieve the hose, charge it, and place it into service without much difficulty.

(5) Hose. When the employer elects to provide small hose in lieu of portable fire extinguishers, those hose stations being used for the substitution must have hose attached and ready for service. However, if more than the necessary amount of small hose outlets are provided, hose does not have to be attached to those outlets that would provide redundant coverage. Further, where the installation of hose on outlets may expose the hose to extremely cold climates, the employer may store the hose in houses or similar protective areas and connect it to the outlet when needed.

There is approved lined hose available that can be used to replace unlined hose which is stored on racks in cabinets. The lined hose is constructed so that it can be folded and placed in cabinets in the same manner as unlined hose.

Hose is considered to be unserviceable when it deteriorates to the extent that it can no longer carry water at the required pressure and flow rates. Dry rotted linen or hemp hose, cross threaded couplings, and punctured hose are examples of unserviceable hose.

(6) Nozzles. Variable stream nozzles can provide useful variations in water flow and spray patterns during fire fighting operations and they are recommended for employee use. It is recommended that 100 psi nozzle pressure be used to provide good flow patterns for variable stream nozzles. The most desirable attribute for nozzles is the ability of the nozzle person to shut off the water flow at the nozzle when it is necessary. This can be accomplished in many ways. For example, a shut-off nozzle with a lever or rotation of the nozzle to stop flow would be effective, but in other cases a simple globe valve placed between a straight stream nozzle and the hose could serve the same purpose. For straight stream nozzles, 50 psi nozzle pressure is recommended. The intent of the standard is to protect the employee from "runaway" hoses if it becomes necessary to drop a pressurized hose line and retreat from the fire front and other related hazards.

(7) Design and installation. Standpipe and hose systems designed and installed in accordance with NFPA Standard No. 14-1976, "Standpipe and Hose Systems," are considered to be in compliance with this standard.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60299, filed 12/24/81.]

WAC 296-24-607 Automatic sprinkler systems. The design and installation criteria for automatic sprinkler systems is contained in this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-607, filed 12/24/81.]

WAC 296-24-60701 Scope and application. (1) The requirements of this section apply to all automatic sprinkler systems installed to meet a particular WISHA standard.

(2) For automatic sprinkler systems used to meet WISHA requirements and installed prior to the effective date of this standard, compliance with the National Fire Protection Association (NFPA) or the National Board of Fire Underwriters (NBFU) standard in effect at the time of the system's installation will be acceptable as compliance with this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60701, filed 12/24/81.]

WAC 296-24-60703 Exemptions. Automatic sprinkler systems installed in workplaces, but not required by WISHA are exempt from the requirements of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60703, filed 12/24/81.]

WAC 296-24-60705 General requirements. (1) Design.

(a) All automatic sprinkler designs used to comply with this standard shall provide the necessary discharge patterns, densities, and water flow characteristics for complete coverage in a particular workplace or zoned subdivision of the workplace.

(b) The employer shall assure that only approved equipment and devices are used in the design and installation of automatic sprinkler systems used to comply with this standard.

(2) Maintenance. The employer shall properly maintain an automatic sprinkler system installed to comply with this section. The employer shall assure that a main drain flow test is performed on each system annually. The inspector's test valve shall be opened at least every two years to assure that the sprinkler system operates properly.

(3) Acceptance tests. The employer shall conduct proper acceptance tests on sprinkler systems installed for employee protection after July 1, 1982, and record the dates of such tests. Proper acceptance tests include the following:

(a) Flushing of underground connections;

(b) Hydrostatic tests of piping in system;

(c) Air tests in dry-pipe systems;

(d) Dry-pipe valve operation; and

(e) Test of drainage facilities.

(4) Water supplies. The employer shall assure that every automatic sprinkler system is provided with at least one automatic water supply capable of providing design water flow for at least thirty minutes. An auxiliary water supply or equivalent protection shall be provided when the automatic water supply is out of service, except for systems of twenty or fewer sprinklers.

(5) Hose connections for fire fighting use. The employer may attach hose connections for fire fighting use to wet pipe sprinkler systems provided that the water supply satisfies the combined design demand for sprinklers and standpipes.

(6) Protection of piping. The employer shall assure that automatic sprinkler system piping is protected against freezing and exterior surface corrosions.

(7) Drainage. The employer shall assure that all dry sprinkler pipes and fittings are installed so that the systems may be totally drained.

(8) Sprinklers.

(a) The employer shall assure that only approved sprinklers are used on systems.

(b) The employer may not use older style sprinklers to replace standard sprinklers without a complete engineering review of the altered part of the system.

(c) The employer shall assure that sprinklers are protected from mechanical damage.

(9) Sprinkler alarms. On all sprinkler systems having more than twenty sprinklers, the employer shall assure that a local water-flow alarm is provided which sounds an audible signal on the premises upon water flow through the system equal to the flow from a single sprinkler.

(10) Sprinkler spacing. The employer shall assure that sprinklers are spaced to provide a maximum protection area per sprinkler, a minimum of interference to the discharge pattern by building or structural members or building contents and suitable sensitivity to possible fire hazards. The minimum vertical clearance between sprinklers and material below shall be eighteen inches.

(11) Hydraulically designed systems. The employer shall assure that hydraulically designed automatic sprinkler systems or portions thereof are identified and that the

location, number of sprinklers in the hydraulically designed section, and the basis of the design is indicated. Central records may be used in lieu of signs at sprinkler valves provided the records are available for inspection and copying by the director.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60705, filed 12/24/81.]

WAC 296-24-60799 Appendix A—Automatic sprinkler systems. (1) Scope and application. This section contains the minimum requirements for design, installation and maintenance of sprinkler systems that are needed for employee safety. The occupational safety and health administration is aware of the fact that the National Board of Fire Underwriters is no longer an active organization, however, sprinkler systems still exist that were designed and installed in accordance with that organization's standards. Therefore, WISHA will recognize sprinkler systems designed to, and maintained in accordance with, NBFU and earlier NFPA standards.

(2) Exemptions. In an effort to assure that employers will continue to use automatic sprinkler systems as the primary fire protection system in workplaces, WISHA is exempting from coverage those systems not required by a particular WISHA standard and which have been installed in workplaces solely for the purpose of protecting property. Many of these types of systems are installed in areas or buildings with little or no employee exposure. An example is those warehouses where employees may enter occasionally to take inventory or move stock. Some employers may choose to shut down those systems which are not specifically required by WISHA rather than upgrade them to comply with the standards. WISHA does not intend to regulate such systems. WISHA only intends to regulate those systems which are installed to comply with a particular WISHA standard.

(3) Design. There are two basic types of sprinkler system design. Pipe schedule designed systems are based on pipe schedule tables developed to protect hazards with standard sized pipe, number of sprinklers, and pipe lengths. Hydraulic designed systems are based on an engineered design of pipe size which will produce a given water density or flow rate at any particular point in the system. Either design can be used to comply with this standard.

The National Fire Protection Association's Standard No. 13, "Automatic Sprinkler Systems," contains the tables needed to design and install either type of system. Minimum water supplies, densities, and pipe sizes are given for all types of occupancies.

The employer may check with a reputable fire protection engineering consultant or sprinkler design company when evaluating existing systems or designing a new installation.

With the advent of new construction materials for the manufacture of sprinkler pipe, materials, other than steel, have been approved for use as sprinkler pipe. Selection of pipe material should be made on the basis of the type of installation and the acceptability of the material to local fire and building officials where such systems may serve more than one purpose.

Before new sprinkler systems are placed into service, an acceptance test is to be conducted. The employer should invite the installer, designer, insurance representative, and a local fire official to witness the test. Problems found during the test are to be corrected before the system is placed into service.

(4) Maintenance. It is important that any sprinkler system maintenance be done only when there is minimal employee exposure to the fire hazard. For example, if repairs or changes to the system are to be made, they should be made during those hours when employees are not working or are not occupying that portion of the workplace protected by the portion of the system which has been shut down.

The procedures for performing a flow test via a main drain test or by the use of an inspector's test valve can be obtained from the employer's fire insurance company or from the National Fire Protection Association's Standard No. 13A, "Sprinkler System, Maintenance."

(5) Water supplies. The water supply to a sprinkler system is one of the most important factors an employer should consider when evaluating a system. Obviously, if there is no water supply, the system is useless. Water supplies can be lost for various reasons such as improperly closed valves, excessive demand, broken water mains, and broken fire pumps. The employer must be able to determine if or when this type of condition exists either by performing a main drain test or visual inspection. Another problem may be an inadequate water supply. For example, a light hazard occupancy may, through rehabilitation or change in tenants, become an ordinary or high hazard occupancy. In such cases, the exiting water supply may not be able to provide the pressure or duration necessary for proper protection. Employers must assure that proper design and tests have been made to assure an adequate water supply. These tests can be arranged through the employer's fire insurance carrier or through a local sprinkler maintenance company or through the local fire prevention organization.

Any time the employer must shut down the primary water supply for a sprinkler system, the standard requires that equivalent protection be provided. Equivalent protection may include a fire watch with extinguishers or hose lines in place and manned, or a secondary water supply such as a tank truck and pump, or a tank or fire pond with fire pumps, to protect the areas where the primary water supply is limited or shut down. The employer may also require evacuation of the workplace and have an emergency action plan which specifies such action.

(6) Protection of piping. Piping which is exposed to corrosive atmospheres, either chemical or natural, can become defective to the extent that it is useless. Employers must assure that piping is protected from corrosion by its material of construction, e.g., stainless steel, or by a protective coating, e.g., paint.

(7) Sprinklers. When an employer finds it necessary to replace sprinkler system components or otherwise change a sprinkler's design, employer should make a complete fire protection engineering survey of that part of the system being changed. This review should assure that the changes to the system will not alter the effectiveness of the system as it is presently designed. Water supplies, densities and flow characteristics should be maintained.

(8) Protection of sprinklers. All components of the system must be protected from mechanical impact damage. This can be achieved with the use of mechanical guards or screens or by locating components in areas where physical contact is impossible or limited.

(9) Sprinkler alarms. The most recognized sprinkler alarm is the water-motor gong or bell that sounds when water begins to flow through the system. This is not however, the only type of acceptable water flow alarm. Any alarm that gives an indication that water is flowing through the system is acceptable. For example, a siren, a whistle, a flashing light, or similar alerting device which can transmit a signal to the necessary persons would be acceptable. The purpose of the alarm is to alert persons that the system is operating, and that some type of planned action is necessary.

(10) Sprinkler spacing. For a sprinkler system to be effective there must be an adequate discharge of water spray from the sprinkler head. Any obstructions which hinder the designed density or spray pattern of the water may create unprotected areas which can cause fire to spread. There are some sprinklers that, because of the system's design, are deflected to specific areas. This type of obstruction is acceptable if the system's design takes it into consideration in providing adequate coverage.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60799, filed 12/24/81.]

WAC 296-24-617 Fixed extinguishing systems, general. This section applies to criteria required for fixed extinguisher systems and all sections of this chapter having number WAC 296-24-617 in the section number shall apply.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-617, filed 12/24/81.]

WAC 296-24-61701 Scope and application. (1) This section applies to all fixed extinguishing systems installed to meet a particular WISHA standard except for automatic sprinkler systems which are covered by WAC 296-24-607.

(2) This section also applies to fixed systems not installed to meet a particular WISHA standard, but which, by means of their operation, may expose employees to possible injury, death, or adverse health consequences caused by the extinguishing agent. Such systems are only subject to the requirements of WAC 296-24-61703 (4) through (7) and 296-24-61705.

(3) Systems otherwise covered in subsection (2) of this section which are installed in areas with no employee exposure are exempted from the requirements of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61701, filed 12/24/81.]

WAC 296-24-61703 General requirements. (1) Fixed extinguishing system components and agents shall be designed and approved for use on the specific fire hazards they are expected to control or extinguish.

(2) If for any reason a fixed extinguishing system becomes inoperable, the employer shall notify employees and take the necessary temporary precautions to assure their safety until the system is restored to operating order. Any defects or impairments shall be properly corrected by trained personnel.

(3) The employer shall provide a distinctive alarm or signaling system which complies with WAC 296-24-631, and is capable of being perceived above ambient noise or light levels, on all extinguishing systems in those portions of the workplace covered by the extinguishing system to indicate when the extinguishing system is discharging. Discharge alarms are not required on systems where discharge is immediately recognizable.

(4) The employer shall provide effective safeguards to warn employees against entry into discharge areas where the atmosphere remains hazardous to employee safety or health.

(5) The employer shall post hazard warning or caution signs at the entrance to, and inside of, areas protected by fixed extinguishing systems which use agents in concentrations known to be hazardous to employee safety and health.

(6) The employer shall assure that fixed systems are inspected annually by a person knowledgeable in the design and function of the system to assure that the system is maintained in good operating condition.

(7) The employer shall assure that the weight and pressure of refillable containers is checked at least semiannually. If the container shows a loss in net content or weight of more than five percent, or a loss in pressure of more than ten percent, it shall be subjected to maintenance.

(8) The employer shall assure that factory charged nonrefillable containers which have no means of pressure indication are weighed at least semiannually. If a container shows a loss in net weight of more than five percent it shall be replaced.

(9) The employer shall assure that inspection and maintenance dates are recorded on the container, on a tag attached to the container, or in a central location. A record of the last semiannual check shall be maintained until the container is checked again or for the life of the container, whichever is less.

(10) The employer shall train employees designated to inspect, maintain, operate, or repair fixed extinguishing systems and annually review their training to keep them up-to-date in the functions they are to perform.

(11) The employer shall not use chlorobromomethane or carbon tetrachloride as an extinguishing agent where employees may be exposed.

(12) The employer shall assure that systems installed in the presence of corrosive atmospheres are constructed of noncorrosive material or otherwise protected against corrosion.

(13) Automatic detection equipment shall be approved, installed and maintained in accordance with WAC 296-24-629.

(14) The employer shall assure that all systems designed for and installed in areas with climatic extremes shall operate effectively at the expected extreme temperatures.

(15) The employer shall assure that at least one manual station is provided for discharge activation of each fixed extinguishing system.

(16) The employer shall assure that manual operating devices are identified as to the hazard against which they will provide protection.

(17) The employer shall provide and assure the use of the personal protective equipment needed for immediate rescue of employees trapped in hazardous atmospheres created by an agent discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61703, filed 12/24/81.]

WAC 296-24-61705 Total flooding systems with potential health and safety hazards to employees. (1) The employer shall provide an emergency action plan in accordance with WAC 296-24-567 for each area within a workplace that is protected by a total flooding system which provides agent concentrations exceeding the maximum safe levels.

(2) Systems installed in areas where employees cannot enter during or after the system's operation are exempt from the requirements of this section.

(3) On all total flooding systems the employer shall provide a predischarge employee alarm which complies with WAC 296-24-631, and is capable of being perceived above ambient light or noise levels before the system discharges, which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall provide automatic actuation of total flooding systems by means of an approved fire detection device installed and interconnected with a predischarge employee alarm system to give employees time to safely exit from the discharge area prior to system discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61705, filed 12/24/81.]

WAC 296-24-61799 Appendix A—Fixed extinguishing systems, general. (1) Scope and application. This section contains the general requirements that are applicable to all fixed extinguishing systems installed to meet WISHA standards. It also applies to those fixed extinguishing systems, generally total flooding, which are not required by WISHA, but which, because of the agent's discharge, may expose employees to hazardous concentrations of extinguishing agents or combustion byproducts. Employees who work around fixed extinguishing systems must be warned of the possible hazards associated with the system and its agent. For example, fixed dry chemical extinguishing systems may generate a large enough cloud of dry chemical particles that employees may become visually disoriented. Certain gaseous agents can expose employees to hazardous byproducts of combustion when the agent comes into contact with hot metal or other hot surface. Some gaseous agents may be present in hazardous concentrations when the system has totally discharged because an extra rich concentration is necessary to extinguish deep-seated fires. Certain local application systems may be designed to discharge onto the flaming surface of a liquid, and it is possible that the liquid can splatter when hit with the discharging agent. All of these hazards must be determined before the system is placed into operation, and must be discussed with employees.

Based on the known toxicological effects of agents such as carbon tetrachloride and chlorobromomethane, WISHA is not permitting the use of these agents in areas where employees can be exposed to the agent or its side effects. However, chlorobromomethane has been accepted and may be used as an explosion suppression agent in unoccupied spaces. WISHA is permitting the use of this agent only in areas where employees will not be exposed.

(2) Distinctive alarm signals. A distinctive alarm signal is required to indicate that a fixed system is discharging. Such a signal is necessary on those systems where it is not immediately apparent that the system is discharging. For example, certain gaseous agents make a loud noise when they discharge. In this case, no alarm signal is necessary. However, where systems are located in remote locations or away from the general work area and where it is possible that a system could discharge without anyone knowing that it is doing so, then a distinctive alarm is necessary to warn employees of the hazards that may exist. The alarm can be a bell, gong, whistle, horn, flashing light, or any combination of signals as long as it is identifiable as a discharge alarm.

(3) Maintenance. The employer is responsible for the maintenance of all fixed systems, but this responsibility does not preclude the use of outside contractors to do such work. New systems should be subjected to an acceptance test before placed in service. The employer should invite the installer, designer, insurance representative and others to witness the test. Problems found during the test need to be corrected before the system is considered operational.

(4) Manual discharge stations. There are instances, such as for mechanical reasons and others, where the standards call for a manual backup activation device. While the location of this device is not specified in the standard, the employer should assume that the device should be located where employees can easily reach it. It could, for example, be located along the main means of egress from the protected area so that employees could activate the system as they evacuate the work area.

(5) Personal protective equipment. The employer is required to provide the necessary personal protective equipment to rescue employees who may be trapped in a totally flooded environment which may be hazardous to their health. The equipment would normally include a positive-pressure self-contained breathing apparatus and any necessary first aid equipment. In cases where the employer can assure the prompt arrival of the local fire department or plant emergency personnel which can provide the equipment, this can be considered as complying with the standards.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61799, filed 12/24/81.]

WAC 296-24-622 Fixed extinguishing systems, dry chemical. The design and installation requirements specifically applicable to fixed extinguishing systems, using dry chemical as the extinguishing agent, are contained in this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-622, filed 12/24/81.]

WAC 296-24-62201 Scope and application. This section applies to all fixed extinguishing systems using dry chemical as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62201, filed 12/24/81.]

WAC 296-24-62203 Specific requirements. (1) The employer shall assure that dry chemical agents are compati-

ble with any foams or wetting agents with which they are used.

(2) The employer may not mix together dry chemical extinguishing agents of different compositions. The employer shall assure that dry chemical systems are refilled with the chemical stated on the approval nameplate or an equivalent compatible material.

(3) When dry chemical discharge may obscure vision, the employer shall provide a predischarge employee alarm which complies with WAC 296-24-631, and which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall sample the dry chemical supply of all but stored pressure systems at least annually to assure that the dry chemical supply is free of moisture which may cause the supply to cake or form lumps.

(5) The employer shall assure that the rate of application of dry chemicals is such that the designed concentration of the system will be reached within thirty seconds of initial discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62203, filed 12/24/81.]

WAC 296-24-62299 Appendix A—Fixed extinguishing systems, dry chemical. (1) Scope and application. The requirements of this section apply only to dry chemical systems. These requirements are to be used in conjunction with the requirements of WAC 296-24-617.

(2) Maintenance. The employer is responsible for assuring that dry chemical systems will operate effectively. To do this, periodic maintenance is necessary. One test that must be conducted during the maintenance check is one which will determine if the agent has remained free of moisture. If an agent absorbs any moisture, it may tend to cake and thereby clog the system. An easy test for acceptable moisture content is to take a lump of dry chemical from the container and drop it from a height of four inches. If the lump crumbles into fine particles, the agent is acceptable.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62299, filed 12/24/81.]

WAC 296-24-623 Fixed extinguishing systems, gaseous agent. This section contains the design and installation requirements for fixed extinguishing systems using gaseous agents.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-623, filed 12/24/81.]

WAC 296-24-62301 Scope and application. (1) Scope. This section applies to all fixed extinguishing systems, using a gas as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. In some cases, the gas may be in a liquid state during storage.

(2) Application. The requirements of WAC 296-24-61703 (2) and (4) through (7) shall apply only to total flooding systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62301, filed 12/24/81.]

WAC 296-24-62303 Specific requirements. (1) Agents used for initial supply and replenishment shall be of the type approved for the system's application. Carbon dioxide obtained by dry ice conversion to liquid is not acceptable unless it is processed to remove excess water and oil.

(2) Except during overhaul, the employer shall assure that the designed concentration of gaseous agents is maintained until the fire has been extinguished or is under control.

(3) The employer shall assure that employees are not exposed to toxic levels of gaseous agent or its decomposition products.

(4) The employer shall assure that the designed extinguishing concentration is reached within thirty seconds of initial discharge except for Halon systems which must achieve design concentration within ten seconds.

(5) The employer shall provide a distinctive predischarge employee alarm capable of being perceived above ambient light or noise levels when agent design concentrations exceed the maximum safe level for employee exposure. A predischarge employee alarm for alerting employees before system discharge shall be provided on Halon 1211 and carbon dioxide systems with a design concentration of four percent or greater, and for Halon 1301 systems with a design concentration of ten percent or greater. The predischarge employee alarm shall provide employees time to safely exit the discharge area prior to system discharge.

(6)(a) Where egress from an area cannot be accomplished within one minute, the employer shall not use Halon 1301 in concentrations greater than seven percent.

(b) Where egress takes greater than thirty seconds but less than one minute, the employer shall not use Halon 1301 in a concentration greater than ten percent.

(c) Halon 1301 concentrations greater than ten percent are only permitted in areas not normally occupied by employees provided that any employee in the area can escape within thirty seconds. The employer shall assure that no unprotected employees enter the area during agent discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62303, filed 12/24/81.]

WAC 296-24-62399 Appendix A—Fixed extinguishing systems, gaseous agent. (1) Scope and application. This section applies only to those systems which use gaseous agents. The requirements of WAC 296-24-617 also apply to the gaseous agent systems covered in this section.

(2) Design concentrations. Total flooding gaseous systems are based on the volume of gas which must be discharged in order to produce a certain designed concentration of gas in an enclosed area. The concentration needed to extinguish a fire depends on several factors including the type of fire hazard and the amount of gas expected to leak away from the area during discharge. At times it is necessary to "super-saturate" a work area to provide for expected leakage from the enclosed area. In such cases, employers must assure that the flooded area has been ventilated before employees are permitted to reenter the work area without protective clothing and respirators.

(3) Toxic decomposition. Certain halogenated hydrocarbons will break down or decompose when they are combined with high temperatures found in the fire environment. The products of the decomposition can include toxic elements or compounds. For example, when Halon 1211 is placed into contact with hot metal it will break down and form bromide or fluoride fumes. The employer must find out which toxic products may result from decomposition of a particular agent from the manufacturer, and take the necessary precautions to prevent employee exposure to the hazard.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62399, filed 12/24/81.]

WAC 296-24-627 Fixed extinguishing systems, water spray and foam. This section contains the design and installation requirements for extinguishing systems using water or foam solution as the extinguishing agent.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-627, filed 12/24/81.]

WAC 296-24-62701 Scope and application. This section applies to all fixed extinguishing systems, using water or foam solution as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. This section does not apply to automatic sprinkler systems which are covered under WAC 296-24-607.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62701, filed 12/24/81.]

WAC 296-24-62703 Specific requirements. (1) The employer shall assure that foam and water spray systems are designed to be effective in at least controlling fire in the protected area or on protected equipment.

(2) The employer shall assure that drainage of water spray systems is directed away from areas where employees are working and that no emergency egress is permitted through the drainage path.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62703, filed 12/24/81.]

WAC 296-24-62799 Appendix A—Fixed extinguishing systems, water spray and foam. (1) Scope and application. This section applies to those systems that use water spray or foam. The requirements of WAC 296-24-617 also apply to this type of system.

(2) Characteristics of foams. When selecting the type of foam for a specific hazard, the employer should consider the following limitations of some foams.

(a) Some foams are not acceptable for use on fires involving flammable gases and liquefied gases with boiling points below ambient workplace temperatures. Other foams are not effective when used on fires involving polar solvent liquids.

(b) Any agent using water as part of the mixture should not be used on fire involving combustible metals unless it is applied under proper conditions to reduce the temperature of burning metal below the ignition temperature. The employer should use only those foams that have been tested and accepted for this application by a recognized independent testing laboratory.

(c) Certain types of foams may be incompatible and break down when they are mixed together.

(d) For fires involving water miscible solvents, employers should use only those foams tested and approved for such use. Regular protein foams may not be effective on such solvents.

Whenever employers provide a foam or water spray system, drainage facilities must be provided to carry contaminated water or foam overflow away from the employee work area and egress routes. This drainage system should drain to a central impounding area where it can be collected and disposed of properly. Other government agencies may have regulations concerning environmental considerations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62799, filed 12/24/81.]

WAC 296-24-629 Fire detection systems. The requirements for installation, restoration, maintenance, testing and protection of fire detection systems and the criteria for response time can be found in this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-629, filed 12/24/81.]

WAC 296-24-62901 Scope and application. This section applies to all automatic fire detection systems installed to meet the requirements of a particular WISHA standard.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62901, filed 12/24/81.]

WAC 296-24-62903 Installation and restoration. (1) The employer shall assure that all devices and equipment constructed and installed to comply with this standard are approved for the purpose for which they are intended.

(2) The employer shall restore all fire detection systems and components to normal operating condition as promptly as possible after each test or alarm. Spare detection devices and components which are normally destroyed in the process of detecting fires shall be available on the premises or from a local supplier in sufficient quantities and locations for prompt restoration of the system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62903, filed 12/24/81.]

WAC 296-24-62905 Maintenance and testing. (1) The employer shall maintain all systems in an operable condition except during repairs or maintenance.

(2) The employer shall assure that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.

(3) The employer shall assure that pneumatic and hydraulic operated detection systems installed after July 1, 1982, are equipped with supervised systems.

(4) The employer shall assure that the servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments are performed

by a trained person knowledgeable in the operations and functions of the system.

(5) The employer shall also assure that fire detectors that need to be cleaned of dirt, dust, or other particulates in order to be fully operational are cleaned at regular periodic intervals.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62905, filed 12/24/81.]

WAC 296-24-62907 Protection of fire detectors. (1) The employer shall assure that fire detection equipment installed outdoors or in the presence of corrosive atmospheres be protected from corrosion. The employer shall provide a canopy, hood, or other suitable protection for detection equipment requiring protection from the weather.

(2) The employer shall locate or otherwise protect detection equipment so that it is protected from mechanical or physical impact which might render it inoperable.

(3) The employer shall assure that detectors are supported independently of their attachment to wires or tubing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62907, filed 12/24/81.]

WAC 296-24-62909 Response time. (1) The employer shall assure that fire detection systems installed for the purpose of actuating fire extinguishment or suppression systems shall be designed to operate in time to control or extinguish a fire.

(2) The employer shall assure that fire detection systems installed for the purpose of employee alarm and evacuation be designed and installed to provide a warning for emergency action and safe escape of employees.

(3) The employer shall not delay alarms or devices initiated by fire detector actuation for more than thirty seconds unless such delay is necessary for the immediate safety of employees. When such delay is necessary, it shall be addressed in an emergency action plan meeting the requirements of WAC 296-24-567.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62909, filed 12/24/81.]

WAC 296-24-62911 Number, location and spacing of detecting devices. The employer shall assure that the number, spacing and location of fire detectors is based upon design data obtained from field experience, or tests, engineering surveys, the manufacturer's recommendations, or a recognized testing laboratory listing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62911, filed 12/24/81.]

WAC 296-24-62999 Appendix A—Fire detection systems. (1) Installation and restoration. Fire detection systems must be designed by knowledgeable engineers or other professionals, with expertise in fire detection systems and when the systems are installed, there should be an acceptance test performed on the system to insure it operates properly. The manufacturer's recommendations for system design should be consulted. While entire systems may not be approved, each component used in the system is required to be approved. Custom fire detection systems should be designed by knowledgeable fire protection or electrical engineers who are familiar with the workplace hazards and conditions. Some systems may only have one or two individual detectors for a small workplace, but good design and installation is still important. An acceptance test should be performed on all systems, including these smaller systems.

WISHA has a requirement that spare components used to replace those which may be destroyed during an alarm situation be available in sufficient quantities and locations for prompt restoration of the system. This does not mean that the parts or components have to be stored at the workplace. If the employer can assure that the supply of parts is available in the local community or the general metropolitan area of the workplace, then the requirements for storage and availability have been met. The intent is to make sure that the alarm system is fully operational when employees are occupying the workplace, and that when the system operates it can be returned to full service the next day or sooner.

(2) Supervision. Fire detection systems should be supervised. The object of supervision is detection of any failure of the circuitry, and the employer should use any method that will assure that the system's circuits are operational. Electrically operated sensors for air pressure, fluid pressure, or electrical circuits, can provide effective monitoring and are the typical types of supervision.

(3) Protection of fire detectors. Fire detectors must be protected from corrosion either by protective coating, by being manufactured from noncorrosive materials or by location. Detectors must also be protected from mechanical impact damage, either by suitable cages or metal guards where such hazards are present, or by locating them above or out of contact with materials or equipment which may cause damage.

(4) Number, location, and spacing of detectors. This information can be obtained from the approval listing for detectors or NFPA standards. It can also be obtained from fire protection engineers or consultants or manufacturers of equipment who have access to approval listing and design methods.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62999, filed 12/24/81.]

WAC 296-24-631 Employee alarm systems. This section contains requirements for the design, installation, restoration and manual actuation of all types of emergency employee alarm systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-631, filed 12/24/81.]

WAC 296-24-63101 Scope and application. (1) This section applies to all emergency employee alarms installed to meet a particular WISHA standard. This section does not apply to those discharge or supervisory alarms required on various fixed extinguishing systems or to supervisory alarms on fire suppression, alarm or detection systems unless they are intended to be employee alarm systems.

(2) The requirements in this section that pertain to maintenance, testing and inspection shall apply to all local

fire alarm signaling systems used for alerting employees regardless of the other functions of the system.

(3) All predischarge employee alarms installed to meet a particular WISHA standard shall meet the requirements of WAC 296-24-63103 (1) through (4) and 296-24-63107(1).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63101, filed 12/24/81.]

WAC 296-24-63103 General requirements. (1) The employee alarm system shall provide warning for necessary emergency action as called for in the emergency action plan, or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.

(2) The employee alarm shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm.

(3) The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the emergency action plan.

(4) The employer shall explain to each employee the preferred means of reporting emergencies, such as manual pull box alarms, public address systems, radio or telephones. The employer shall post emergency telephone numbers near telephones, or employee notice boards, and other conspicuous locations when telephones serve as a means of reporting emergencies. Where a communication system also serves as the employee alarm system, all emergency messages shall have priority over all nonemergency messages.

(5) The employer shall establish procedures for sounding emergency alarms in the workplace. For those employers with ten or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Such workplaces need not have a back-up system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63103, filed 12/24/81.]

WAC 296-24-63105 Installation and restoration. (1) The employer shall assure that all devices, components, combinations of devices or systems constructed and installed to comply with this standard are approved. Steam whistles, air horns, strobe lights or similar lighting devices, or tactile devices meeting the requirements of this section are considered to meet this requirement for approval.

(2) The employer shall assure that all employee alarm systems are restored to normal operating condition as promptly as possible after each test or alarm. Spare alarm devices and components subject to wear or destruction shall be available in sufficient quantities and locations for prompt restoration of the system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63105, filed 12/24/81.]

WAC 296-24-63107 Maintenance and testing. (1) The employer shall assure that all employee alarm systems are maintained in operating condition except when undergoing repairs or maintenance.

(2) The employer shall assure that a test of the reliability and adequacy of nonsupervised employee alarm systems is made every two months. A different actuation device shall be used in each test of a multi-actuation device system so that no individual device is used for two consecutive tests.

(3) The employer shall maintain or replace power supplies as often as is necessary to assure a fully operational condition. Back-up means of alarm, such as employee runners or telephones, shall be provided when systems are out of service.

(4) The employer shall assure that employee alarm circuitry installed after July 1, 1982, which is capable of being supervised is supervised and that it will provide positive notification to assigned personnel whenever a deficiency exists in the system. The employer shall assure that all supervised employee alarm systems are tested at least annually for reliability and adequacy.

(5) The employer shall assure that the servicing, maintenance and testing of employee alarms are done by persons trained in the designed operation and functions necessary for reliable and safe operation of the system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63107, filed 12/24/81.]

WAC 296-24-63109 Manual operation. The employer shall assure that manually operated actuation devices for use in conjunction with employee alarms are unobstructed, conspicuous and readily accessible.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63109, filed 12/24/81.]

WAC 296-24-63199 Appendix A—Employee alarm systems. (1) Scope and application. This section is intended to apply to employee alarm systems used for all types of employee emergencies except those which occur so quickly and at such a rapid rate (e.g., explosions) that any action by the employee is extremely limited following detection.

In small workplaces with ten or less employees the alarm system can be by direct voice communication (shouting) where any one individual can quickly alert all other employees. Radio may be used to transmit alarms from remote workplaces where telephone service is not available, provided that radio messages will be monitored by emergency services, such as fire, police or others, to insure alarms are transmitted and received.

(2) Alarm signal alternatives. In recognition of physically impaired individuals, WISHA is accepting various methods of giving alarm signals. For example, visual, tactile or audible alarm signals are acceptable methods for giving alarms to employees. Flashing lights or vibrating devices can be used in areas where the employer has hired employees with hearing or vision impairments. Vibrating devices, air fans, or other tactile devices can be used where visually and hearing impaired employees work. Employers are cautioned that certain frequencies of flashing lights have been claimed to initiate epileptic seizures in some employees and that this fact should be considered when selecting an alarm device. Two-way radio communications would be most appropriate for transmitting emergency alarms in such workplaces which may be remote or where telephones may not be available.

(3) Reporting alarms. Employee alarms may require different means of reporting, depending on the workplace

involved. For example, in small workplaces, a simple shout throughout the workplace may be sufficient to warn employees of a fire or other emergency. In larger workplaces, more sophisticated equipment is necessary so that entire plants or high-rise buildings are not evacuated for one small emergency. In remote areas, such as pumping plants, radio communication with a central base station may be necessary. The goal of this standard is to assure that all employees who need to know that an emergency exists can be notified of the emergency. The method of transmitting the alarm should reflect the situation found at the workplace.

Personal radio transmitters, worn by an individual, can be used where the individual may be working, such as in a remote location. Such personal radio transmitters shall send a distinct signal and should clearly indicate who is having an emergency, the location, and the nature of the emergency. All radio transmitters need a feedback system to assure that the emergency alarm is sent to the people who can provide assistance.

For multistory buildings or single-story buildings with interior walls for subdivisions, the more traditional alarm systems are recommended for these types of workplaces. Supervised telephone or manual fire alarm or pull box stations with paging systems to transmit messages throughout the building is the recommended alarm system. The alarm box stations should be available within a travel distance of 200 feet. Water flow detection on a sprinkler system, fire detection systems (guard's supervisory station) or tour signal (watchman's service), or other related systems may be part of the overall system. The paging system may be used for nonemergency operations provided the emergency messages and uses will have precedence over all other uses of the system.

(4) Supervision. The requirements for supervising the employee alarm system circuitry and power supply may be accomplished in a variety of ways. Typically, electrically operated sensors for air pressure, fluid pressure, steam pressure, or electrical continuity of circuitry may be used to continuously monitor the system to assure it is operational and to identify trouble in the system and give a warning signal.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63199, filed 12/24/81.]

WAC 296-24-63299 Appendix B—National consensus standards. The following table contains a cross-reference listing of those current national consensus standards which contains information and guidelines that would be considered acceptable in complying with requirements in the specific sections.

Section	National Consensus Standard
WAC 296-24-58505	ANSI/NFPA No. 1972, Structural Fire Fighter's Helmets. ANSI Z88.5 American National Standard, Practice for Respirator Protection for the Fire Service. ANSI/NFPA No. 1971, Protective Clothing for Structural Fire Fighters. NFPA No. 1041, Fire Service Instructor Professional Qualifications.
WAC 296-24-592	ANSI/NFPA No. 10, Portable Fire Extinguishers.
WAC 296-24-602	ANSI/NFPA No. 18, Wetting Agents. ANSI/NFPA No. 20, Centrifugal Fire Pumps. NFPA No. 21, Steam Fire Pumps. ANSI/NFPA No. 22, Water Tanks. NFPA No. 24, Outside Protection. NFPA No. 26, Supervision of Valves. NFPA No. 13E, Fire Department Operations in Properties Protected by Sprinkler, Standpipe Systems. ANSI/NFPA No. 194, Fire Hose Connections. NFPA No. 197, Initial Fire Attack, Training for. NFPA No. 1231, Water Supplies for Suburban and Rural Fire Fighting.
WAC 296-24-607	ANSI/NFPA No. 13, Sprinkler Systems. NFPA No. 13A, Sprinkler Systems, Maintenance. ANSI/NFPA No. 18, Wetting Agents. ANSI/NFPA No. 20, Centrifugal Fire Pumps. ANSI/NFPA No. 22, Water Tanks. NFPA No. 24, Outside Protection. NFPA No. 26, Supervision of Valves. ANSI/NFPA No. 72B, Auxiliary Signaling Systems. NFPA No. 1231, Water Supplies for Suburban and Rural Fire Fighting.
WAC 296-24-617	ANSI/NFPA No. 11, Foam Systems. ANSI/NFPA No. 11A, High Expansion Foam Extinguishing Systems. ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems. ANSI/NFPA No. 12, Carbon Dioxide Systems. ANSI/NFPA No. 12A, Halon 1301 Systems. ANSI/NFPA No. 12B, Halon 1211 Systems. ANSI/NFPA No. 15, Water Spray Systems. ANSI/NFPA No. 16, Foam-Water Spray Systems. ANSI/NFPA No. 17, Dry Chemical Systems. ANSI/NFPA No. 69, Explosion Suppression Systems.
WAC 296-24-622	ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems. ANSI/NFPA No. 17, Dry Chemical Systems.
WAC 296-24-623	ANSI/NFPA No. 12, Carbon Dioxide Systems. ANSI/NFPA No. 12A, Halon 1211 Systems. ANSI/NFPA No. 12B, Halon 1301 Systems. ANSI/NFPA No. 69, Explosion Suppression Systems.
WAC 296-24-627	ANSI/NFPA No. 11, Foam Extinguishing Systems. ANSI/NFPA No. 11A, High Expansion Foam Extinguishing Systems. ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems. ANSI/NFPA No. 15, Water Spray Fixed Systems. ANSI/NFPA No. 16, Foam-Water Spray Systems. ANSI/NFPA No. 18, Wetting Agents. NFPA No. 26, Supervision of Valves.
WAC 296-24-629	ANSI/NFPA No. 71, Central Station Signaling Systems. ANSI/NFPA No. 72A, Local Protective Signaling Systems. ANSI/NFPA No. 72B, Auxiliary Signaling Systems. ANSI/NFPA No. 72D, Proprietary Protective Signaling Systems. ANSI/NFPA No. 72E, Automatic Fire Detectors. ANSI/NFPA No. 101, Life Safety Code.
WAC 296-24-631	ANSI/NFPA No. 71, Central Station Signaling Systems. ANSI/NFPA No. 72A, Local Protective Signaling Systems. ANSI/NFPA No. 72B, Auxiliary Protective Signaling Systems. ANSI/NFPA No. 72C, Remote Station Protective Signaling Systems.

	ANSI/NFPA No. 72D, Proprietary Protective Signaling Systems.
	ANSI/NFPA No. 101, Life Safety Code.
Metric Conversion	. . ANSI/ASTM NSo. E380, American National Standard for Metric Practice.

NFPA standards are available from the National Fire Protection Association; Batterymarch Park, Quincy, MA 02269-9101.

ANSI Standards are available from the American National Standards Institute; 11 West 42nd Street; New York, NY 10036.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-63299, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63299, filed 12/24/81.]

WAC 296-24-63399 Appendix C—Fire protection references for further information. (1) Appendix general references. The following references provide information which can be helpful in understanding the requirements contained in all of the sections of Part G:

(a) Fire Protection Handbook, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(b) Accident Prevention Manual for Industrial Operations, National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611.

(c) Various associations also publish information which may be useful in understanding these standards. Examples of these associations are: Fire Equipment Manufacturers Association (FEMA) of Cleveland, OH 44115-2851, and the National Association of Fire Equipment Distributors (NAFED) of Chicago, IL 60611-4267.

(2) Appendix references applicable to individual sections. The following references are grouped according to individual sections contained in Part G. These references provide information which may be helpful in understanding and implementing the standards of each section of Part G.

(a) WAC 296-24-58505 - Fire brigades:

(i) Private Fire Brigades, NFPA 27; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Initial Fire Attack, Training Standard On, NFPA 197; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Fire Fighter Professional Qualifications, NFPA 1001; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Organization for Fire Services, NFPA 1201; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Organization of a Fire Department, NFPA 1202; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Protective Clothing for Structural Fire Fighting, ANSI/NFPA 1971; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) American National Standards Institute for Men's Safety-Toe Footwear, ANSI Z41.1; American National Standards Institute, New York, NY 10036.

(viii) American National Standards Institute for Occupational and Educational Eye and Face Protection, ANSI Z87.1; American National Standards Institute, New York, NY 10036.

(ix) American National Standards Institute, Safety Requirements for Industrial Head Protection, ANSI Z89.1; American National Standards Institute, New York, NY 10036.

(x) Specifications for Protective Headgear for Vehicular Users, ANSI Z90.1; American National Standards Institute, New York, NY 10036.

(xi) Testing Physical Fitness; Davis and Santa Maria, Fire Command, April 1975.

(xii) Development of a Job-Related Physical Performance Examination for Fire Fighters; Dotson and Others. A summary report for the National Fire Prevention and Control Administration, Washington, D.C., March 1977.

(xiii) Proposed Sample Standards for Fire Fighters' Protective Clothing and Equipment; International Association of Fire Fighters, Washington, D.C. 20006-5395.

(xiv) A Study of Facepiece Leakage of Self-Contained Breathing Apparatus by DOP Man Tests; Los Alamos National Laboratory, Los Alamos, N.M.

(xv) The Development of Criteria for Fire Fighters' Gloves; Vol. II: Glove Criteria and Test Methods; National Institute for Occupational Safety and Health, Cincinnati, Ohio, 1976.

(xvi) Model Performance Criteria for Structural Fire Fighters' Helmets; National Fire Prevention and Control Administration, Washington, D.C., 1977.

(xvii) Fire Fighters; Job Safety and Health Magazine, Occupational Safety and Health Administration, Washington, D.C., June 1978.

(xviii) Eating Smoke—The Dispensable Diet; Utech, H.P. The Fire Independent, 1975.

(xix) Project Monoxide—A Medical Study of an Occupational Hazard of Fire Fighters; International Association of Fire Fighters, Washington, D.C. 20006-5395.

(xx) Occupational Exposures to Carbon Monoxide in Baltimore Fire Fighters; Radford Baltimore, MD. Journal of Occupational Medicine, September, 1976.

(xxi) Fire Brigades; National Safety Council, Chicago, IL 60611, 1966.

(xxii) American National Standards Institute, Practice for Respiratory Protection for the Fire Service, ANSI Z88.5; American National Standards Institute, New York, NY 10036.

(xxiii) Respirator Studies for the Nuclear Regulatory Commission; October 1, 1977—September 30, 1978. Evaluation and Performance of Open-Circuit Breathing Apparatus. NUREG/CR-1235. Los Alamos National Laboratory; Los Alamos, NM 87545, January, 1980.

(b) WAC 296-24-592 - Portable fire extinguishers:

(i) Standard for Portable Fire Extinguishers, ANSI/NFPA 10; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

(ii) Methods for Hydrostatic Testing of Compressed-Gas Cylinders, C-1; Compressed Gas Association, 1725 Jefferson Davis Highway, Arlington, VA 22202-4100.

(iii) Recommendations for the Disposition of Unserviceable Compressed-Gas Cylinders, C-2; Compressed Gas

Association, 1725 Jefferson Davis Highway, Arlington, VA 22202-4100.

(iv) Standard for Visual Inspection of Compressed-Gas Cylinders, C-6; Compressed Gas Association, 1725 Jefferson Davis Highway, Arlington, VA 22202-4100.

(v) Portable Fire Extinguisher Selection Guide, National Association of Fire Equipment Distributors, 401 North Michigan Avenue Chicago, IL 60611-4267.

(c) WAC 296-24-602 - Standpipe and hose systems:

(i) Standard for the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard of the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard for Screw Threads and Gaskets for Fire Hose Connections, ANSI/NFPA 194; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard for Fire Hose, NFPA 196; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Standard for the Care of Fire Hose, NFPA 198; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(d) WAC 296-24-607 - Automatic sprinkler systems:

(i) Standard of the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for the Care and Maintenance of Sprinkler Systems, ANSI/NFPA 13A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard for Indoor General Storage, ANSI/NFPA 231; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Standard for Rack Storage of Materials, ANSI/NFPA 231C; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(e) WAC 296-24-617 - Fixed extinguishing systems, general information:

(i) Standard for Foam Extinguishing Systems, ANSI/NFPA 11; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for Hi-Expansion Foam Systems, ANSI/NFPA 11A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard on Synthetic Foam and Combined Agent Systems, ANSI/NFPA 11B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard on Halon 1301, ANSI/NFPA 12A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard on Halon 1211, ANSI/NFPA 12B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Standard for Water Spray Systems, ANSI/NFPA 15; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(viii) Standard for Foam-Water Sprinkler Systems and Foam-Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ix) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(f) WAC 296-24-622 - Fixed extinguishing systems, dry chemical:

(i) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapor from Commercial Cooling Equipment, NFPA 96; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(g) WAC 296-24-623 - Fixed extinguishing systems, gaseous agents:

(i) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard on Halon 1301, ANSI/NFPA 12B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard on Halon 1211, ANSI/NFPA 12B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard on Explosion Prevention Systems, ANSI/NFPA 69; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Determination of Halon 1301/1211 Threshold Extinguishing Concentrations Using the Cup Burner Method, Riley and Olson, Ansul Report AL-530-A.

(h) WAC 296-24-627 - Fixed extinguishing systems, water spray and foam agents:

(i) Standard for Foam Extinguisher Systems, ANSI/NFPA 11; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for High-Expansion Foam Systems, ANSI/NFPA 11A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for Water Spray Fixed Systems for Fire Protection, ANSI/NFPA 15; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for the Installation of Foam-Water Sprinkler Systems and Foam-Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(i) WAC 296-24-629 - Fire detection systems:

(i) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(j) WAC 296-24-631 - Employee alarm systems:

(i) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(ii) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iii) Standard for Local Protective Signaling Systems, ANSI/NFPA 72A; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(iv) Standard for Auxiliary Protective Signaling Systems, ANSI/NFPA 72B; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(v) Standard for Remote Station Protective Signaling Systems, ANSI/NFPA 72C; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vi) Standard for Proprietary Protective Signaling Systems, ANSI/NFPA 72D; National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.

(vii) Vocal Emergency Alarms in Hospitals and Nursing Facilities: Practice and Potential, National Institute of Standards and Technology, Quince Orchard and Clopper Roads, Gaithersburg, MD 20899-0011, July, 1977.

(viii) Fire Alarm and Communication Systems, National Institute of Standards and Technology, Quince Orchard and Clopper Roads, Gaithersburg, MD 20899-0011, April, 1976.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-63399, filed 7/20/94, effective 9/20/94; 92-23-017 (Order 92-13), § 296-24-63399, filed 11/10/92, effective 12/18/92; 88-14-108 (Order 88-11), § 296-24-63399, filed 7/6/88; 87-24-051 (Order 87-24), § 296-24-63399, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63399, filed 12/24/81.]

WAC 296-24-63499 Appendix D—Availability of publications incorporated by references in WAC 296-24-58505—Fire brigades. The final standard for fire brigades, WAC 296-24-585, contains provisions which incorporate certain publications by reference. The publications provide criteria and test methods for protective clothing worn by those fire brigade members who are expected to perform interior structural fire fighting. The standard references the publications as the chief sources of information for determining if the protective clothing affords the required level of protection.

It is appropriate to note that the final standard does not require employers to purchase a copy of the referenced publications. Instead, employers can specify (in purchase orders to the manufacturers) that the protective clothing meet the criteria and test methods contained in the referenced publications and can rely on the manufacturers assurances of compliance. Employers, however, may desire to obtain a copy of the referenced publications for their own information.

The section designation of the standard where the referenced publications appear, the title of the publications, and the availability of the publications are as follows:

Section Designation	Referenced Publication	Available From
WAC 296-24-58513 (3)(b)	"Protective Clothing for Structural Fire Fighting." NFPA	National Fire Protection Association, Batterymarch Park, Quincy, MA 02269-9101.
WAC 296-24-58513 (4)(a)	"Development of Criteria for Fire Fighter's Gloves; Vol. II, Part II: Test Methods" (1976)	U.S. Government Printing Office, Washington, D.C. 20401. Stock No. for Vol. II is: 071-033-021-1.
WAC 296-24-58513 (5)(a)	"Model Performance Criteria for Structural Fire fighter's Helmets" (1977)	U.S. Fire Administration, National Fire Safety and Research Office, 16825 South Seton Avenue, Emmitsburg, Maryland 21727.

The referenced publications (or a microfiche of the publications) are available for review at many universities and public libraries throughout the country. These publications may also be examined at the OSHA Technical Data Center, Room N2439-Rear, United States Department of Labor, 200 Constitution Avenue Northwest, Washington, D.C. 20210 (202-523-9700), or at any OSHA Regional Office (see telephone directories under United States Government-Labor Department).

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-63499, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63499, filed 12/24/81.]

WAC 296-24-63599 Appendix E—Test methods for protective clothing. This appendix contains test methods which must be used to determine if protective clothing affords the required level of protection as specified in WAC 296-24-58505 - fire brigades.

(1) Puncture resistance test method for foot protection.

(a) Apparatus. The puncture resistance test shall be performed on a testing machine having a movable platform adjusted to travel at one-quarter-inch per minute (0.1 cm/sec). Two blocks of hardwood, metal, or plastic shall be prepared as follows: The blocks shall be of such size and

thickness as to insure a suitable rigid test ensemble and allow for at least one-inch of the pointed end of an 8D nail to be exposed for the penetration. One block shall have a hole drilled to hold an 8D common nail firmly at an angle of 98°. The second block shall have a maximum one-half inch (1.3 cm) diameter hole drilled through it so that the hole will allow free passage of the nail after it penetrates the insole during the test.

(b) Procedure. The test ensemble consisting of the sample unit, the two prepared blocks, a piece of leather outsole ten to eleven irons thick and a new 8D nail, shall be placed as follows: The 8D nail in the hole, the sample of outsole stock superimposed above the nail, the area of the sole plate to be tested placed on the outsole, and the second block with hole so placed as to allow for free passage of the nail after it passes through the outsole stock and sole plate in that order. The machine shall be started and the pressure, in pounds required for the nail to completely penetrate the outsole and sole plate, recorded to the nearest five pounds. Two determinations shall be made on each sole plate and the results averaged. A new nail shall be used for each determination.

(c) Source. These test requirements are contained in "Military Specification For Fireman's Boots," MIL-B-2885D (1973 and amendment dated 1975) and are reproduced for your convenience.

(2) Test method for determining the strength of cloth by tearing: Trapezoid method.

(a) Test specimen. The specimen shall be a rectangle of cloth three-inches by six-inches (7.6 cm by 15.2 cm). The long dimension shall be parallel to the warp for warp tests and parallel to the filling for filling tests. No two specimens for warp tests shall contain the same warp yarns, nor shall any two specimens for filling tests contain the same filling yarns. The specimen shall be taken no nearer the selvage than 1/10 the width of the cloth. An isosceles trapezoid having an altitude of three inches (7.6 cm) and bases of one inch (2.5 cm) and four inches (10.2 cm) in length, respectively, shall be marked on each specimen, preferably with the aid of a template. A cut approximately three-eighths inch (1 cm) in length shall then be made in the center of a perpendicular to the one inch (2.5 cm) edge.

(b) Apparatus.

(i) Six-ounce (.17 kg) weight tension clamps shall be used so designed that the six ounces (.17 kg) of weight are distributed evenly across the complete width of the sample.

(ii) The machine shall consist of three main parts: Straining mechanism, clamps for holding specimen, and load and elongation recording mechanisms.

(iii) A machine wherein the specimen is held between two clamps and strained by a uniform movement of the pulling clamp shall be used.

(iv) The machine shall be adjusted so that the pulling clamp shall have a uniform speed of 12 ± 10.5 inches per minute (0.5 ± .02 cm/sec).

(v) The machine shall have two clamps with two jaws on each clamp. The design of the two clamps shall be such that one gripping surface or jaw may be an integral part of the rigid frame of the clamp or be fastened to allow a slight vertical movement, while the other gripping surface or jaw shall be completely moveable. The dimension of the immovable jaw of each clamp parallel to the application of the load shall measure one inch, and the dimension of the jaw perpendicular to this direction shall measure three inches or more. The face of the moveable jaw of each clamp shall measure one inch by three inches.

Each jaw face shall have a flat, smooth, gripping surface. All edges which might cause a cutting action shall be rounded to a radius of not over 1/64 inch (.04 cm). In cases where a cloth tends to slip when being tested, the jaws may be faced with rubber or other material to prevent slippage. The distance between the jaws (gage length) shall be one inch at the start of the test.

(vi) Calibrated dial; scale or chart shall be used to indicate applied load and elongation. The machine shall be adjusted or set, so that the maximum load required to break the specimen will remain indicated on the calibrated dial or scale after the test specimen has ruptured.

(vii) The machine shall be of such capacity that the maximum load required to break the specimen shall be not greater than eighty-five percent or less than fifteen percent of the rated capacity.

(viii) The error of the machine shall not exceed two percent up to and including a fifty-pound load (22.6 kg) and one percent over a fifty-pound load (22.6 kg) at any reading within its loading range.

(ix) All machine attachments for determining maximum loads shall be disengaged during this test.

(c) Procedure.

(i) The specimen shall be clamped in the machine along the nonparallel sides of the trapezoid so that these sides lie along the lower edge of the upper clamp and the upper edge of the lower clamp with the cut halfway between the clamps. The short trapezoid base shall be held taut and the long trapezoid base shall lie in the folds.

(ii) The machine shall be started and the force necessary to tear the cloth shall be observed by means of an autographic recording device. The speed of the pulling clamp shall be 12 inches ± 0.5-inch per minute (0.5 ± .02 cm/sec).

(iii) If a specimen slips between the jaws, breaks in or at the edges of the jaws, or if for any reason attributable to faulty technique, an individual measurement falls markedly below the average test results for the sample unit, such result shall be discarded and another specimen shall be tested.

(iv) The tearing strength of the specimen shall be the average of the five highest peak loads of resistance registered for three inches (7.6 cm) of separation of the tear.

(d) Report.

(i) Five specimens in each of the warp and filling direction shall be tested from each sample unit.

(ii) The tearing strength of the sample unit shall be the average of the result obtained from the specimens tested in each of the warp and filling directions and shall be reported separately to the nearest 0.1 pound (.05 kg).

(e) Source. These test requirements are contained in "Federal Test Method Standard 191, Method 5136," and are reproduced for your convenience.

(3) Test method for determining flame resistance of cloth; vertical.

(a) Test specimen. The specimen shall be a rectangle of cloth two and three-quarter inches (7.0 cm) by twelve inches (30.5 cm) with the long dimension parallel to either the warp or filling direction of the cloth. No two warp

specimens shall contain the same warp yarns, and no two filling specimens shall contain the same filling yarn.

(b) Number of determinations. Five specimens from each of the warp and filling directions shall be tested from each sample unit.

(c) Apparatus.

(i) Cabinet. A cabinet and accessories shall be fabricated in accordance with the requirements specified in Figures L-1, L-2, and L-3. Galvanized sheet metal or other suitable metal shall be used. The entire inside back wall of the cabinet shall be painted black to facilitate the viewing of the test specimen and pilot flame.

(ii) Burner. The burner shall be equipped with a variable orifice to adjust the flame height, a barrel having a three-eighth inch (9.5 mm) inside diameter and a pilot light.

(A) The burner may be constructed by combining a three-eighth inch (1 cm) inside diameter barrel 3 ± 1/4-inches (7.6 ± .6 cm) long from a fixed orifice burner with a base from a variable orifice burner.

(B) The pilot light tube shall have a diameter of approximately one-sixteenth inch (.2 cm) and shall be spaced one-eighth inch (.3 cm) away from the burner edge with a pilot flame one-eighth inch (.3 cm) long.

(C) The necessary gas connections and the applicable plumbing shall be as specified in Figure L-4 except that a solenoid valve may be used in lieu of the stopcock valve to which the burner is attached. The stopcock valve or solenoid valve, whichever is used, shall be capable of being fully opened or fully closed in 0.1 second.

(D) On the side of the barrel of the burner, opposite the pilot light there shall be a metal rod of approximately one-eighth inch (.3 cm) diameter spaced one-half inch (1.3 cm) from the barrel and extending above the burner. The rod shall have two five-sixteenth inch (.8 cm) prongs marking the distances of three-quarters inch (1.9 cm), and one and one-half inches (3.8 cm) above the top of the burner.

(E) The burner shall be fixed in a position so that the center of the barrel of the burner is directly below the center of the specimen.

(iii) There shall be a control valve system with a delivery rate designed to furnish gas to the burner under a pressure of 2-1/2 ± 1/4 (psi) (17.5 ± 1.8 kPa) at the burner inlet. The manufacturer's recommended delivery rate for the valve system shall be included in the required pressure.

(iv) A synthetic gas mixture shall be of the following composition within the following limits (analyzed at standard conditions): 55 ± 3 percent hydrogen, 24 ± 1 percent methane, 3 ± 1 percent ethane, and 18 ± 1 percent carbon monoxide which will give a specific gravity of 0.365 ± 0.018 (air = 1) and a B.T.U. content of 540 ± 20 per cubic foot (20.1 ± 3.7 kJL) (dry basis) at 69.8 F (21 C).

(v) There shall be metal hooks and weights to produce a series of total loads to determine length of char. The metal hooks shall consist of No. 19 gage steel wire or equivalent and shall be made from three inch (7.6 cm) lengths of wire and bent one-half inch (1.3 cm) from one end to a 45-degree hook. One end of the hook shall be fastened around the neck of the weight to be used.

(vi) There shall be a stop watch or other device to measure the burning time 0.2 second.

(vii) There shall be a scale, graduated in 0.1 inch (.3 cm) to measure the length of char.

(d) Procedure.

(i) The material undergoing test shall be evaluated for the characteristics of after-flame time and char length on each specimen.

(ii) All specimens to be tested shall be at moisture equilibrium under standard atmospheric conditions in accordance with subsection (3)(c) of this appendix. Each specimen to be tested shall be exposed to the test flame within twenty seconds after removal from the standard atmosphere. In case of dispute, all testing will be conducted under standard atmospheric conditions in accordance with subsection (3)(c) of this appendix.

(iii) The specimen in its holder shall be suspended vertically in the cabinet in such a manner that the entire length of the specimen is exposed and the lower end is three-quarters inch (1.9 cm) above the top of the gas burner. The apparatus shall be set up in a draft-free area.

(iv) Prior to inserting the specimen, the pilot flame shall be adjusted to approximately one-eighth inch (.3 cm) in height measured from its lowest point to the tip.

The burner flame shall be adjusted by means of the needle valve in the base of the burner to give a flame height of one and one-half inches (3.8 cm) with the stopcock fully open and the air supply to burner shut off and taped. The one and one-half inch (3.8 cm) flame height is obtained by adjusting the valve so that the uppermost portion (tip) of the flame is level with the tip of the metal prong (see Fig. L-2) specified for adjustment of flame height. It is an important aspect of the evaluation that the flame height to be adjusted with the tip of the flame level with the tip of the metal prong. After inserting the specimen, the stopcock shall be fully opened, and the burner flame applied vertically at the middle of the lower edge of the specimen for twelve seconds and the burner turned off. The cabinet door shall remain shut during testing.

(v) The after-flame shall be the time the specimen continues to flame after the burner flame is shut off.

(vi) After each specimen is removed, the test cabinet shall be cleared of fumes and smoke prior to testing the next specimen.

(vii) After both flaming and glowing have ceased, the char length shall be measured. The char length shall be the distance from the end of the specimen, which was exposed to the flame, to the end of a tear (made lengthwise) of the specimen through the center of the charred area as follows: The specimen shall be folded lengthwise and creased by hand along a line through the highest peak of the charred area. The hook shall be inserted in the specimen (or a hole, one-quarter inch (.6 cm) diameter or less, punched out for the hook) at one side of the charred area one-quarter inch (.6 cm) from the adjacent outside edge and one-quarter inch (.6 cm) in from the lower end. A weight of sufficient size such that the weight and hook together shall equal the total tearing load required in Table L-2 of this section shall be attached to the hook.

(viii) A tearing force shall be applied gently to the specimen by grasping the corner of the cloth at the opposite edge of the char from the load and raising the specimen and weight clear of the supporting surface. The end of the tear shall be marked off on the edge and the char length measurement made along the undamaged edge.

Loads for determining char length applicable to the weight of the test cloth shall be as shown in Table L-2.

TABLE L-2

Specified weight per square yard of cloth before any fire retardant treatment or coating - ounces	Total learning weight for determining the charred length - pound
2.0 to 6.0	0.25
Over 6.0 to 15.0	0.50
Over 15.0 to 23.0	0.75
Over 23.0	1.0

To change into S.I. (System International) units, 1 ounce = 28.35 grams, 1 pound = 453 grams, 1 yard = .91 metre.

(ix) The after-flame time of the specimen shall be recorded to the nearest 0.2 second and the char length to the nearest 0.1 inch (.3 cm).

(e) Report.

(i) The after-flame time and char length of the sample unit shall be the average of the results obtained from the individual specimens tested. All values obtained from the individual specimens shall be recorded.

(ii) The after-flame time shall be reported in the nearest 0.2 second and the char length to the nearest 0.1 inch (.3 cm).

(f) Source. These test requirements are contained in "Federal Test Method Standard 191, Method 5903 (1971)," and are reproduced for your convenience.

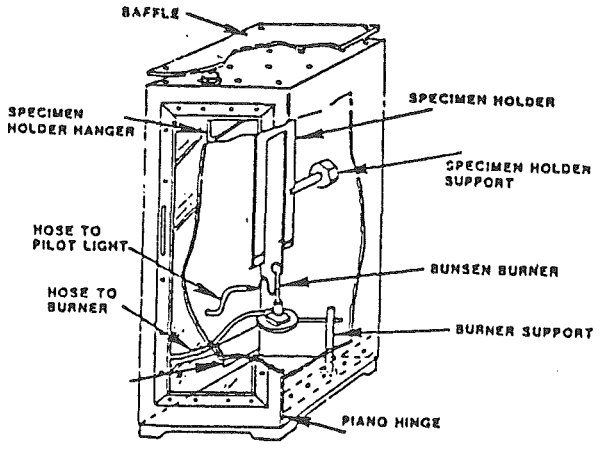


Figure L-1 - Vertical flame resistance textile apparatus. All given dimensions are in inches. System International (S.I.) unit: 1 inch = 2.54 cm.

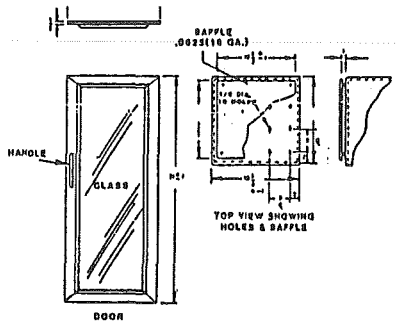


Figure L-2 - Vertical flame resistance textile apparatus, door and top view w/baffle. All given dimensions are in inches. System International (S.I.) unit: 1 inch = 2.54 cm.

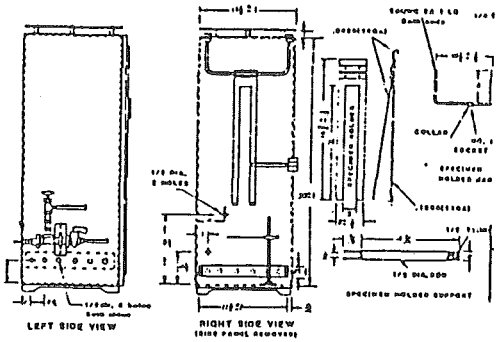


Figure L-3 - Vertical flame resistance textile apparatus, views and details. All given dimensions are in inches. System International (S.I.) unit: 1 inch = 2.54 cm.

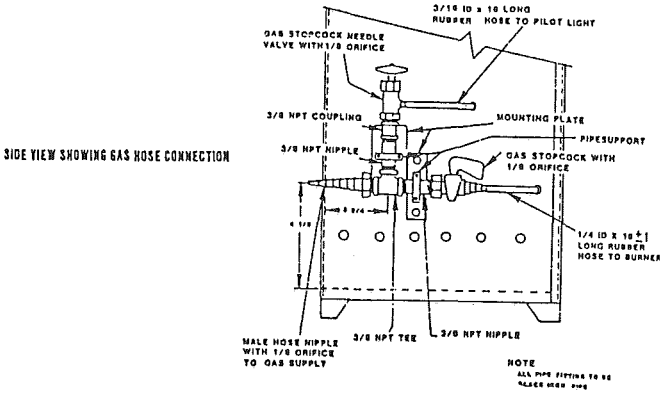


Figure L-4 - Vertical flame resistance textile apparatus. All given dimensions are in inches. System International (S.I.) unit: 1 inch = 2.54 cm.

[Statutory Authority: Chapter 49.17 RCW. 92-23-017 (Order 92-13), § 296-24-63599, filed 11/10/92, effective 12/18/92; 87-24-051 (Order 87-24), § 296-24-63599, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63599, filed 12/24/81.]

PART H-1
HAND AND PORTABLE POWERED TOOLS AND OTHER HAND-HELD EQUIPMENT

Hand and portable powered tools

WAC 296-24-650 Hand and portable powered tools and equipment—General.

[Order 73-5, § 296-24-650, filed 5/9/73 and Order 73-4, § 296-24-650, filed 5/7/73.]

WAC 296-24-65001 General requirements. Each employer shall be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees.

[Order 73-5, § 296-24-65001, filed 5/9/73 and Order 73-4, § 296-24-65001, filed 5/7/73.]

WAC 296-24-65003 Compressed air used for cleaning. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment.

[Order 73-5, § 296-24-65003, filed 5/9/73 and Order 73-4, § 296-24-65003, filed 5/7/73.]

WAC 296-24-65005 Compressed air tools. (1) In the use of compressed air tools, care should be used to prevent the tool from being shot from the gun.

(2) When momentarily out of use the gun should be laid in such position that the tool cannot fly out if the pressure is accidentally released. When not in use, all tools should be removed from the gun.

(3) In disconnecting a compressed air tool from the air line, care should be exercised first to shut off the pressure and then to operate the tool to exhaust the pressure remaining in the hose.

(4) Compressed air hose or guns shall not be pointed at or brought into contact with the body of any person.

[Order 73-5, § 296-24-65005, filed 5/9/73 and Order 73-4, § 296-24-65005, filed 5/7/73.]

WAC 296-24-65007 Air hammer. (1) Before laying down an air hammer remove tool from hammer unless it is held in place by safety catch.

[Order 73-5, § 296-24-65007, filed 5/9/73 and Order 73-4, § 296-24-65007, filed 5/7/73.]

WAC 296-24-655 Guarding of portable powered tools.

[Order 73-5, § 296-24-655, filed 5/9/73 and Order 73-4, § 296-24-655, filed 5/7/73.]

WAC 296-24-65501 Portable powered tools. (1) Portable circular saws.

(a) All portable, power-driven circular saws having a blade diameter greater than 2 in. shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to covering position.

(b) (1)(a) of this section does not apply to circular saws used in the meat industry for meat cutting purposes.

(2) Switches and controls.

(a) All hand-held powered circular saws having a blade diameter-greater than 2 inches, electric, hydraulic or pneumatic chain saws, and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch or control that will shut off the power when the pressure is released. All hand-held gasoline powered chain saws shall be equipped with a constant pressure throttle control that will shut off the power to the saw chain when the pressure is released.

(b) All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders with discs greater than 2 inches in diameter, belt sanders, reciprocating saws, saber, scroll, and jig saws with blade shanks greater than a nominal one-fourth inch, and other similarly operating powered tools shall be equipped with a constant pressure switch or control and may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

(c) All other hand-held powered tools, such as, but not limited to, platen sanders, grinders with wheels 2 inches in diameter or less, disc sanders with discs 2 inches in diameter or less, routers, planers, laminate trimmers, nibblers, shears, saber, scroll, and jig saws with blade shanks a nominal one-fourth of an inch wide or less, may be equipped with either a positive "on-off" control, or other controls as described by (2)(a) and (b) of this section.

(i) Saber, scroll, and jig saws with nonstandard blade holders may use blades with shanks which are nonuniform in width, provided the narrowest portion of the blade shank is an integral part in mounting the blade.

(ii) Blade shank width shall be measured at the narrowest portion of the blade shank when saber, scroll, and jig saws have nonstandard blade holders.

(iii) "Nominal" in this section means +0.05 inch.

(d) The operating control on hand-held power tools shall be so located as to minimize the possibility of its accidental operation, if such accidental operation would constitute a hazard to employees.

(e) This subdivision does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, garden appliances, household and kitchen appliances, personal care appliances, medical or dental equipment, or to fixed machinery.

(3) Portable belt sanding machines. Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accidental contact.

(4) Cracked saws. All cracked saws shall be removed from service.

(5) Grounding. Portable electric powered tools shall meet the electrical requirements of chapter 296-24 WAC Part L.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-65501, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-65501, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-65501, filed 11/13/80; Order 74-27, § 296-24-65501, filed 5/7/74; Order 73-5, § 296-24-65501, filed 5/9/73 and Order 73-4, § 296-24-65501, filed 5/7/73.]

WAC 296-24-657 Pneumatic powered tools and hose.

[Order 73-5, § 296-24-657, filed 5/9/73 and Order 73-4, § 296-24-657, filed 5/7/73.]

WAC 296-24-65701 Portable tools. (1) The operating trigger on portable hand-operated utilization equipment shall be so located as to minimize the possibility of its accidental operation and shall be arranged to close the air inlet valve automatically when the pressure of the operator's hand is removed.

(2) A tool retainer shall be installed on each piece of utilization equipment which, without such a retainer, may eject the tool.

[Order 73-5, § 296-24-65701, filed 5/9/73 and Order 73-4, § 296-24-65701, filed 5/7/73.]

WAC 296-24-65703 Airhose. Hose and hose connections used for conducting compressed air to utilization equipment shall be designed for the pressure and service to which they are subjected.

[Order 73-5, § 296-24-65703, filed 5/9/73 and Order 73-4, § 296-24-65703, filed 5/7/73.]

WAC 296-24-660 Portable abrasive wheels.

[Order 73-5, § 296-24-660, filed 5/9/73 and Order 73-4, § 296-24-660, filed 5/7/73.]

WAC 296-24-66001 Abrasive wheel terms. (1) Mounted wheels. Mounted wheels, usually 2-inch diameter or smaller, and of various shapes, may be either organic or inorganic bonded abrasive wheels. They are secured to plain or threaded steel mandrels.

(2) Tuck pointing. Removal, by grinding, of cement, mortar, or other nonmetallic jointing material.

(3) Tuck pointing wheels. Tuck pointing wheels, usually Type 1, reinforced organic bonded wheels have diameter, thickness and hole size dimension. They are subject to the same limitations of use and mounting as Type 1 wheels defined in WAC 296-24-66001(10).

LIMITATION: Wheels used for tuck pointing should be reinforced, organic bonded.

(4) Portable grinding. A grinding operation where the grinding machine is designed to be hand held and may be easily moved from one location to another.

(5) Organic bonded wheels. Organic wheels are wheels which are bonded by means of an organic material such as resin, rubber, shellac, or other similar bonding agent.

(6) Safety guard. A safety guard is an enclosure designed to restrain the pieces of the grinding wheel and furnish all possible protection in the event that the wheel is broken in operation.

(7) Reinforced wheels. The term "reinforced" as applied to grinding wheels shall define a class of organic wheels which contain strengthening fabric or filament. The term "reinforced" does not cover wheels using such mechanical additions as steel rings, steel cup backs or wire or tape winding.

(8) Type 11 flaring cup wheels. Type 11 flaring cup wheels have double diameter dimensions D and J, and in addition have thickness, hole size, rim and back thickness dimensions. Grinding is always performed on rim face, W dimension. Type 11 wheels are subject to all limitations of use and mounting listed for Type 6 straight sided cup wheels definition in WAC 296-24-66001(9).

LIMITATION: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition when unthreaded hole wheels are specified the inside flat, K dimension, shall be large enough to accommodate a suitable flange.

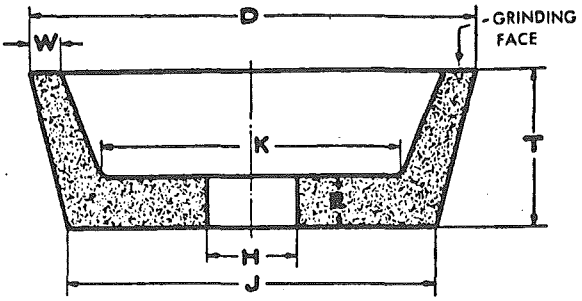


Figure P-1

Type 11—Flaring-cup wheel side grinding wheel having a wall flared or tapered outward from the back. Wall thickness at the back is normally greater than at the grinding face (W).

(9) Type 6 straight cup wheels. Type 6 cup wheels have diameter, thickness, hole size, rim thickness, and back thickness dimensions. Grinding is always performed on rim face, W dimension.

LIMITATION: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition, when unthreaded hole wheels are specified, the inside flat, K dimension, must be large enough to accommodate a suitable flange.

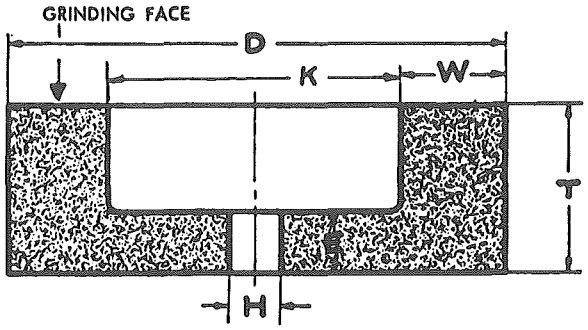


Figure P-2

Type 6—Straight-cup wheel

Side grinding wheel having a diameter, thickness and hole with one side straight or flat and the opposite side recessed. This type, however, differs from Type 5 in that the grinding is performed on the wall of the abrasive created by difference between the diameter of the recess and the outside diameter of the wheel. Therefore, the wall dimension "W" takes precedence over the diameter of the recess as an essential intermediate dimension to describe this shape type.

(10) Type 1 straight wheels. Type 1 straight wheels have a diameter, thickness, and hole size dimensions and should be used only on the periphery. Type 1 wheels shall be mounted between flanges.

LIMITATION: Hole dimension (H) should not be greater than two-thirds of wheel diameter dimension (D) for precision, cylindrical, centerless, or surface grinding applications. Maximum hole size for all other application should not exceed one-half wheel diameter.

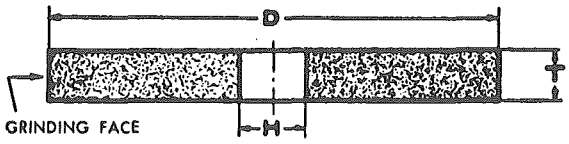


Figure P-3

Type 1—Straight wheel

Peripheral grinding wheel having a diameter, thickness and hole.

[Order 73-5, § 296-24-66001, filed 5/9/73 and Order 73-4, § 296-24-66001, filed 5/7/73.]

WAC 296-24-66003 General requirements. (1) All abrasive wheels shall be used only on machines provided with safety guards as defined in the following sections through WAC 296-24-66011.

EXCEPTIONS: This requirement shall not apply to the following classes of wheels and conditions.

(a) Wheels used for internal work while within the work being ground.

(b) Mounted wheels used in portable operations 2 inches and smaller in diameter.

(c) Types 16, 17, 18, 18R, and 19 cones and plugs and threaded hole pot balls as illustrated and described by 1.4.11 of ANSI B 7.1-1970 Safety Code for the Use, Care and Protection of Abrasive Wheels, where the work offers protection.

(2) The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard.

(a) Exception: Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

(b) Exception: The spindle end, nut, and outer flange may be exposed on portable machines designed for, and used with, Tzype 6, 11, 27, and 28 abrasive wheels, cutting off wheels, and tuck pointing wheels.

(c) Exception: The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

[Order 74-27, § 296-24-66003, filed 5/7/74; Order 73-5, § 296-24-66003, filed 5/9/73 and Order 73-4, § 296-24-66003, filed 5/7/73.]

WAC 296-24-66005 Cup wheels. Cup wheels (Types 6 and 11) shall be guarded by:

(1) Safety guards as specified in WAC 296-24-66003; or,

(2) Special "revolving cup guards" which mount behind the wheel and turn with it. They shall be made of steel or other material with adequate strength and shall enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform with all regulations. (See WAC 296-24-66011.) It is necessary to maintain clearance between the wheel side and the guard. The clearance shall not exceed one-sixteenth inch; or,

(3) Some other form of guard that will insure as good protection as that which would be provided by the guards specified in WAC 296-24-66005 (1) or (2).

[Order 73-5, § 296-24-66005, filed 5/9/73 and Order 73-4, § 296-24-66005, filed 5/7/73.]

WAC 296-24-66007 Vertical portable grinders. Safety guards used on machines known as right angle head or vertical portable grinders shall have a maximum exposure angle of 180°, and the guard shall be located so as to be between the operator and the wheel during use. Adjustment of guard shall be such that pieces of an accidentally broken wheel will be deflected away from the operator. (See Figure P-4.)

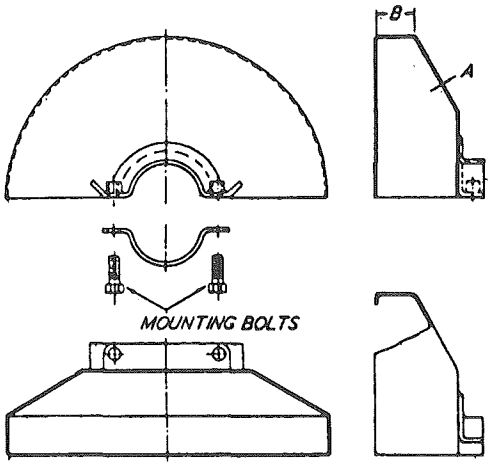


Figure No. P-4

[Order 73-5, § 296-24-66007, filed 5/9/73 and Order 73-4, § 296-24-66007, filed 5/7/73.]

WAC 296-24-66009 Other portable grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on other portable grinding machines shall not exceed 180° and the top half of the wheel shall be enclosed at all times. (See Figures P-5 and P-6.)

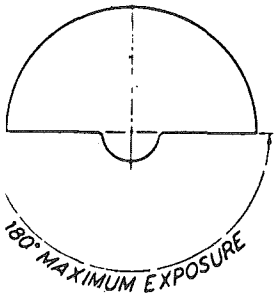


Figure No. P-5

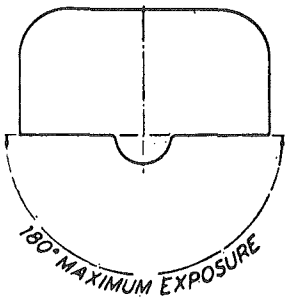


Figure No. P-6

[Order 73-5, § 296-24-66009, filed 5/9/73 and Order 73-4, § 296-24-66009, filed 5/7/73.]

WAC 296-24-66011 Mounting and inspection of abrasive wheels. (1) Immediately before mounting, all wheels shall be closely inspected and sounded by the user (ring test) to make sure they have not been damaged in transit, storage, or otherwise. The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel. Wheels should be tapped gently; if they sound cracked (dead), they shall not be used.

Note: Wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels. This is known as the "ring test."

(2) Grinding wheels shall fit freely on the spindle and remain free under all grinding conditions. The machine spindle shall be made to nominal (standard) size plus zero minus .002 inch, and the wheel hole shall be made suitably oversize to assure safety clearance under the conditions of operating heat and pressure.

Note: A controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) is essential to avoid excessive pressure from mounting and spindle expansion.

(3) All contact surfaces of wheels, blotters, and flanges shall be flat and free of foreign matter.

(4) When a bushing is used in the wheel hole it shall not exceed the width of the wheel and shall not contact the flanges.

(5) For requirements for the use of flanges and blotters see WAC 296-24-18007.

Note: Excluded machinery. Natural sandstone wheels and metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface are not covered by this section.

[Order 74-27, § 296-24-66011, filed 5/7/74; Order 73-5, § 296-24-66011, filed 5/9/73 and Order 73-4, § 296-24-66011, filed 5/7/73.]

WAC 296-24-663 Safety requirements for powder actuated fastening systems.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-663, filed 7/31/79.]

WAC 296-24-66301 Scope. This standard provides safety requirements for a powder actuated fastening tool or machine which propels a stud, pin, fastener, or other object for the purpose of affixing it by penetration to another object.

This standard does not apply to devices designed for attaching objects to soft construction materials, such as wood, plaster, tar, dry wallboard, and the like, or to stud welding equipment.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66301, filed 7/31/79.]

WAC 296-24-66303 Purpose. The purpose of this standard is to provide reasonable safety for life, limb, and property, by establishing requirements for design, construction, operation, service, and storage of powder actuated fastening tools, fasteners, and power loads.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66303, filed 7/31/79.]

WAC 296-24-66305 Definitions applicable to this section. (1) Angle control - a safety feature designed to prevent a tool from operating when tilted beyond a predetermined angle.

(2) Approved - meeting the requirements of this standard and acceptable to the department of labor and industries.

(3) Cased power load - a power load with the propellant contained in a closed case.

(4) Caseless power load - a power load with the propellant in solid form not requiring containment.

(5) Chamber (noun) - the location in the tool into which the power load is placed and in which it is actuated.

(6) Chamber (verb) - to fit the chamber according to manufacturer's specifications.

(7) Fasteners - any pins (unthreaded heads) or studs (threaded heads) driven by powder actuated tools.

(8) Fixture - a special shield that provides equivalent protection where the standard shield cannot be used.

(9) Head - that portion of a fastener that extends above the work surface after being properly driven.

(10) Misfire - a condition in which the power load fails to ignite after the tool has been operated.

(11) Powder actuated fastening system - a method comprising the use of a powder actuated tool, a power load, and a fastener.

(12) Powder actuated tool (also known as tool) - a tool that utilizes the expanding gases from a power load to drive a fastener.

(13) Power load - the energy source used in powder actuated tools.

(14) Qualified operator - a person who meets the requirements of WAC 296-24-66321 (1) and (2).

(15) Shield - a device, attached to the muzzle end of a tool, which is designed to confine flying particles.

(16) Spalled area - a damaged and nonuniform concrete or masonry surface.

(17) Test velocity - the measurement of fastener velocity performed in accordance with WAC 296-24-66307 (1)(m).

(18) Tools - tools can be divided into two types: Direct acting and indirect acting; and three classes: Low velocity, medium velocity, and high velocity.

(a) Direct-acting tool - a tool in which the expanding gas of the power load acts directly on the fastener to be driven.

(b) Indirect-acting tool - a tool in which the expanding gas of the power load acts on a captive piston, which in turn drives the fastener.

(c) Low-velocity tool - a tool whose test velocity has been measured ten times while utilizing the highest velocity combination of:

(i) The lightest commercially available fastener designed for that specific tool;

(ii) The strongest commercially available power load that will properly chamber in the tool;

(iii) The piston designed for that tool and appropriate for that fastener; that will produce an average test velocity from the ten tests not in excess of 100 meters per second (328 feet per second) with no single test having a velocity of over 108 m/s (354 ft/s).

(d) Medium-velocity tool - a tool whose test velocity has been measured ten times while utilizing the highest velocity combination of:

(i) The lightest commercially available fastener designed for the tool;

(ii) The strongest commercially available power load that will properly chamber in the tool;

(iii) The piston designed for that tool and appropriate for that fastener; that will produce an average test velocity from ten tests in excess of 100 m/s (328 ft/s) but not in excess of 150 m/s (492 ft/s) with no single test having a velocity of 160 m/s (525 ft/s).

(e) High-velocity tool - a tool whose test velocity has been measured ten times while utilizing the combination of:

(i) The lightest commercially available fastener designed for the tool;

(ii) The strongest commercially available power load which will properly chamber in the tool; that will produce an average velocity from the ten tests in excess of 150 m/s (492 ft/s).

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-66305, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66305, filed 7/31/79.]

WAC 296-24-66307 Requirements. (1) General.

(a) The tool shall be designed to prevent inadvertent actuation.

(b) The tool shall be designed to prevent actuation when dropped in any attitude from a height of 3 meters (10 ft) onto a smooth, hard surface such as concrete or steel, if such actuation can propel a fastener or any part thereof in free flight.

(c) Actuation of the tool shall be dependent upon at least two separate and distinct operations by the operator, with at least one operation being separate from the operation of holding the tool against the work surface.

(d) The tool shall be designed not to be operable other than against a work surface with a force on the work surface equal to 22 newtons (5 lb.) greater than the weight of the tool or a minimum impact energy of 4 joules (3 ft-lb).

(e) All tools shall be designed so that compatible protective shields or fixtures, designed, built, and supplied by the manufacturer of the tool, can be used (see WAC 296-24-66307 (2)(b), (3)(b), (4)(b) and 296-24-66313(8)).

(f) The tool shall be designed so that a determinable means of varying the power levels is available for selecting a power level adequate to perform the desired work (see WAC 296-24-66309(5)).

(g) The tool shall be designed so that all principal functional parts can be checked for foreign matter that may affect operation.

(h) The tool shall be designed so that all parts will be of adequate strength to resist maximum stresses imposed upon actuation when the tool is used in accordance with the manufacturer's instructions and is powered by any commercially available power load which will properly chamber in the tool.

(i) Each tool shall bear a legible permanent model designation, which shall serve as a means of identification. Each tool shall also bear a legible, permanent manufacturer's unique serial number.

(j) A lockable container shall be provided for each tool. The words "POWDER ACTUATED TOOL" shall appear in plain sight on the outside of the container. The following notice shall be attached on the inside cover of the container:

"WARNING - POWDER ACTUATED TOOL. TO BE USED ONLY BY A QUALIFIED OPERATOR AND KEPT UNDER LOCK AND KEY WHEN NOT IN USE."

(k) Each tool shall bear a durable warning label with the following statement, or the equivalent:

"WARNING - FOR USE ONLY BY QUALIFIED OPERATORS ACCORDING TO MANUFACTURER'S INSTRUCTION MANUAL."

(l) Each tool shall be supplied with the following:

(i) Operator's instruction and service manual.

(ii) Power load chart.

(iii) Tool inspection record.

(iv) Service tools and accessories.

(m) In determining tool test velocities, the velocity of the fastener shall be measured in free flight at a distance of 2 meters (6-1/2 ft) from the muzzle end of the tool, using accepted ballistic test methods.

(2) Design requirements - low-velocity class.

(a) Low-velocity tools, indirect-acting (piston) type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) A shield shall be supplied with each tool.

(3) Design requirements - medium-velocity class.

(a) Medium-velocity tools, indirect-acting (piston) type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) The tool shall have a shield at least 63 mm (2-1/2 in) in diameter mounted perpendicular to, and concentric with, the muzzle end, when it is indexed to the center position. A special shield or fixture may be used when it provides equivalent protection.

(c) The tool shall be designed so that it cannot be actuated unless it is equipped with a shield or fixture.

(d) The tool shall be designed with angle control so that it will not actuate when equipped with the standard shield indexed to the center position if the bearing surface of the shield is tilted more than 12 degrees from a flat surface.

(4) Design requirements - high-velocity class.

(a) High-velocity tools, direct-acting or indirect-acting type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) The tool shall have a shield at least 88 mm (3-1/2 in) in diameter mounted perpendicular to, and concentric with, the muzzle end, when it is indexed to the center position. A special shield or fixture may be used when it provides equivalent protection.

(c) The tool shall be designed so that it cannot be actuated unless it is equipped with a shield or fixture.

(d) The tool shall be designed with angle control so that it will not actuate when equipped with the standard shield indexed to the center position, if the bearing surface of the shield is tilted more than eight degrees from a flat surface.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66307, filed 7/31/79.]

WAC 296-24-66309 Power loads. (1) Identification of cased power loads. Cased power loads shall be coded to identify power load levels by case color and power load color as specified in Table P-1.

(2) Identification of caseless power loads. Caseless power loads shall be coded to identify power load levels by power load color as specified in Table P-1 and by configuration.

(3) Power load use limitation. No power load (cased or caseless) shall be used if it will properly chamber in any existing commercially available tool and will cause a fastener to have a test velocity in excess of the maximum test velocities specified for the said tool.

(4) Identification of power load packages. Power load packages shall provide a visual number-color indication of the power level of the power load as specified in Table P-1.

(5) Optional power load variation. Where means other than power loads of varying power levels are to be used to control penetration, such means shall provide an equivalent power level variation.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66309, filed 7/31/79.]

WAC 296-24-66311 Fasteners. Fasteners for use in powder actuated tools shall be designed and manufactured to function compatibly with these tools and, when used in masonry, concrete, or steel, to effect properly the application for which they are recommended.

TABLE P-1

Power Load Identification

Power Level	Color Identification		Nominal velocity	
	Case Color	Load Color	Meters per Second (± 13.5)	Feet per Second (± 45)
1	Brass	Gray	91	300
2	Brass	Brown	119	390
3	Brass	Green	146	480
4	Brass	Yellow	174	570
5	Brass	Red	201	660
6	Brass	Purple	229	750
7	Nickel	Gray	256	840
8	Nickel	Brown	283	930
9	Nickel	Green	311	1020
10	Nickel	Yellow	338	1110
11	Nickel	Red	366	1200
12	Nickel	Purple	393	1290

Note: The nominal velocity applies to a 9.53 mm (3/8-in) diameter 22.7-gram (350-grain) ballistic slug fired in a test device and has no reference to actual fastener velocity developed in any specific tool.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66311, filed 7/31/79.]

WAC 296-24-66313 Operation. (1) Only tools meeting the requirements of this standard shall be used.

(2) Only qualified operators shall operate tools.

(3) The lowest velocity class of tool that will properly set the fastener shall be used.

(4) Tools shall be operated in strict accordance with the manufacturer's instructions.

(5) Eye or face protection, or both, shall be worn by operators, assistants, and adjacent personnel when tool is in use. Hearing protection shall be used when making fastenings in confined areas.

(6) Each day, prior to use, the operator shall inspect the tool to determine that it is in proper working condition in accordance with the testing methods recommended by the manufacturer of the tool.

(7) Any tool found not to be in proper working condition shall be immediately removed from service and tagged "DEFECTIVE"; it shall not be used until it has been properly repaired in accordance with the manufacturer's instructions.

(8) The proper shield, fixture, adapter, or accessory, suited for the application, as recommended and supplied by the manufacturer, shall be used.

(9) Only those types of fasteners and power loads recommended by the tool manufacturer shall be used.

(10) Before fastening into any questionable material, the operator shall determine its suitability by using a fastener as a center punch. If the fastener point does not easily penetrate, is not blunted, and does not fracture the material, initial test fastenings shall then be made in accordance with the tool manufacturer's recommendations. (See WAC 296-24-66315(3).)

(11) No tool shall be loaded unless it is being prepared for immediate use. If the work is interrupted after loading, the tool shall be unloaded at once.

(12) Powder actuated magazine or clip-fed tools are not considered loaded unless a power load is actually in the ram (firing chamber), even though the magazine or clip is inserted in the tool. If work is interrupted, the firing chamber shall be cleared and the magazine or clip removed.

(13) Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any person; hands shall be kept clear of the open barrel end.

(14) The tool shall always be held perpendicular to the work surface when fastening into any material, except for specific applications recommended by the tool manufacturer.

(15) In the event of a misfire, the operator shall hold the tool firmly against the work surface for a period of thirty seconds and then follow the explicit instructions set forth in the manufacturer's instructions.

(16) Power loads of different power levels and types shall be kept in separate compartments or containers.

(17) A sign, at least 20 x 25 cm (8 x 10 in), using boldface type no less than 2.5 cm (1 in) in height, shall be posted in plain sight on all construction projects where tools are used. The sign shall bear wording similar to the following: "POWDER ACTUATED TOOL IN USE."

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-66313, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66313, filed 7/31/79.]

WAC 296-24-66315 Limitations of use. (1) The tool shall not be used in an explosive or flammable atmosphere.

(2) A tool shall never be left unattended in a place where it would be available to unauthorized persons.

(3) Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, hardened steel, glass block, natural rock, hollow tile, or most brick. (See WAC 296-24-66313(10).)

(4) Fasteners shall not be driven into easily penetrated or thin materials, or materials of questionable resistance, unless backed by a material that will prevent the fastener from passing completely through the other side.

(5) Fasteners shall not be driven closer than 13 mm (1/2 in) from the edge of steel except for specific applications recommended by the tool manufacturer.

(6) Fasteners shall not be driven closer than 7.5 cm (3 in) from the unsupported edge of masonry materials except for specific applications recommended by the tool manufacturer.

(7) Fasteners shall not be driven into concrete unless material thickness is at least three times the fastener shank penetration.

(8) Fasteners shall not be driven into any spalled area.

(9) Fasteners shall not be driven through existing holes unless a specific guide means, as recommended and supplied by the tool manufacturer, is used to ensure positive alignment.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66315, filed 7/31/79.]

WAC 296-24-66317 Maintenance and storage. (1) The tool shall be serviced and inspected for worn or damaged parts at regular intervals as recommended by the tool manufacturer. Prior to the tool being put back into use, all worn or damaged parts shall be replaced by a qualified person using only parts supplied by the tool manufacturer. A record of this inspection shall be noted and dated on the tool inspection record.

(2) Instruction manuals, maintenance tools, and accessories supplied with the tool shall be stored in the tool container when not in use.

(3) Powder actuated tools and power loads shall be locked in a container and stored in a safe place when not in use and shall be accessible only to authorized personnel.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66317, filed 7/31/79.]

WAC 296-24-66319 Authorized instructor. (1) Only persons trained and authorized by the tool manufacturer or by an authorized representative of the tool manufacturer shall be qualified to instruct and qualify operators for the manufacturer's powder actuated tools.

(2) All authorized instructors shall have read and be familiar with this standard, and shall be capable of:

(a) Disassembling, servicing, and reassembling the tool.

(b) Recognizing any worn or damaged parts or defective operation.

(c) Recognizing and clearly identifying the colors used to identify power load levels.

(d) Using the tool correctly within the limitations of its use.

(e) Training and testing operators prior to issuing a qualified operator's card.

(3) All authorized instructors shall have in their possession a valid authorized instructor's card issued and signed by an authorized representative of the manufacturer. The card shall be wallet size of approximately 6 x 9 cm (2-1/2 x 3-1/2

in), and the face of the card shall bear text similar to that shown in Figure P-1.

(4) A list of all instructors authorized by the manufacturer to instruct and qualify operators shall be maintained by the tool manufacturer and be made available to the department of labor and industries upon request.

(5) An instructor's card may be revoked by the authorizing agent or the department of labor and industries, if they are known to have issued a qualified operator's card in violation of any regulation contained in this standard. When an instructor is no longer authorized to issue qualified operator's cards, they shall surrender their card to the authorizing agent or the department of labor and industries.

AUTHORIZED INSTRUCTOR

. . . . . Powder Actuated Tools Date . . . . . .
(MAKE)
Card No. . . . . Social Security No. . . . . .
This certifies that . . . . . .
(NAME OF INSTRUCTOR)
has received the prescribed training in the operation and maintenance of powder actuated tools manufactured by
. . . . . and is qualified
(NAME OF MANUFACTURER)
to train and certify operators of . . . . . .
(MAKE)
powder actuated tools.
Model(s) . . . . . .
Authorized by . . . . . .
I have received instruction by the manufacturer's authorized representative in the training of operators of the above tools and agree to conform to all rules and regulations governing the instruction of tool operators.
Date of Birth . . . . . .

. . . . . .
(SIGNATURE)

Figure P-1
Sample of Authorized Instructor's Card

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-66319, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66319, filed 7/31/79.]

WAC 296-24-66321 Qualified operator. (1) The operator shall be trained by an authorized instructor to be familiar with the provisions of this standard and the instructions provided by the manufacturer for operation and maintenance. The operator shall also be capable of:

(a) Reading and understanding the manufacturer's instruction manual.

(b) Cleaning the tool correctly.

(c) Recognizing any worn or damaged parts or defective operation.

(d) Recognizing the number-color code system used in this standard to identify power load levels. In the event the operator is unable to distinguish the colors used, the operator shall be given special instruction which will enable the operator to avoid error.

(e) Using a tool correctly within the limitations of its use and demonstrate competence by operating the tool in the presence of the instructor.

(2) After training, the operator shall, substantiate competency, by satisfactorily completing a written examination provided by the manufacturer of the tool.

(a) The operator's written examination shall consist of questions to establish the operator's competence with respect to:

(i) The requirements of this standard;

(ii) The powder actuated fastening system; and

(iii) The specific details of operation and maintenance of the tool(s) involved.

(b) The examination shall provide a statement, attested to by the instructor, that the applicant can (or cannot) readily distinguish the colors used to identify power load levels (see WAC 296-24-66309).

(3) Each applicant who meets the requirements as set forth in subsections (1) and (2) of this section shall receive a qualified operator's card, issued and signed by both the instructor and applicant. While using the tool, the operator shall carry this card.

(4) The qualified operator's card supplied by the manufacturer shall be wallet size of approximately 6 x 9 cm (2-1/2 x 3-1/2 in), and the face of the card shall bear text similar to that shown in Figure P-2.

(5) There shall be printed on the card a notation reading:

"Revocation of card - failure to comply with any of the rules and regulations for safe operation of powder actuated fastening tools shall be cause for the immediate revocation of this card."

QUALIFIED OPERATOR

. . . . . Powder Actuated Tools Date . . . . . .
(MAKE)
Card No. . . . . Social Security No. . . . . .
This certifies that . . . . . .
(NAME OF OPERATOR)
has received the prescribed training in the operation of powder actuated tools manufactured by
. . . . . .
(NAME OF MANUFACTURER)
Model(s) . . . . . .
Trained and issued by
. . . . . .
(SIGNATURE OF AUTHORIZED INSTRUCTOR)
I have received instruction in the safe operation and maintenance of powder actuated fastening tools of the makes and models specified and agree to conform to all rules and regulations governing that use
Date of Birth . . . . . .

. . . . . .
(SIGNATURE)

Figure P-2
Sample of Qualified Operator's Card

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-66321, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66321, filed 7/31/79.]

WAC 296-24-665 Power lawnmowers.

[Order 73-5, § 296-24-665, filed 5/9/73 and Order 73-4, § 296-24-665, filed 5/7/73.]

WAC 296-24-66501 Terms. (1) Blade tip circle. The path described by the outermost point of the blade as it is rotated about its shaft axis.

(2) Guards. A part or an assembly provided for shielding a hazardous area of a machine.

(3) Catcher assemblies. Parts or combinations of parts which provide a means for collecting grass clippings or debris.

(4) Walk-behind mower. A mower either pushed or self-propelled and normally guided by the operator walking behind the unit.

(5) Operator area, walk-behind mowers. For discharge interference purposes, that area confined within a circle no smaller than 30 inches in diameter, the center of which is located to the rear of the mower on its longitudinal centerline 30 inches behind the nearest blade tip circle.

(6) Power reel mower. A lawn-cutting machine utilizing a power source to rotate one or more helically formed blades about a horizontal axis to provide a shearing action with a stationary cutter bar or bed knife.

(7) Power rotary mower. A lawn-cutting machine utilizing a power source to rotate one or more cutting blades about a vertical axis.

(8) Lowest blade position. The lowest blade position under static conditions.

(9) Riding mower. A powered, self-propelled lawn-cutting vehicle on which the operator rides and controls the machine.

(10) Sulky type mower. Normally, a walk-behind mower which has been converted to a riding mower by the addition of a sulky.

(11) Deadman control. A control designed so that it will automatically interrupt power to a drive when the operator's actuating force is removed.

[Order 73-5, § 296-24-66501, filed 5/9/73 and Order 73-4, § 296-24-66501, filed 5/7/73.]

WAC 296-24-66503 General requirements. (1) Power lawnmowers of the walk-behind, riding-rotary types, and reel power lawnmowers designed for use by employees shall meet the design specifications in "American National Standard Safety Specifications for Power Lawnmowers" ANSI B71.1-1968. These specifications do not apply to sulky-type mowers, flail mowers, sickle-bar mowers, or mowers designed for commercial use.

(2) All power-driven chains, belts, and gears shall be so positioned or otherwise guarded to prevent the operator's accidental contact therewith, during normal starting, mounting, and operation of the machine.

(3) A shutoff device shall be provided to stop operation of the motor or engine. This device shall require manual and intentional reactivation to restart the motor or engine.

(4) All positions of the operating controls shall be clearly identified.

(5) The words, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording shall be clearly visible at an engine starting control point on self-propelled mowers.

[Order 76-6, § 296-24-66503, filed 3/1/76; Order 73-5, § 296-24-66503, filed 5/9/73 and Order 73-4, § 296-24-66503, filed 5/7/73.]

WAC 296-24-66505 Walk-behind and riding rotary mowers. (1) The mower blade shall be enclosed except on the bottom and the enclosure shall extend to or below the lowest cutting point of the blade in the lowest blade position.

(2) Guards which must be removed to install a catcher assembly shall comply with the following:

(a) Warning instructions shall be affixed to the mower near the opening stating that the mower shall not be used without either the catcher assembly or the guard in place.

(b) The catcher assembly or the guard shall be shipped and sold as part of the mower.

(c) The instruction manual shall state that the mower shall not be used without either the catcher assembly or the guard in place.

(d) The catcher assembly, when properly and completely installed, shall not create a condition which violates the limits given for the guarded opening.

(3) Openings in the blade enclosure, intended for the discharge of grass, shall be limited to a maximum vertical angle of the opening of 30°. Measurements shall be taken from the lowest blade position.

(4) The total effective opening area of the grass discharge opening(s) shall not exceed 1,000 square degrees on units having a width of cut less than 27 1/2 inches, or 2,000 square degrees on units having a width of cut 27 1/2 inches or over.

(5) The word "caution" or stronger wording, shall be placed on the mower at or near each discharge opening.

(6) Blade(s) shall stop rotating from the manufacturer's specified maximum speed within 15 seconds after declutching, or shutting off power.

(7) In a multipiece blade, the means of fastening the cutting members to the body of the blade or disc shall be so designed that they will not become worn to a hazardous condition before the cutting members themselves are worn beyond use.

(8) The maximum tip speed of any blade shall be 19,000 feet per minute.

[Order 74-27, § 296-24-66505, filed 5/7/74; Order 73-5, § 296-24-66505, filed 5/9/73 and Order 73-4, § 296-24-66505, filed 5/7/73.]

WAC 296-24-66507 Walk-behind rotary mowers. (1) The horizontal angle of the opening(s) in the blade enclosure, intended for the discharge of grass, shall not contact the operator area.

(2) There shall be one of the following at all openings in the blade enclosure intended for the discharge of grass:

(a) A minimum unobstructed horizontal distance of 3 inches from the end of the discharge chute to the blade tip circle.

(b) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar shall be no higher than the bottom edge of the blade enclosure.

(3) The highest point(s) on the front of the blade enclosure, except discharge openings, shall be such that any line

extending a maximum of 15° downward from the horizontal toward the blade shaft axis (axes) shall not intersect the horizontal plane within the blade tip circle. The highest point(s) on the blade enclosure front, except discharge-openings, shall not exceed 1 and 1/4 inches above the lowest cutting point of the blade in the lowest blade position. Mowers with a swingover handle are to be considered as having no front in the blade enclosure and therefore shall comply with WAC 296-24-66505(1).

(4) The mower handle shall be fastened to the mower so as to prevent loss of control by unintentional uncoupling while in operation.

(5) A positive upstop or latch shall be provided for the mower handle in the normal operating position(s). The upstop shall not be subject to unintentional disengagement during normal operation of the mower. The upstop or latch shall not allow the center or the handle grips to come closer than 17 inches horizontally behind the closest path of the mower blade(s) unless manually disengaged.

(6) A swing-over handle, which complies with the above requirements, will be permitted.

(7) Wheel drive disengaging controls, except deadman controls, shall move opposite to the direction of the vehicle motion in order to disengage the drive. Deadman controls shall comply with WAC 296-24-66501(11) and may operate in any direction to disengage the drive.

[Order 74-27, § 296-24-66507, filed 5/7/74; Order 73-5, § 296-24-66507, filed 5/9/73 and Order 73-4, § 296-24-66507, filed 5/7/73.]

WAC 296-24-66509 Riding rotary mowers. (1) The highest point(s) of all openings in the blade enclosure, front shall be limited by a vertical angle of opening of 15° and a maximum distance of 1 1/4 inches above the lowest cutting point of the blade in the lowest blade position.

(2) Opening(s) shall be placed so that grass or debris will not discharge directly toward any part of an operator seated in a normal operator position.

(3) There shall be one of the following at all openings in the blade enclosure intended for the discharge of grass:

(a) A minimum unobstructed horizontal distance of 6 inches from the end of the discharge chute to the blade tip circle.

(b) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar shall be no higher than the bottom edge of the blade enclosure.

(4) Mowers shall be provided with stops to prevent jackknifing or locking of the steering mechanism.

(5) Vehicle stopping means shall be provided.

(6) Hand-operated wheel drive disengaging controls shall move opposite to the direction of vehicle motion in order to disengage the drive. Foot-operated wheel drive disengaging controls shall be depressed to disengage the drive. Deadman controls, both hand and foot operated, shall comply with WAC 296-24-66501(11) and may operate in any direction to disengage the drive.

[Order 74-27, § 296-24-66509, filed 5/7/74; Order 73-5, § 296-24-66509, filed 5/9/73 and Order 73-4, § 296-24-66509, filed 5/7/73.]

WAC 296-24-670 Jacks.

[Order 73-5, § 296-24-670, filed 5/9/73 and Order 73-4, § 296-24-670, filed 5/7/73.]

WAC 296-24-67001 Jack terms. (1) Jack. A jack is an appliance for lifting and lowering or moving horizontally a load by application of a pushing force.

Note: Jacks may be of the following types: Lever and ratchet, screw and hydraulic.

(2) Rating. The rating of a jack is the maximum working load for which it is designed to lift safely that load throughout its specified amount of travel.

Note: To raise the rated load of a jack, the point of application of the load, the applied force, and the length of lever arm should be those designated by the manufacturer for the particular jack considered.

[Order 73-5, § 296-24-67001, filed 5/9/73 and Order 73-4, § 296-24-67001, filed 5/7/73.]

WAC 296-24-67003 Loading and marking. (1) The operator shall make sure that the jack used has a rating sufficient to lift and sustain the load.

(2) The rated load shall be legibly and permanently marked in a prominent location on the jack by casting, stamping, or other suitable means.

[Order 73-5, § 296-24-67003, filed 5/9/73 and Order 73-4, § 296-24-67003, filed 5/7/73.]

WAC 296-24-67005 Operation and maintenance. (1) In the absence of a firm foundation, the base of the jack shall be blocked. If there is a possibility of slippage of the cap, a block shall be placed in between the cap and the load.

(2) The operator shall watch the stop indicator, which shall be kept clean, in order to determine the limit of travel. The indicated limit shall not be overrun.

(3) After the load has been raised, it shall immediately be cribbed, blocked, or otherwise secured.

(4) Hydraulic jacks exposed to freezing temperatures shall be supplied with an adequate antifreeze liquid.

(5) All jacks shall be properly lubricated at regular intervals. The lubricating instructions of the manufacturer should be followed, and only lubricants recommended by the manufacturer should be used.

(6) Each jack shall be thoroughly inspected at times which depend upon the service conditions. Inspections shall be not less frequent than the following:

(a) For constant or intermittent use at one locality, once every 6 months,

(b) For jacks sent out of shop for special work, when sent out and when returned,

(c) For a jack subjected to abnormal load or shock, immediately before and immediately thereafter.

(7) Repair or replacement parts shall be examined for possible defects.

(8) Jacks which are out of order shall be tagged accordingly, and shall not be used until repairs are made.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-67005, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-67005, filed 5/9/73 and Order 73-4, § 296-24-67005, filed 5/7/73.]

PART H-2
SAFE PRACTICES OF ABRASIVE BLASTING OPERATIONS, VENTILATION

Abrasive blasting operations

WAC 296-24-675 Safe practices of abrasive blasting operations.

[Order 73-5, § 296-24-675, filed 5/9/73 and Order 73-4, § 296-24-675, filed 5/7/73.]

WAC 296-24-67501 Purpose. The safety and health standards of this section are intended to protect health and to prevent injury to personnel engaged in abrasive blasting operations and to others working in the vicinity by:

(1) Control of dusts which are dispersed during abrasive blasting.

(2) Provision of an adequate amount of clean air to personnel.

(3) Protection of personnel from injury from flying particles or from moving equipment.

[Order 73-5, § 296-24-67501, filed 5/9/73 and Order 73-4, § 296-24-67501, filed 5/7/73.]

WAC 296-24-67503 Application. This standard applies to all operations where an abrasive is forcibly applied to a surface by pneumatic or hydraulic pressure or by centrifugal force. It does not apply to steam blasting, or steam cleaning, or hydraulic cleaning methods where this work is done without the aid of abrasives.

[Order 73-5, § 296-24-67503, filed 5/9/73 and Order 73-4, § 296-24-67503, filed 5/7/73.]

WAC 296-24-67505 Selection of abrasives and equipment. Each type of abrasive and each type of equipment has its particular advantages in producing the quality of work desired, and the selection will depend on the specific requirements of the user. Therefore, no rule or suggestion can be given in this standard for the selection of a particular abrasive or of particular equipment. With properly designed equipment and proper operation and maintenance all types of abrasives and equipment can be used safely. However, abrasives which create the minimum hazard should be used wherever feasible.

[Order 73-5, § 296-24-67505, filed 5/9/73 and Order 73-4, § 296-24-67505, filed 5/7/73.]

WAC 296-24-67507 Definitions. (1) Abrasive. A solid substance used in an abrasive blasting operation.

(2) Abrasive blasting. The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

(3) Abrasive-blasting respirator. A continuous flow airline respirator constructed so that it will cover the wearer's head, neck, and shoulders and provide protection from rebounding abrasive.

(4) Air-line respirator. A device consisting of a facepiece, helmet, or hood to which clean air is supplied to the wearer through a small-diameter hose from a source not on the wearer's body.

(5) Blast cleaning barrel. A complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts to the action of an automatic blast spray.

(6) Blast cleaning room. A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.

(7) Blasting cabinet. An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.

(8) Clean air. Air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.

(9) Dust collector. A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.

(10) Exhaust ventilation system. A system for removing contaminated air from a space, comprising two or more of the elements; (a) enclosure or hood, (b) duct work, (c) dust collecting equipment, (d) exhauster, and (e) discharge stack.

(11) Particulate-filter respirator. An air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.

(12) Respirable dust. Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.

(13) Rotary blast cleaning table. An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-67507, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-67507, filed 5/9/73 and Order 73-4, § 296-24-67507, filed 5/7/73.]

WAC 296-24-67509 Dust hazards from abrasive blasting. (1) Dust sources. Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

(2) Types of abrasives. A large variety of solid materials may be used as abrasives, with qualities varying from hard deep-cutting to soft polishing. These include; (a) mineral grains, either synthetic or natural, (b) metallic shot or grit, generally of steel or chilled cast iron, and (c) organic abrasives, such as ground corncobs or walnut shells.

Silica sand is the most hazardous mineral abrasive commonly used and its use should be limited wherever possible.

The potential hazard from steel or iron dust is considered to be minimal.

Readily combustible organic abrasives may be pulverized fine enough to be capable of forming explosive mixtures with air.

(3) Types of coatings. A surface coating formed during the fabrication of a part, or a protective coating applied after fabrication, will be removed and dispersed as a dust by abrasive blasting. The type of coating should be known to make a proper evaluation of the potential hazard.

(a) Silica sand is frequently imbedded in the surface of castings and may be pulverized by blast cleaning.

(b) Coatings containing toxic metals will add to the potential seriousness of the dust exposures. Examples of such coatings are anti-fouling paints containing mercury, lead paints on structural steel, cadmium plating, and lead deposits on pistons of internal combustion engines.

(c) Plastic or resin coatings may be decomposed by the action of the abrasives to form irritating by-products.

(4) Wet abrasive blasting. Wet methods will tend to keep dust exposures minimal, but droplets dispersed and dried residues which become airborne may create potential exposures.

(5) Concentrations of contaminants. The concentration of respirable dust or fumes in the breathing zone of the abrasive-blasting operator or any other worker shall be kept below the levels recommended by chapter 296-62 WAC.

(6) Use of combustible abrasives. Organic abrasives which are combustible shall be used only in automatic systems because the fine dust produced presents a potential fire and explosion hazard.

(a) Where flammable or explosive dust mixtures may be present, the construction of the equipment, including the exhaust system and all electric wiring shall conform to the requirements of American National Standard Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z 33.1-1961 (NFPA 91-1961; NBFU 91-1961), and chapter 296-24 WAC Part L. The blast nozzle shall be bonded and grounded to prevent the buildup of static charges.

(b) Where flammable or explosive dust mixtures may be present, the abrasive blasting enclosure, the ducts, and the dust collector shall be constructed with loose panels or explosion venting areas, located on sides away from any occupied area, to provide for pressure relief in case of explosion, following the principles set forth in the National Fire Protection Association Explosion Venting Guide, NFPA 68-1954.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-67509, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-67509, filed 5/9/73 and Order 73-4, § 296-24-67509, filed 5/7/73.]

WAC 296-24-67511 Blast cleaning enclosures. (1) Blast cleaning enclosures. These include rotary blast cleaning tables, blast cleaning barrels and drums, abrasive blasting cabinets, blast cleaning rooms, abrasive separators, and similar enclosures.

(2) Ventilation. Blast cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation. (See WAC 296-24-677.)

(3) All air inlets and access openings shall be baffled or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles into an adjacent work area will be minimized, not to exceed the allowable threshold limits as specified in occupational health standards, chapter 296-62 WAC.

(4) The rate of exhaust shall be sufficient to provide prompt clearance of the dust-laden air within the enclosure after the cessation of blasting.

(5) Before the enclosure is opened, the blast shall be turned off and the exhaust system shall be run for a sufficient period of time to remove the airborne dust particles within the enclosure.

(6) Observation window. Safety glass protected by screening shall be used in observation windows, where hard deep-cutting abrasives are used.

(7) Access openings. Slit abrasive-resistant baffles shall be installed in multiple sets at all small access openings where dust might escape, and shall be inspected regularly and replaced when needed.

(8) Doors shall be flanged and tight when closed.

[Order 73-5, § 296-24-67511, filed 5/9/73 and Order 73-4, § 296-24-67511, filed 5/7/73.]

WAC 296-24-67513 Exhaust ventilation systems. (1) Exhaust systems. The construction, installation, inspection, and maintenance of exhaust systems shall conform to the principles and requirements set forth in chapter 296-62 WAC.

(2) When dust leaks are noted, repairs shall be made.

(3) The static pressure drop at the exhaust ducts leading from the equipment shall be checked when the installation is completed and periodically thereafter to assure continued satisfactory operation. Whenever an appreciable change in the pressure drop indicates a partial blockage, the system shall be cleaned and returned to normal operating conditions.

(4) Abrasive separator. In installations where the abrasive is recirculated, the exhaust ventilation system for the blasting enclosure shall not be relied upon for the removal of fines from the spent abrasive instead of an abrasive separator. An abrasive separator shall be provided for the purpose.

(5) Dust collecting equipment. The air exhausted from blast cleaning equipment shall be discharged through dust collecting equipment.

(6) Dust collectors shall be set up so that the accumulated dust can be emptied and removed without contaminating other working areas.

Note: Disposal of waste. The fine dust from dry collectors should be emptied into and transported in enclosed containers to prevent dispersal of the fines, or discharged into a sluice with some method to assure wetting of the dust.

[Order 73-5, § 296-24-67513, filed 5/9/73 and Order 73-4, § 296-24-67513, filed 5/7/73.]

WAC 296-24-67515 Personal protective equipment. (1) Abrasive-blasting respirators. Abrasive-blasting respirators shall be worn by all abrasive-blasting operators (a) when working inside of blast cleaning rooms, or (b) when using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure, or (c) where concentrations of toxic dusts dispersed by the abrasive blasting may exceed the limits set in chapter 296-62 WAC.

(2) Particulate-filter respirators.

(a) Particulate-filter respirators, commonly referred to as dust-filter respirators, properly fitted, may be used for short, intermittent, or occasional dust exposures such as clean-up, dumping of dust collectors, or unloading shipments of sand at a receiving point, when it is not feasible to control the

dust by enclosure, exhaust ventilation, or other means. Respirators used shall be approved for protection against the specific type of dust encountered.

(b) Dust-filter respirators shall not be used for continuous protection where silica sand is used as the blasting abrasive, or toxic materials are blasted.

(3) Personal protective clothing. Operators shall be equipped with heavy canvas or leather gloves and aprons or equivalent protection to protect them from the impact of abrasives. Safety shoes shall be worn where there is a hazard of foot injury.

(4) Personal protective clothing, equipment and their use shall comply with the provisions of chapter 296-24 WAC, Part A2.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-67515, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-67515, filed 5/9/73 and Order 73-4, § 296-24-67515, filed 5/7/73.]

WAC 296-24-67517 Air supply and air compressors. (1) Clean air supply. The air for abrasive-blasting respirators shall be free of harmful quantities of dusts, mists, or noxious gases, and shall meet the requirements for air purity set forth in American National Standard Z 9.2-1960.

Note: It is preferable to provide air for an abrasive-blasting respirator by means of low pressure blowers or compressors, which do not require internal organic lubricants and which are used solely for that purpose.

(a) When air from the regular compressed air line of the plant is used for the abrasive-blasting respirator the following shall be complied with: A trap and carbon filter will be installed and regularly maintained, to remove oil, water, scale, and odor; a pressure reducing diaphragm or valve will be installed to reduce the pressure down to requirements of the particular type of abrasive-blasting respirator; and an automatic control will be provided to either sound an alarm or shut down the compressor in case of over-heating.

[Order 73-5, § 296-24-67517, filed 5/9/73 and Order 73-4, § 296-24-67517, filed 5/7/73.]

WAC 296-24-67519 Operational procedures and general safety. (1) Housekeeping. Dusts shall not be permitted to accumulate on the floor or on ledges outside of an abrasive blasting enclosure, and dust spills shall be cleaned up promptly, preferable by vacuum cleaning.

Note: Removal of dust accumulations from ledges and other dust catching surfaces should be done with a vacuum cleaner during a time when the plant is not in operation. The cleaning operator should wear a respirator approved for the existing conditions.

(a) Aisles and walkways shall be kept clear of steel shot or similar abrasive which may create a slipping hazard.

Note: Pressurized tanks for abrasive supply. If a pressurized tank is used for an abrasive supply, it should be tied in with the manual control of the nozzle mentioned in WAC 296-24-65719(2) and the relief valve or opening on the tank should be located so as to be safely vented.

(2) Nozzles. Blast cleaning nozzle shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.

(3) Tempered air. If taken directly from the outside of the building, the air entering a blast cleaning room through the air supply inlets should be tempered during cold weather.

[Order 73-5, § 296-24-67519, filed 5/9/73 and Order 73-4, § 296-24-67519, filed 5/7/73.]

WAC 296-24-677 Ventilation.

[Order 73-5, § 296-24-677, filed 5/9/73 and Order 73-4, § 296-24-677, filed 5/7/73.]

WAC 296-24-67701 Scope. The applicable minimum requirements as specified in chapter 296-62 WAC relating to ventilation and the following rules shall be complied with:

(1) Blast cleaning enclosures. Blast cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation.

(2) Inlet baffled. Because of the wide variety of conditions, it is not possible to set rigid standards for rates of exhaust or for control velocities that will be suited to all types of enclosures and all types of work. In general, the use of free silica abrasives and the generation of toxic dusts in abrasive blasting require higher control velocities. With well designed equipment and excellent labyrinth baffling at openings it is possible to prevent the escape of abrasives and dust with lower control velocities.

(3) Air velocities. The performance of the equipment will be the final criterion and the exhaust ventilation must (a) keep the escape of dust from the enclosure to a minimum, (b) maintain a reasonable visibility in blast cleaning rooms and cabinets, and (c) provide for rapid clearance of the dust laden air within the enclosure to permit the enclosure to be opened. Experience has indicated control velocities that are needed to minimize the escape of dust from enclosures and these are given in the following subsections.

(4) Blast cleaning cabinet. The recommended inward air velocity at the hand openings is a minimum of 500 fpm calculated on the free opening without the curtains. The high control velocity is needed because the operator's working position is close to the openings.

(5) Rotary blast cleaning tables. The access openings should be baffled with multiple slit-baffle curtains. The recommended inward air velocity at the access opening is 200 to 250 fpm calculated on the free opening without the curtains.

(6) Blast cleaning rooms. In blast cleaning rooms, the air inlets must be well baffled to prevent the escape of abrasive and the recommended inward air velocity at the air inlets is a minimum of 300 feet per minute.

(7) Abrasive separators, bucket elevators, and other accessory abrasive handling systems. The recommended inward air velocity at all openings is 200 to 250 fpm.

[Order 73-5, § 296-24-67701, filed 5/9/73 and Order 73-4, § 296-24-67701, filed 5/7/73.]

PART I
WELDING, CUTTING AND BRAZING

WAC 296-24-680 Welding, cutting, and brazing.

[Order 73-5, § 296-24-680, filed 5/9/73 and Order 73-4, § 296-24-680, filed 5/7/73.]

WAC 296-24-68001 Definitions. (1) "Welder" and "welding operator" mean any operator of electric or gas welding and cutting equipment.

(2) "Approved" means listed or approved by a nationally recognized testing laboratory. Refer to WAC 296-24-58501(19) for definitions of listed and approved, and federal regulation 29 CFR 1910.7 for nationally recognized testing laboratory.

(3) All other welding terms are used in accordance with American Welding Society-Terms and Definitions-A3.0-1969.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-68001, filed 11/14/88; Order 73-5, § 296-24-68001, filed 5/9/73 and Order 73-4, § 296-24-68001, filed 5/7/73.]

WAC 296-24-682 Installation and operation of oxygen fuel gas systems for welding and cutting.

[Order 73-5, § 296-24-682, filed 5/9/73 and Order 73-4, § 296-24-682, filed 5/7/73.]

WAC 296-24-68201 General requirements. (1) Flammable mixture. Mixtures of fuel gases and air or oxygen may be explosive and shall be guarded against. No device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption, except at the burner or in a standard torch, shall be allowed unless approved for the purpose.

(2) Maximum pressure. Under no condition shall acetylene be generated, piped (except in approved cylinder manifolds) or utilized at a pressure in excess of 15 p.s.i. gage pressure or 30 p.s.i. absolute pressure. (The 30 p.s.i. absolute pressure limit is intended to prevent unsafe use of acetylene in pressurized chambers such as caissons, underground excavations or tunnel construction.) This requirement does not apply to storage of acetylene dissolved in a suitable solvent in cylinders manufactured and maintained according to U.S. Department of Transportation requirements, or to acetylene for chemical use. The use of liquid acetylene shall be prohibited.

(3) Apparatus. Only approved apparatus such as torches, regulators or pressure-reducing valves, acetylene generators, and manifolds shall be used. Use of replacement tips will not nullify the "approved apparatus" status of a torch, if such replacement tips are made to the same specifications as the original tip of the torch at the time of approval by the nationally recognized testing laboratory, or if the use of such tips in conjunction with convertor/adaptors results in the same specifications as the original tip at the time of approval by the nationally recognized testing laboratory.

(4) Personnel. Workers in charge of the oxygen or fuel-gas supply equipment, including generators, and oxygen or fuel-gas distribution piping systems shall be instructed and judged competent by their employers for this important work before being left in charge. Rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems shall be readily available.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-68201, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-24-68201, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-68201, filed 5/9/73 and Order 73-4, § 296-24-68201, filed 5/7/73.]

WAC 296-24-68203 Cylinders and containers. (1) Approval and marking. All portable cylinders used for the storage and shipment of compressed gases shall be constructed and maintained in accordance with the regulations of the United States Department of Transportation, 49 CFR Parts 171-179.

(a) Compressed gas cylinders shall be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable. Whenever practical, the marking shall be located on the shoulder of the cylinder.

Note: This method conforms to the American National Standard Method for Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Z 48.1-1954.

(b) Compressed gas cylinders shall be equipped with connections complying with the American National Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI B 57.1-1965.

(c) All cylinders with a water weight capacity of over thirty pounds shall be equipped with means of connecting a valve protection cap or with a collar or recess to protect the valve.

(2) Storage of cylinders - general.

(a) Cylinders shall be kept away from radiators and other sources of heat.

(b) Inside of buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location, at least twenty feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.

(c) Empty cylinders shall have their valves closed.

(d) Valve protection caps, where cylinder is designed to accept a cap, shall always be in place, hand-tight, except when cylinders are in use or connected for use.

(3) Fuel-gas cylinder storage. Inside a building, cylinders, except those in actual use or attached ready for use, shall be limited to a total gas capacity of two thousand cubic feet or three hundred pounds of liquefied petroleum gas.

(a) For storage in excess of two thousand cubic feet total gas capacity of cylinders or three hundred pounds of liquefied petroleum gas, a separate room or compartment conforming to the requirements specified in WAC 296-24-68211 (6)(h) and (i) shall be provided, or cylinders shall be kept outside or in a special building. Special buildings, rooms or compartments shall have no open flame for heating or lighting and shall be well ventilated. They may also be used for storage of calcium carbide in quantities not to exceed six hundred pounds, when contained in metal containers complying with WAC 296-24-68213 (1)(a) and (b). Signs should be conspicuously posted in such rooms

reading, "Danger—No smoking, matches or open lights," or other equivalent wording.

(b) Acetylene cylinders shall be stored valve end up.

(4) Oxygen storage.

(a) Oxygen cylinders shall not be stored near highly combustible material, especially oil and grease; or near reserve stocks of carbide and acetylene or other fuel-gas cylinders, or near any other substance likely to cause or accelerate fire; or in an acetylene generator compartment.

(b) Oxygen cylinders stored in outside generator houses shall be separated from the generator or carbide storage rooms by a noncombustible partition having a fire-resistance rating of at least one hour. This partition shall be without openings and shall be gastight.

(c) Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of twenty feet or by a noncombustible barrier at least five feet high having a fire-resistance rating of at least one-half hour. (Cylinders "in-use," secured to a hand truck or structural member, with regulators, hoses, and torch temporarily removed for security purposes overnight or weekends, are not considered "in-storage.")

(d) Where a liquid oxygen system is to be used to supply gaseous oxygen for welding or cutting and the system has a storage capacity of more than thirteen thousand cubic feet of oxygen (measured at 14.7 psi(a) and 70°F), connected in service or ready for service, or more than twenty-five thousand cubic feet of oxygen (measured at 14.7 psi(a) and 70°F), including unconnected reserves on hand at the site, it shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.

(5) Operating procedures.

(a) Cylinders, cylinder valves, couplings, regulators, hose, and apparatus shall be kept free from oily or greasy substances. Oxygen cylinders or apparatus shall not be handled with oily hands or gloves. A jet of oxygen must never be permitted to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

(b) When transporting cylinders by a crane or derrick, a cradle, boat, or suitable platform shall be used. Slings or electric magnets shall not be used for this purpose. Valve-protection caps, where cylinder is designed to accept a cap, shall always be in place.

(c) Cylinders shall not be dropped or struck or permitted to strike each other violently.

(d) Valve-protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed; the use of warm (not boiling) water is recommended. Valve-protection caps are designed to protect cylinder valves from damage.

(e) Unless cylinders are secured on a special truck, regulators shall be removed and valve-protection caps, when provided for, shall be put in place before cylinders are moved.

(f) Cylinders not having fixed hand wheels shall have keys, handles, or nonadjustable wrenches on valve stems while these cylinders are in service. In multiple cylinder installations only one key or handle is required for each manifold.

(g) Cylinder valves shall be closed before moving cylinders.

(h) Cylinder valves shall be closed when work is finished.

(i) Valves of empty cylinders shall be closed.

(j) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them, or fire-resistant shields shall be provided.

(k) Cylinders shall not be placed where they might become part of an electric circuit. Contacts with third rails, trolley wires, etc., shall be avoided. Cylinders shall be kept away from radiators, piping systems, layout tables, etc., that may be used for grounding electric circuits such as for arc welding machines. Any practice such as the tapping of an electrode against a cylinder to strike an arc shall be prohibited.

(l) Cylinders shall never be used as rollers or supports, whether full or empty.

(m) The numbers and markings stamped into cylinders shall not be tampered with.

(n) No person, other than the gas supplier, shall attempt to mix gases in a cylinder. No one, except the owner of the cylinder or the person authorized by the owner, shall refill a cylinder.

(o) No one shall tamper with safety devices in cylinders or valves.

(p) Cylinders shall not be dropped or otherwise roughly handled.

(q) Unless connected to a manifold, oxygen from a cylinder shall not be used without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, the valve shall be opened slightly for an instant and then closed. (Always stand to one side of the outlet when opening the cylinder valve.)

(r) A hammer or wrench shall not be used to open cylinder valves. If valves cannot be opened by hand, the supplier shall be notified.

(s) Cylinder valves shall not be tampered with nor should any attempt be made to repair them. If trouble is experienced, the supplier should be sent a report promptly indicating the character of the trouble and the cylinder's serial number. Supplier's instructions as to its disposition shall be followed.

(t) Complete removal of the stem from a diaphragm-type cylinder valve shall be avoided.

(u) Fuel-gas cylinders shall be placed with valve end up whenever they are in use. Liquefied gases shall be stored and shipped with the valve end up.

(v) Cylinders shall be handled carefully. Cylinders shall not be subjected to rough handling, knocks, or falls which are liable to damage the cylinder, valve or safety devices and cause leakage.

(w) Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. The valve shall be opened while standing to one side of the outlet; never in front of it. Fuel-gas cylinder valves shall not be cracked near other welding work or near sparks, flame, or other possible sources of ignition.

(x) Before a regulator is removed from a cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.

(y) Nothing shall be placed on top of an acetylene cylinder when in use which may damage the safety device or interfere with the quick closing of the valve.

(z) If cylinders are found to have leaky valves or fittings which cannot be stopped by closing of the valve, the cylinders shall be taken outdoors away from sources of ignition and slowly emptied.

(aa) A warning should be placed near cylinders having leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition. Such cylinders should be plainly tagged; the supplier should be promptly notified and instructions provided by the supplier shall be followed as to their return.

(bb) Safety devices shall not be tampered with.

(cc) Fuel-gas shall not be used from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(dd) The cylinder valve shall always be opened slowly.

(ee) An acetylene cylinder valve shall not be opened more than one and one-half turns of the spindle, and preferably no more than three-fourths of a turn.

(ff) Where a special wrench is required it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel-gas flow can be quickly turned off in case of emergency. In the case of manifolded or coupled cylinders at least one such wrench shall always be available for immediate use.

(gg) When cylinders are transported by powered vehicle they shall be secured in a vertical position.

(hh) A suitable cylinder truck, chain, or other steadying device shall be used to prevent cylinders from being knocked over while in use.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-68203, filed 1/10/91, effective 2/12/91; 88-11-021 (Order 88-04), § 296-24-68203, filed 5/11/88; Order 73-5, § 296-24-68203, filed 5/9/73 and Order 73-4, § 296-24-68203, filed 5/7/73.]

WAC 296-24-68205 Manifolding of cylinders. (1) Fuel-gas manifolds.

(a) Manifolds shall be approved either separately for each component part or as an assembled unit.

(b) Except as provided in (1)(c) of this section fuel-gas cylinders connected to one manifold inside a building shall be limited to a total capacity not exceeding 300 pounds of liquefied petroleum gas or 3,000 cubic feet of other fuel-gas. More than one such manifold with connected cylinders may be located in the same room provided the manifolds are at least 50 feet apart or separated by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(c) Fuel-gas cylinders connected to one manifold having an aggregate capacity exceeding 300 pounds of liquefied petroleum gas or 3,000 cubic feet of other fuel-gas shall be located outdoors, or in a separate building or room constructed in accordance with WAC 296-24-68211 (6)(h) and (i).

(d) Separate manifold buildings or rooms may also be used for the storage of drums of calcium carbide and cylinders containing fuel gases as provided in WAC 296-24-68203(3). Such buildings or rooms shall have no open flames for heating or lighting and shall be well-ventilated.

(e) High-pressure fuel-gas manifolds shall be provided with approved pressure regulating devices.

(2) High-pressure oxygen manifolds (for use with cylinders having a department of transportation service pressure above 200 p.s.i.g.).

(a) Manifolds shall be approved either separately for each component or as an assembled unit.

(b) Oxygen manifolds shall not be located in an acetylene generator room. Oxygen manifolds shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(c) Except as provided in WAC 296-24-68205 (2)(d) oxygen cylinders connected to one manifold shall be limited to a total gas capacity of 6,000 cubic feet. More than one such manifold with connected cylinders may be located in the same room provided the manifolds are at least 50 feet apart or separated by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(d) An oxygen manifold, to which cylinders having an aggregate capacity of more than 6,000 cubic feet of oxygen are connected, should be located outdoors or in a separate noncombustible building. Such a manifold, if located inside a building having other occupancy, shall be located in a separate room of noncombustible construction having a fire-resistance rating of at least one-half hour or in an area with no combustible material within 20 feet of the manifold.

(e) An oxygen manifold or oxygen bulk supply system which has storage capacity of more than 13,000 cubic feet of oxygen (measured at 14.7 p.s.i.a. and 70°F), connected in service or ready for service, or more than 25,000 cubic feet of oxygen (measured at 14.7 p.s.i.a. and 70°F), including unconnected reserves on hand at the site, shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.

(f) High-pressure oxygen manifolds shall be provided with approved pressure-regulating devices.

(3) Low-pressure oxygen manifolds (for use with cylinders having a department of transportation service pressure not exceeding 200 p.s.i.g.).

(a) Manifolds shall be of substantial construction suitable for use with oxygen at a pressure of 250 p.s.i.g. They shall have a minimum bursting pressure of 1,000 p.s.i.g. and shall be protected by a safety relief device which will relieve at a maximum pressure of 500 p.s.i.g.

Note: DOT-4L200 cylinders have safety devices which relieve at a maximum pressure of 250 p.s.i.g. (or 235 p.s.i.g. if vacuum insulation is used).

(b) Hose and hose connections subject to cylinder pressure shall comply with WAC 296-24-68209(5). Hose shall have a minimum bursting pressure of 1,000 p.s.i.g.

(c) The assembled manifold including leads shall be tested and proven gas-tight at a pressure of 300 p.s.i.g. The fluid used for testing oxygen manifolds shall be oil-free and not combustible.

(d) The location of manifolds shall comply with WAC 296-24-68205 (2)(b), (c), (d) and (e).

(e) The following sign shall be conspicuously posted at each manifold:

Low-Pressure Manifold
Do Not Connect High-Pressure Cylinders
Maximum Pressure—250 P.S.I.G.

(4) Portable outlet headers.

(a) Portable outlet headers shall not be used indoors except for temporary service where the conditions preclude a direct supply from outlets located on the service piping system.

(b) Each outlet on the service piping from which oxygen or fuel-gas is withdrawn to supply a portable outlet header shall be equipped with a readily accessible shutoff valve.

(c) Hose and hose connections used for connecting the portable outlet header to the service piping shall comply with WAC 296-24-68209(5).

(d) Master shutoff valves for both oxygen and fuel-gas shall be provided at the entry end of the portable outlet header.

(e) Portable outlet headers for fuel-gas service shall be provided with an approved hydraulic back-pressure valve installed at the inlet and preceding the service outlets, unless an approved pressure-reducing regulator, an approved backflow check valve, or an approved hydraulic back-pressure valve is installed at each outlet. Outlets provided on headers for oxygen service may be fitted for use with pressure-reducing regulators or for direct hose connection.

(f) Each service outlet on portable outlet headers shall be provided with a valve assembly that includes a detachable outlet seal cap, chained or otherwise attached to the body of the valve.

(g) Materials and fabrication procedures for portable outlet headers shall comply with WAC 296-24-68207 (1), (2) and (5).

(h) Portable outlet headers shall be provided with frames which will support the equipment securely in the correct operating position and protect them from damage during handling and operation.

(5) Manifold operating procedures.

(a) Cylinder manifolds shall be installed under the supervision of someone familiar with the proper practices with reference to their construction and use.

(b) All component parts used in the methods of manifolding described in (1)(a) through (e) of this section shall be approved as to materials, design and construction either separately or as an assembled unit.

(c) All manifolds and parts used in methods of manifolding shall be used only for the gas or gases for which they are approved.

(d) When acetylene cylinders are coupled, approved flash arresters shall be installed between each cylinder and the coupler block. For outdoor use only, and when the number of cylinders coupled does not exceed three, one flash arrester installed between the coupler block and regulator is acceptable.

(e) Each fuel-gas cylinder lead should be provided with a backflow check valve.

(f) The aggregate capacity of fuel-gas cylinders connected to a portable manifold inside a building shall not exceed 3,000 cubic feet of gas.

(g) Acetylene and liquefied fuel-gas cylinders shall be manifolded in a vertical position.

(h) The pressure in the gas cylinders connected to and discharged simultaneously through a common manifold shall be approximately equal.

[Order 73-5, § 296-24-68205, filed 5/9/73 and Order 73-4, § 296-24-68205, filed 5/7/73.]

WAC 296-24-68207 Service piping systems. (1) Materials and design. (a) Piping and fittings shall comply with Section 2, Industrial Gas and Air Piping Systems, of the American National Standard Code for Pressure Piping, ANSI B 31.1-1967, insofar as it does not conflict with WAC 296-24-68207 (1)(b) and (c).

(b) Pipe shall be at least Schedule 40 and fittings shall be at least standard weight in sizes up to and including 6-inch nominal.

(c) Copper tubing shall be Types K or L in accordance with the Standard Specification for Seamless Copper Water Tube, ASTM B88-66a.

(d) Piping shall be steel, wrought iron, brass or copper pipe, or seamless copper, brass or stainless steel tubing, except as provided in WAC 296-24-68207 (1)(e), (f), (g), (h) and (i).

(e) Oxygen piping and fittings at pressures in excess of 700 p.s.i.g., shall be stainless steel or copper alloys.

(f) Hose connections and hose complying with WAC 296-24-68209(5) may be used to connect the outlet of a manifold pressure regulator to piping providing the working pressure of the piping is 250 p.s.i.g. or less and the length of the hose does not exceed 5 feet. Hose shall have a minimum bursting pressure of 1,000 p.s.i.g.

(g) When oxygen is supplied to a service piping system from a low-pressure oxygen manifold without an intervening pressure regulating device, the piping system shall have a minimum design pressure of 250 p.s.i.g. A pressure regulating device shall be used at each station outlet when the connected equipment is for use at pressures less than 250 p.s.i.g.

(h) Piping for acetylene or acetylenic compounds shall be steel or wrought iron.

(i) Unalloyed copper shall not be used for acetylene or acetylenic compounds except in listed equipment.

(2) Piping joints.

(a) Joints in steel or wrought iron piping shall be welded, threaded or flanged. Fittings, such as ells, tees, couplings, and unions, may be rolled, forged or cast steel, maleable iron or nodular iron. Gray or white cast iron fittings are prohibited.

(b) Joints in brass or copper pipe shall be welded, brazed, threaded, or flanged. If of the socket type, they shall be brazed with silver-brazing alloy or similar high melting point (not less than 800°F) filler metal.

(c) Joints in seamless copper, brass, or stainless steel tubing shall be approved gas tubing fittings or the joints shall be brazed. If of the socket type, they shall be brazed with silver-brazing alloy or similar high melting point (not less than 800°F) filler metal.

(3) Installation.

(a) Distribution lines shall be installed and maintained in a safe operating condition.

(b) Piping located inside or outside of buildings may be placed above or below ground. All piping shall be run as directly as practicable, protected against physical damage, proper allowance being made for expansion and contraction, jarring and vibration. Pipe laid underground in earth shall be located below the frost line and protected against corrosion. After assembly, piping shall be thoroughly blown out with air or nitrogen to remove foreign materials. For oxygen piping, only oil-free air, oil-free nitrogen, or oil-free carbon dioxide shall be used.

(c) Only piping which has been welded or brazed shall be installed in tunnels, trenches or ducts. Shutoff valves shall be located outside such conduits. Oxygen piping may be placed in the same tunnel, trench or duct with fuel-gas pipelines, provided there is good natural or forced ventilation.

(d) Low points in piping carrying moist gas shall be drained into drip pots constructed so as to permit pumping or draining out the condensate at necessary intervals. Drain valves shall be installed for this purpose having outlets normally closed with screw caps or plugs. No open end valves or petcocks shall be used, except that in drips located out of doors, underground, and not readily accessible, valves may be used at such points if they are equipped with means to secure them in the closed position. Pipes leading to the surface of the ground shall be cased or jacketed where necessary to prevent loosening or breaking.

(e) Gas cocks or valves shall be provided for all buildings at points where they will be readily accessible for shutting off the gas supply to these buildings in any emergency. Underground valve boxes or manholes should be avoided wherever possible. There shall also be provided a shutoff valve in the discharge line from the generator, gas holder, manifold or other source of supply.

(f) Shutoff valves shall not be installed in safety relief lines in such a manner that the safety relief device can be rendered ineffective.

(g) Fittings and lengths of pipe shall be examined internally before assembly and, if necessary, freed from scale or dirt. Oxygen piping and fittings shall be washed out with a suitable solution which will effectively remove grease and dirt but will not react with oxygen.

Note: Hot water solutions of caustic soda or trisodium phosphate are effective cleaning agents for this purpose.

(h) Piping shall be thoroughly blown out after assembly to remove foreign materials. For oxygen piping, oil-free air, oil-free nitrogen, or oil-free carbon dioxide shall be used. For other piping, air or inert gas may be used.

(i) When flammable gas lines or other parts of equipment are being purged of air or gas, open lights or other sources of ignition shall not be permitted near uncapped openings.

(j) No welding or cutting shall be performed on an acetylene or oxygen pipeline, including the attachment of hangers or supports, until the line has been purged. Only oil-free air, oil-free nitrogen, or oil-free carbon dioxide shall be used to purge oxygen lines.

(4) Painting and signs.

(a) Underground pipe and tubing and outdoor ferrous pipe and tubing shall be covered or painted with a suitable material for protection against corrosion.

(b) Aboveground piping systems shall be marked in accordance with the American National Standard Scheme for the Identification of Piping Systems, ANSI A 13.1-1956.

(c) Station outlets shall be marked to indicate the name of the gas.

(5) Testing.

(a) Piping systems shall be tested and proved gastight at 1 1/2 times the maximum operating pressure, and shall be thoroughly purged of air before being placed in service. The material used for testing oxygen lines shall be oil free and noncombustible. Flames shall not be used to detect leaks.

(b) When flammable gas lines or other parts of equipment are being purged of air or gas, sources of ignition shall not be permitted near uncapped openings.

[Order 73-5, § 296-24-68207, filed 5/9/73 and Order 73-4, § 296-24-68207, filed 5/7/73.]

WAC 296-24-68209 Protective equipment, hose, and regulators. (1) General. Equipment shall be installed and used only in the service for which it is approved and as recommended by the manufacturer.

(2) Pressure relief devices. Service piping systems shall be protected by pressure relief devices set to function at not more than the design pressure of the systems and discharging upwards to a safe location.

(3) Piping protective equipment.

(a) The fuel-gas and oxygen piping systems, including portable outlet headers shall incorporate the protective equipment shown in Figures Q-1, Q-2, and Q-3.

When only a portion of a fuel-gas system is to be used with oxygen, only that portion need comply with (3)(a) of this section.

(b) Approved protective equipment (designated P_F in Figs. Q-1, Q-2, and Q-3) shall be installed in fuel-gas piping to prevent:

(i) Backflow of oxygen into the fuel-gas supply system;

(ii) Passage of a flash back into the fuel-gas supply system; and

(iii) Excessive back pressure of oxygen in the fuel-gas supply system. The three functions of the protective equipment may be combined in one device or may be provided by separate devices.

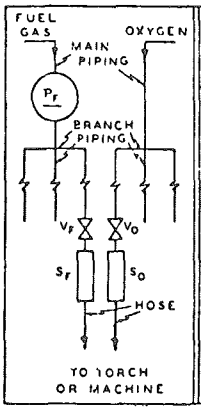


Fig. Q-1

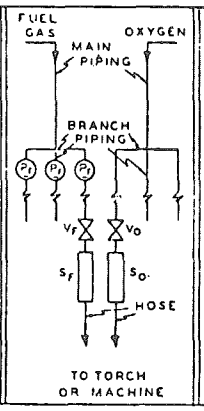


Fig. Q-2

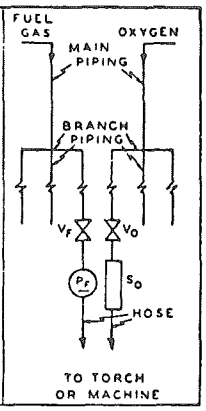


Fig. Q-3

LEGEND
P_F—Protective equipment in fuel gas piping
V_F—Fuel gas station outlet valve
V_O—Oxygen station outlet valve
S_F—Backflow prevention device(s) at fuel gas station outlet
S_O—Backflow prevention device(s) at oxygen station outlet

(c) The protective equipment shall be located in the main supply line, as in Figure Q-1 or at the head of each branch line, as in Figure Q-2 or at each location where fuel-gas is withdrawn, as in Figure Q-3. Where branch lines are of 2-inch pipe size or larger or of substantial length, protective equipment (designated as P_F) shall be located as shown in either Q-2 and Q-3.

(d) Backflow protection shall be provided by an approved device that will prevent oxygen from flowing into the fuel-gas system or fuel from flowing into the oxygen system (see S_F, Figs. Q-1 and Q-2).

(e) Flash-back protection shall be provided by an approved device that will prevent flame from passing into the fuel-gas system.

(f) Back-pressure protection shall be provided by an approved pressure-relief device set at a pressure not greater than the pressure rating of the backflow or the flashback protection device, whichever is lower. The pressure-relief device shall be located on the downstream side of the backflow and flashback protection devices. The vent from the pressure-relief device shall be at least as large as the relief device inlet and shall be installed without low points that may collect moisture. If low points are unavoidable, drip pots with drains closed with screw plugs or caps shall be installed at the low points. The vent terminus shall not endanger personnel or property through gas discharge; shall be located away from ignition sources; and shall terminate in a hood or bend.

(g) If pipeline protective equipment incorporates a liquid, the liquid level shall be maintained, and a suitable anti-freeze may be used to prevent freezing.

(h) Fuel gas for use with equipment not requiring oxygen shall be withdrawn upstream of the piping protective devices.

(4) Station outlet protective equipment.

(a) A check valve pressure regulator, hydraulic seal, or combination of these devices shall be provided at each station outlet, including those on portable headers, to prevent backflow, as shown in Figures Q-1, Q-2, and Q-3 and designated as S_F and S_O.

(b) When approved pipeline protective equipment (designated P_F) is located at the station outlet as in Figure Q-3, no additional check valve, pressure regulator, or hydraulic seal is required.

(c) A shutoff valve (designated V_F and V_O) shall be installed at each station outlet and shall be located on the upstream side of other station outlet equipment.

(d) If the station outlet is equipped with a detachable regulator, the outlet shall terminate in a union connection that complies with the Regulator Connection Standards, 1958, Compressed Gas Association.

(e) If the station outlet is connected directly to a hose, the outlet shall terminate in a union connection complying with the Standard Hose Connection Specifications, 1957, Compressed Gas Association.

(f) Station outlets may terminate in pipe threads to which permanent connections are to be made, such as to a machine.

(g) Station outlets shall be equipped with a detachable outlet seal cap secured in place. This cap shall be used to seal the outlet except when a hose, a regulator, or piping is attached.

(h) Where station outlets are equipped with approved backflow and flashback protective devices, as many as four torches may be supplied from one station outlet through rigid piping, provided each outlet from such piping, is equipped with a shutoff valve and provided the fuel-gas capacity of any one torch does not exceed 15 cubic feet per hour. This rule does not apply to machines.

(5) Hose and hose connections.

(a) Hose for oxy-fuel gas service shall comply with the Specification for Rubber Welding Hose, 1958, Compressed Gas Association and Rubber Manufacturers Association.

(b) The generally recognized colors are red for acetylene and other fuel-gas hose, green for oxygen hose, and black for inert-gas and air hose.

(c) When parallel lengths of oxygen and acetylene hose are taped together for convenience and to prevent tangling, not more than 4 inches out of 12 inches shall be covered by tape.

(d) Hose connections shall comply with the Standard Hose Connection Specifications, 1957, Compressed Gas Association.

(e) Hose connections shall be clamped or otherwise securely fastened in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service, but in no case less than a pressure of 300 p.s.i. Oil-free air or an oil-free inert gas shall be used for the test.

(f) Hose showing leaks, burns, worn places, or other defects rendering it unfit for service shall be repaired or replaced.

(6) Pressure-reducing regulators.

(a) Pressure-reducing regulators shall be used only for the gas and pressures for which they are intended. The regulator inlet connections shall comply with Regulator Connection Standards, 1958, Compressed Gas Association.

(b) When regulators or parts of regulators, including gages, need repair, the work shall be performed by skilled mechanics who have been properly instructed.

(c) Gages on oxygen regulators shall be marked "USE NO OIL."

(d) Union nuts and connections on regulators shall be inspected before use to detect faulty seats which may cause leakage of gas when the regulators are attached to the cylinder valves. Damaged nuts or connections shall be destroyed.

[Order 73-5, § 296-24-68209, filed 5/9/73 and Order 73-4, § 296-24-68209, filed 5/7/73.]

WAC 296-24-68211 Acetylene generators. (1) Approval and marking.

(a) Generators shall be of approved construction and shall be plainly marked with the maximum rate of acetylene in cubic feet per hour for which they are designed; the weight and size of carbide necessary for a single charge; the manufacturer's name and address; and the name or number of the type of generator.

(b) Carbide shall be of the size marked on the generator nameplate.

(2) Rating and pressure limitations.

(a) The total hourly output of a generator shall not exceed the rate for which it is approved and marked. Unless specifically approved for higher ratings, carbide-feed generators shall be rated at 1 cubic foot per hour per pound of carbide required for a single complete charge.

(b) Relief valves shall be regularly operated to insure proper functioning. Relief valves for generating chambers shall be set to open at a pressure not in excess of 15 p.s.i.g. Relief valves for hydraulic back pressure valves shall be set to open at a pressure not in excess of 20 p.s.i.g.

(c) Nonautomatic generators shall not be used for generating acetylene at pressures exceeding 1 p.s.i.g., and all water overflows shall be visible.

(3) Location. The space around the generator shall be ample for free, unobstructed operation and maintenance and shall permit ready adjustment and charging.

(4) Stationary acetylene generators (automatic and nonautomatic).

(a) The foundation shall be so arranged that the generator will be level and so that no excessive strain will be placed on the generator or its connections. Acetylene generators shall be grounded.

(b) Generators shall be placed where water will not freeze. The use of common salt (sodium chloride) or other corrosive chemicals for protection against freezing is not permitted. (For heating systems see WAC 296-24-68211 (6)(k).)

(c) Except when generators are prepared in accordance with WAC 296-24-68211 (7)(i), sources of ignition shall be prohibited in outside generator houses or inside generator rooms.

(d) Water shall not be supplied through a continuous connection to the generator except when the generator is provided with an adequate open overflow or automatic water shutoff which will effectively prevent overfilling of the generator. Where a noncontinuous connection is used, the supply line shall terminate at a point not less than 2 inches above the regularly provided opening for filling so that the water can be observed as it enters the generator.

(e) Unless otherwise specifically approved, generators shall not be fitted with continuous drain connections leading to sewers, but shall discharge through an open connection into a suitably vented outdoor receptacle or residue pit which may have such connections. An open connection for the sludge drawoff is desirable to enable the generator operator to observe leakage of generating water from the drain valve or sludge cock.

(f) Each generator shall be provided with a vent pipe of Schedule 40 galvanized iron or steel, except that outside of buildings, vent pipes larger than 4 inches in diameter may be not less than 14 gage galvanized tubing or sheet steel.

(g) The escape or relief pipe shall be rigidly installed without traps and so that any condensation will drain back to the generator.

(h) The escape or relief pipe shall be carried full size to a suitable point outside the building. It shall terminate in a hood or bend located at least 12 feet above the ground, preferably above the roof, and as far away as practicable from windows or other openings into buildings and as far away as practicable from sources of ignition such as flues or chimneys and tracks used by locomotives. Generating chamber relief pipes shall not be inter-connected but shall be separately led to the outside air. The hood or bend shall be so constructed that it will not be obstructed by rain, snow, ice, insects, or birds. The outlet shall be at least 3 feet from combustible construction.

(i) Gas holders shall be constructed on the gasometer principle, the bell being suitably guided. The gas bell shall move freely without tendency to bind and shall have a clearance of at least 2 inches from the shell.

(j) The gas holder may be located in the generator room, in a separate room or out of doors. In order to prevent collapse of the gas bell or infiltration of air due to a vacuum caused by the compressor or booster pump or cooling of the gas, a compressor or booster cutoff shall be provided at a point 12 inches or more above the landing point of the bell. When the gas holder is located indoors, the room shall be ventilated in accordance with WAC 296-24-68211 (6)(j) and heated and lighted in accordance with WAC 296-24-68211 (6)(k) and (1).

(k) When the gas holder is not located within a heated building, gas holder seals shall be protected against freezing.

(l) Means shall be provided to stop the generator-feeding mechanism before the gas holder reaches the upper limit of its travel.

(m) When the gas holder is connected to only one generator, the gas capacity of the holder shall be not less than one-third of the hourly rating of the generator.

(n) If acetylene is used from the gas holder without increase in pressure at some points but with increase in pressure by a compressor or booster pump at other points, approved piping protective devices shall be installed in each supply line. The low-pressure protective device shall be located between the gas holder and the shop piping, and the medium-pressure protective device shall be located between the compressor or booster pump and the shop piping (see Figure Q-4). Approved protective equipment (designated P_F) is used to prevent: Backflow of oxygen into the fuel-gas supply system; passage of a flashback into the fuel-gas supply system; and excessive back pressure of oxygen in the fuel-gas supply system. The three functions of the protective

equipment may be combined in one device or may be provided by separate devices.

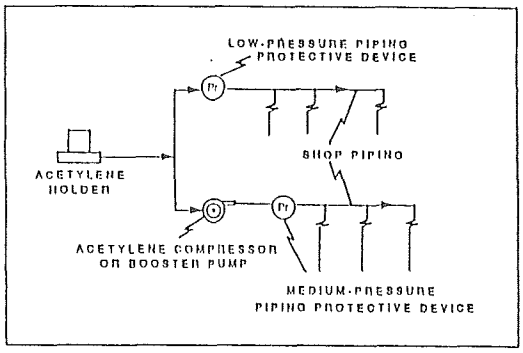


Figure Q-4

(o) The compressor or booster system shall be of an approved type.

(p) Wiring and electrical equipment in compressor or booster pump rooms or enclosures shall conform to the provisions of chapter 296-24 WAC Part L for Class I, Division 2 locations.

(q) Compressors and booster pump equipment shall be located in well-ventilated areas away from open flames, electrical or mechanical sparks, or other ignition sources.

(r) Compressor or booster pumps shall be provided with pressure relief valves which will relieve pressure exceeding 15 p.s.i.g. to a safe outdoor location as provided in WAC 296-24-68211 (2)(b), or by returning the gas to the inlet side or to the gas supply source.

(s) Compressor or booster pump discharge outlets shall be provided with approved protective equipment. (See WAC 296-24-68211 (4)(e).)

(5) Portable acetylene generators.

(a) All portable generators shall be of a type approved for portable use.

(b) Portable generators shall not be used within 10 feet of combustible material other than the floor.

(c) Portable generators shall not be used in rooms of total volume less than 35 times the total gas-generating capacity per charge of all generators in the room. Generators shall not be used in rooms having a ceiling height of less than 10 feet. (To obtain the gas-generating capacity in cubic feet per charge, multiply the pounds of carbide per charge by 4.5.)

(d) Portable generators shall be protected against freezing. The use of salt or other corrosive chemical to prevent freezing is prohibited.

(e) Portable generators shall be cleaned and recharged and the air mixture blown off outside buildings.

(f) When charged with carbide, portable generators shall not be moved by crane or derrick.

(g) When not in use, portable generators shall not be stored in rooms in which open flames are used unless the generators contain no carbide and have been thoroughly purged of acetylene. Storage rooms shall be well ventilated.

(h) When portable acetylene generators are to be transported and operated on vehicles, they shall be securely anchored to the vehicles. If transported by truck, the motor shall be turned off during charging, cleaning, and generating periods.

(i) Portable generators shall be located at a safe distance from the welding position so that they will not be exposed to sparks, slag, or misdirection of the torch flame or overheating from hot materials or processes.

(6) Outside generator houses and inside generator rooms for stationary acetylene generators.

(a) No opening in any outside generator house shall be located within 5 feet of any opening in another building.

(b) Walls, floors and roofs of outside generator houses shall be of noncombustible construction.

(c) When a part of the generator house is to be used for the storage or manifolding of oxygen cylinders, the space to be so occupied shall be separated from the generator carbide storage section by partition walls continuous from floor to roof or ceiling, of the type of construction stated in WAC 296-24-68211 (6)(h). Such separation walls shall be without openings and shall be joined to the floor, other walls and ceiling or roof in a manner to effect a permanent gas-tight joint.

(d) Exit doors shall be located so as to be readily accessible in case of emergency.

(e) Explosion venting for outside generator houses and inside generator rooms shall be provided in exterior walls or roofs. The venting areas shall be equal to not less than 1 square foot per 50 cubic feet of room volume and may consist of any one or any combination of the following: Walls of light, noncombustible material preferably single-thickness, single-strength glass; lightly fastened hatch covers; lightly fastened swinging doors in exterior walls opening outward; lightly fastened walls or roof designed to relieve at a maximum pressure of 25 pounds per square foot.

(f) The installation of acetylene generators within buildings shall be restricted to buildings not exceeding one story in height: *Provided, however,* That this will not be construed as prohibiting such installations on the roof or top floor of a building exceeding such height.

(g) Generators installed inside buildings shall be enclosed in a separate room of ample size.

(h) The walls, partitions, floors, and ceilings of inside generator rooms shall be of noncombustible construction having a fire-resistance rating of at least 1 hour. The walls or partitions shall be continuous from floor to ceiling and shall be securely anchored. At least one wall of the room shall be an exterior wall.

(i) Openings from an inside generator room to other parts of the building shall be protected by a swinging type, self-closing fire door for a Class B opening and having a rating of at least 1 hour. Windows in partitions shall be wired glass and approved metal frames with fixed sash. Installation shall be in accordance with the Standard for the Installation of Fire Doors and Windows, NFPA 80-1970.

(j) Inside generator rooms or outside generator houses shall be well ventilated with vents located at floor and ceiling levels.

(k) Heating shall be by steam, hot water, enclosed electrically heated elements or other indirect means. Heating by flames or fires shall be prohibited in outside generator houses or inside generator rooms, or in any enclosure communicating with them.

(l) Generator houses or rooms shall have natural light during daylight hours. Where artificial lighting is necessary it shall be restricted to electric lamps installed in a fixed

position. Unless specifically approved for use in atmospheres containing acetylene, such lamps shall be provided with enclosures of glass or other noncombustible material so designed and constructed as to prevent gas vapors from reaching the lamp or socket and to resist breakage. Rigid conduit with threaded connections shall be used.

(m) Lamps installed outside of wired-glass panels set in gas-tight frames in the exterior walls or roof of the generator house or room are acceptable.

(n) Electric switches, telephones, and all other electrical apparatus which may cause a spark, unless specifically approved for use inside acetylene generator rooms, shall be located outside the generator house or in a room or space separated from the generator room by a gas-tight partition, except that where the generator system is designed so that no carbide fill opening or other part of the generator is open to the generator house or room during the operation of the generator, and so that residue is carried in closed piping from the residue discharge valve to a point outside the generator house or room, electrical equipment in the generator house or room shall conform to the provisions of the chapter 296-24 WAC Part L for Class I, Division 2 locations.

(7) Maintenance and operation.

(a) Unauthorized persons shall not be permitted in outside generator houses or inside generator rooms.

(b) Operating instructions shall be posted in a conspicuous place near the generator or kept in a suitable place available for ready reference.

(c) When recharging generators the order of operations specified in the instructions supplied by the manufacturer shall be followed.

(d) In the case of batch-type generators, when the charge of carbide is exhausted and before additional carbide is added, the generating chamber shall always be flushed out with water, renewing the water supply in accordance with the instruction card furnished by the manufacturer.

(e) The water-carbide residue mixture drained from the generator shall not be discharged into sewer pipes or stored in areas near open flames. Clear water from residue settling pits may be discharged into sewer pipes.

(f) The carbide added each time the generator is recharged shall be sufficient to refill the space provided for carbide without ramming the charge. Steel or other ferrous tools shall not be used in distributing the charge.

(g) Generator water chambers shall be kept filled to proper level at all times except while draining during the recharging operation.

(h) Whenever repairs are to be made or the generator is to be charged or carbide is to be removed, the water chamber shall be filled to the proper level.

(i) Previous to making repairs involving welding, soldering, or other hot work or other operations which produce a source of ignition, the carbide charge and feed mechanism shall be completely removed. All acetylene shall be expelled by completely flooding the generator shell with water and the generator shall be disconnected from the piping system. The generator shall be kept filled with water, if possible, or positioned to hold as much water as possible.

(j) Hot repairs shall not be made in a room where there are other generators unless all the generators and piping have been purged of acetylene. Hot repairs should preferably be made out of doors.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-68211, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-68211, filed 5/9/73 and Order 73-4, § 296-24-68211, filed 5/7/73.]

WAC 296-24-68213 Calcium carbide storage. (1) Packaging.

(a) Calcium carbide shall be contained in metal packages of sufficient strength to prevent rupture. The packages shall be provided with a screw top or equivalent. These packages shall be constructed water- and air-tight. Solder shall not be used in such a manner that the package will fail if exposed to fire.

(b) Packages containing calcium carbide shall be conspicuously marked "calcium carbide-dangerous if not kept dry" or with equivalent warning.

(c) Caution: Metal tools, even the so-called spark resistant type may cause ignition of an acetylene and air mixture when opening carbide containers.

(d) Sprinkler systems shall not be installed in carbide storage rooms.

(2) Storage indoors.

(a) Calcium carbide in quantities not to exceed 600 pounds may be stored indoors in dry, waterproof, and well-ventilated locations.

(b) Calcium carbide not exceeding 600 pounds may be stored indoors in the same room with fuel-gas cylinders.

(c) Packages of calcium carbide, except for one of each size, shall be kept sealed. The seals shall not be broken when there is carbide in excess of 1 pound in any other unsealed package of the same size of carbide in the room.

(d) Calcium carbide exceeding 600 pounds but not exceeding 5,000 pounds shall be stored:

(i) In accordance with (2)(e) of this section.

(ii) In an inside generator room or outside generator house; or

(iii) In a separate room in a one-story building which may contain other occupancies, but without cellar or basement beneath the carbide storage section. Such rooms shall be constructed in accordance with WAC 296-24-68211 (6)(h) and (i) and ventilated in accordance with WAC 296-24-68211 (6)(j). These rooms shall be used for no other purpose.

(e) Calcium carbide in excess of 5,000 pounds shall be stored in one-story buildings without cellar or basement and used for no other purpose, or in outside generator houses. The location of such storage buildings shall be away from congested mercantile and manufacturing districts. If the storage building is of noncombustible construction, it may adjoin other one-story buildings if separated therefrom by unpierced firewalls; if it is detached less than 10 feet from such building or buildings, there shall be no opening in any of the mutually exposing sides of such buildings within 10 feet. If the storage building is of combustible construction, it shall be at least 20 feet from any other one- or two-story building, and at least 30 feet from any other building exceeding two stories.

(3) Storage outdoors.

(a) Calcium carbide in unopened metal containers may be stored outdoors.

(b) Carbide containers to be stored outdoors shall be examined to make sure that they are airtight and watertight. Periodic reexaminations shall be made for rusting or other damage to a container that might affect its water or air tightness.

(c) The bottom tier of each row shall be placed on wooden planking or equivalent so that the containers will not come in contact with the ground or ground water.

(d) Storage areas shall be at least 10 feet from lines of adjoining property that may be built upon.

(e) Containers of carbide which have been in storage the longest shall be used first.

[Order 73-5, § 296-24-68213, filed 5/9/73 and Order 73-4, § 296-24-68213, filed 5/7/73.]

WAC 296-24-68215 Public exhibitions and demonstrations. (1) Installation requirements. Installation and operation of welding, cutting, and related equipment shall be done by, or under the supervision of, a competent operator to insure the personal protection of viewers and demonstrators as well as the protection from fire, of materials in and around the site and the building itself.

(2) Procedures.

(a) Cylinders containing compressed gases for use at the site shall not be charged in excess of one-half their maximum permissible content. (Cylinders of nonliquefied gases and acetylene shall be charged to not more than one-half their maximum permissible charged pressure in p.s.i.g. Cylinders of liquefied gases shall be charged to not more than one-half the maximum permissible capacity in pounds.)

(b) Cylinders located at the site shall be connected for use except that enough additional cylinders may be stored at the site to furnish approximately 1 day's consumption of each gas used. Other cylinders shall be stored, in an approved storage area, preferably outdoors, but this storage area shall not be located near a building exit.

(c) Cylinders in excess of 40 pounds total weight being transported to or from the site shall be carried on a hand or motorized truck.

(d) The site shall be constructed, equipped, and operated in such a manner that the demonstration will be carried out so as to minimize the possibility of injury to viewers.

(e) Sites involving the use of compressed gases shall be located so as not to interfere with the egress of people during an emergency.

(f) The fire department shall be notified in advance of such use of the site.

(g) Each site shall be provided with a portable fire extinguisher of appropriate size and type and with a pail of water.

(h) The public and combustible materials at the site shall be protected from flames, sparks, and molten metal.

(i) Hoses shall be located and protected so that they will not be physically damaged.

(j) Cylinder valves shall be closed when equipment is unattended.

(k) Where caps are provided for valve protection, such caps shall be in place except when the cylinders are in service or connected ready for service.

(l) Cylinders shall be located or secured so that they cannot be knocked over.

[Order 73-5, § 296-24-68215, filed 5/9/73 and Order 73-4, § 296-24-68215, filed 5/7/73.]

WAC 296-24-685 Application, installation, and operation of arc welding and cutting equipment.

[Order 73-5, § 296-24-685, filed 5/9/73 and Order 73-4, § 296-24-685, filed 5/7/73.]

WAC 296-24-68501 General. (1) Equipment selection. Welding equipment shall be chosen for safe application to the work to be done as specified in WAC 296-24-68503.

(2) Installation. Welding equipment shall be installed safely as specified by WAC 296-24-68505.

(3) Instruction. Workers designated to operate arc welding equipment shall have been properly instructed and qualified to operate such equipment as specified in WAC 296-24-68507.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-68501, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-68501, filed 5/9/73 and Order 73-4, § 296-24-68501, filed 5/7/73.]

WAC 296-24-68503 Application of arc welding equipment.

Note: Assurance of consideration of safety in design is obtainable by choosing apparatus complying with the Requirements for Electric Arc-Welding Apparatus, NEMA EW-1-1962, National Electrical Manufacturers Association or the Safety Standard for Transformer-Type Arc-Welding Machines, ANSI C33.2-1956, Underwriters' Laboratories.

(1) Environmental conditions.

(a) Standard machines for arc welding service shall be designed and constructed to carry their rated load with rated temperature rises where the temperature of the cooling air does not exceed 40°C (104°F) and where the altitude does not exceed 3,300 feet, and shall be suitable for operation in atmospheres containing gases, dust, and light rays produced by the welding arc.

(b) Unusual service conditions may exist, and in such circumstances machines shall be especially designed to safely meet the requirements of the service. Chief among these conditions are exposure to:

(i) Unusually corrosive fumes.

(ii) Steam or excessive humidity.

(iii) Excessive oil vapor.

(iv) Flammable gases.

(v) Abnormal vibration or shock.

(vi) Excessive dust.

(vii) Weather.

(viii) Unusual seacoast or shipboard conditions.

(2) Voltage. Open circuit (no load) voltages of arc welding and cutting machines should be as low as possible consistent with satisfactory welding or cutting being done. The following limits shall not be exceeded:

(a) Alternating-current machines.

(i) Manual arc welding and cutting—80 volts.

(ii) Automatic (machine or mechanized) arc welding and cutting—100 volts.

(b) Direct-current machines.

(i) Manual arc welding and cutting—100 volts.

(ii) Automatic (machine or mechanized) arc welding and cutting—100 volts.

(c) When special welding and cutting processes require values of open circuit voltages higher than the above, means shall be provided to prevent the operator from making accidental contact with the high voltage by adequate insulation or other means.

Note: For a.c. welding under wet conditions or warm surroundings where perspiration is a factor, the use of reliable automatic controls for reducing no load voltage is recommended to reduce the shock hazard.

(3) Design.

(a) A controller integrally mounted in an electric motor driven welder shall have capacity for carrying rated motor current, shall be capable of making and interrupting stalled rotor current of the motor, and may serve as the running overcurrent device if provided with the number of overcurrent units as specified by chapter 296-24 WAC Part L. Starters with magnetic undervoltage release should be used with machines installed more than one to a circuit to prevent circuit overload caused by simultaneously starting of several motors upon return of voltage.

(b) On all types of arc welding machines, control apparatus shall be enclosed except for the operating wheels, levers, or handles.

Note: Control handles and wheels should be large enough to be easily grasped by a gloved hand.

(c) Input power terminals, tap change devices and live metal parts connected to input circuits shall be completely enclosed and accessible only by means of tools.

(d) Terminals for welding leads should be protected from accidental electrical contact by employees or by metal objects i.e., vehicles, crane hooks, etc. Protection may be obtained by use of: Dead-front receptacles for plug connections; recessed openings with nonremovable hinged covers; heavy insulating sleeving or taping or other equivalent electrical and mechanical protection. If a welding lead terminal which is intended to be used exclusively for connection to the work is connected to the grounded enclosure, it must be done by a conductor at least two AWG sizes smaller than the grounding conductor and the terminal shall be marked to indicate that it is grounded.

(e) No connections for portable control devices such as push buttons to be carried by the operator shall be connected to an a.c. circuit of higher than 120 volts. Exposed metal parts of portable control devices operating on circuits above 50 volts shall be grounded by a grounding conductor in the control cable.

(f) Auto transformers or a.c. reactors shall not be used to draw welding current directly from any a.c. power source having a voltage exceeding 80 volts.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-68503, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-68503, filed 5/9/73 and Order 73-4, § 296-24-68503, filed 5/7/73.]

WAC 296-24-68505 Installation of arc welding equipment. (1) General. Installation including power supply shall be according to the requirements of chapter 296-24 WAC Part L.

(2) Grounding.

(a) The frame or case of the welding machine (except engine-driven machines) shall be grounded under the conditions and according to the methods prescribed in chapter 296-24 WAC Part L.

(b) Conduits containing electrical conductors shall not be used for completing a work-lead circuit. Pipelines shall not be used as a permanent part of a work-lead circuit, but may be used during construction, extension or repair providing current is not carried through threaded joints, flanged bolted joints, or caulked joints and that special precautions are used to avoid sparking at connection of the work-lead cable.

(c) Chains, wire ropes, cranes, hoists, and elevators shall not be used to carry welding current.

(d) Where a structure, conveyor, or fixture is regularly employed as a welding current return circuit, joints shall be bonded or provided with adequate current collecting devices and appropriate periodic inspection should be conducted to ascertain that no condition of electrolysis or shock, or fire hazard exists by virtue of such use.

(e) All ground connections shall be checked to determine that they are mechanically strong and electrically adequate for the required current.

(3) Supply connections and conductors.

(a) A disconnecting switch or controller shall be provided at or near each welding machine which is not equipped with such a switch or controller mounted as an integral part of the machine. The switch shall be according to chapter 296-24 WAC Part L. Overcurrent protection shall be provided as specified in chapter 296-24 WAC Part L. A disconnect switch with overload protection or equivalent disconnect and protection means, permitted by chapter 296-24 WAC Part L shall be provided for each outlet intended for connection to a portable welding machine.

(b) For individual welding machines, the rated current-carrying capacity of the supply conductors shall be not less than the rated primary current of the welding machines.

(c) For groups of welding machines, the rated current-carrying capacity of conductors may be less than the sum of the rated primary currents of the welding machines supplied. The conductor rating shall be determined in each case according to the machine loading based on the use to be made of each welding machine and the allowance permissible in the event that all the welding machines supplied by the conductors will not be in use at the same time.

(d) In operations involving several welders on one structure, d.c. welding process requirements may require the use of both polarities; or supply circuit limitations for a.c. welding may require distribution of machines among the phases of the supply circuit. In such cases no load voltages between electrode holders will be 2 times normal in d.c. or 1, 1.4, 1.73, or 2 times normal on a.c. machines. Similar voltage differences will exist if both a.c. and d.c. welding are done on the same structure.

(i) All d.c. machines shall be connected with the same polarity.

(ii) All a.c. machines shall be connected to the same phase of the supply circuit and with the same instantaneous polarity.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-68505, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-68505, filed 5/9/73 and Order 73-4, § 296-24-68505, filed 5/7/73.]

WAC 296-24-68507 Operation and maintenance. (1) General. Workers assigned to operate or maintain arc welding equipment shall be acquainted with the requirements of WAC 296-24-68501 through 296-24-68505, 296-24-69501 through 296-24-69507, 296-24-70001 through 296-24-70007 and 296-24-71501 through 296-24-71525; if doing gas-shielded arc welding, also Recommended Safe Practices for Gas-Shielded Arc Welding, A6.1-1966, American Welding Society.

(2) Machine hook up. Before starting operations all connections to the machine shall be checked to make certain they are properly made. The work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.

(3) Grounding. Grounding of the welding machine frame shall be checked. Special attention shall be given to safety ground connections of portable machines.

(4) Leaks. There shall be no leaks of cooling water, shielding gas or engine fuel.

(5) Switches. It shall be determined that proper switching equipment for shutting down the machine is provided.

(6) Manufacturers' instructions. Printed rules and instructions covering operation of equipment supplied by the manufacturers shall be strictly followed.

(7) Electrode holders. Electrode holders when not in use shall be so placed that they cannot make electrical contact with persons, conducting objects, fuel or compressed gas tanks.

(8) Electric shock. Cables with splices within 10 feet of the holder shall not be used. The welder should not coil or loop welding electrode cable around parts of the body.

(9) Maintenance.

(a) The operator should report any equipment defect or safety hazard to the supervisor and the use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by qualified personnel.

(b) Machines which have become wet shall be thoroughly dried and tested before being used.

(c) Work and electrode lead cables should be frequently inspected for wear and damage. Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the service conditions.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-68507, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-68507, filed 5/9/73 and Order 73-4, § 296-24-68507, filed 5/7/73.]

WAC 296-24-690 Installation and operation of resistance welding equipment.

[Order 73-5, § 296-24-690, filed 5/9/73 and Order 73-4, § 296-24-690, filed 5/7/73.]

WAC 296-24-69001 General. (1) Installation. All equipment shall be installed by a qualified electrician in conformance with chapter 296-24 WAC Part L. There shall be a safety-type disconnecting switch or a circuit breaker or circuit interrupter to open each power circuit to the machine, conveniently located at or near the machine, so that the power can be shut off when the machine or its controls are to be serviced.

(2) Thermal protection. Ignitron tubes used in resistance welding equipment shall be equipped with a thermal protection switch.

(3) Personnel. Workers designated to operate resistance welding equipment shall have been properly instructed and judged competent to operate such equipment.

(4) Guarding. Controls of all automatic or air and hydraulic clamps shall be arranged or guarded to prevent the operator from accidentally activating them.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-69001, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-69001, filed 11/22/91, effective 12/24/91; Order 73-5, § 296-24-69001, filed 5/9/73 and Order 73-4, § 296-24-69001, filed 5/7/73.]

WAC 296-24-69003 Spot and seam welding machines (nonportable). (1) Voltage. All external weld initiating control circuits shall operate on low voltage, not over 120 volts.

(2) Capacitor welding. Stored energy or capacitor discharge type of resistance welding equipment and control panels involving high voltage (over 550 volts) shall be suitably insulated and protected by complete enclosures, all doors of which shall be provided with suitable interlocks and contacts wired into the control circuit (similar to elevator interlocks). Such interlocks or contacts shall be so designed as to effectively interrupt power and short circuit all capacitors when the door or panel is open. A manually operated switch or suitable positive device shall be installed, in addition to the mechanical interlocks or contacts, as an added safety measure assuring absolute discharge of all capacitors.

(3) Interlocks. All doors and access panels of all resistance welding machines and control panels shall be kept locked and interlocked to prevent access, by unauthorized persons, to live portions of the equipment.

(4) Guarding. All press welding machine operations, where there is a possibility of the operator's fingers being under the point of operation, shall be effectively guarded by the use of a device such as an electronic eye safety circuit, two hand controls or protections similar to that prescribed for punch press operation, WAC 296-24-19501 through 296-24-19513. All chains, gears, operating bus linkage, and belts shall be protected by adequate guards, in accordance with WAC 296-24-20501 through 296-24-20533.

(5) Shields. The hazard of flying sparks shall be, wherever practical, eliminated by installing a shield guard of safety glass or suitable fire-resistant plastic at the point of operation. Additional shields or curtains shall be installed as necessary to protect passing persons from flying sparks. (See WAC 296-24-70003 (1)(c).)

(6) Foot switches. All foot switches shall be guarded to prevent accidental operation of the machine.

(7) Stop buttons. Two or more safety emergency stop buttons shall be provided on all special multispot welding machines, including 2-post and 4-post weld presses.

(8) Safety pins. On large machines, four safety pins with plugs and receptacles (one in each corner) shall be provided so that when safety pins are removed and inserted in the ram or platen, the press becomes inoperative.

(9) Grounding. Where technically practical, the secondary of all welding transformers used in multispot, protection and seam welding machines shall be grounded. This may be done by permanently grounding one side of the welding secondary current circuit. Where not technically practical, a center tapped grounding reactor connected across the secondary or the use of a safety disconnect switch in conjunction with the welding control are acceptable alternates. Safety disconnect shall be arranged to open both sides of the line when welding current is not present.

[Order 73-5, § 296-24-69003, filed 5/9/73 and Order 73-4, § 296-24-69003, filed 5/7/73.]

WAC 296-24-69005 Portable welding machines. (1) Counter-balance. All portable welding guns shall have suitable counter-balanced devices for supporting the guns, including cables, unless the design of the gun or fixture makes counterbalancing impractical or unnecessary.

(2) Safety chains. All portable welding guns, transformers and related equipment that is suspended from overhead structures, eye beams, trolleys, etc., shall be equipped with safety chains or cables. Safety chains or cables shall be capable of supporting the total shock load in the event of failure of any component of the supporting system.

(3) Clevis. When trolleys are used to support portable welding equipment, they shall be equipped with suitable forged steel clevis for the attachment of safety chains. Each clevis shall be capable of supporting the total shock load of the suspended equipment in the event of trolley failure.

(4) Switch guards. All initiating switches, including retraction and dual schedule switches, located on the portable welding gun shall be equipped with suitable guards capable of preventing accidental initiation through contact with fixturing, operator's clothing, etc. Initiating switch voltage shall not exceed 24 volts.

(5) Moving holder. The movable holder, where it enters the gun frame, shall have sufficient clearance to prevent the shearing of fingers carelessly placed on the operating movable holder.

(6) Grounding. The secondary and case of all portable welding transformers shall be grounded. Secondary grounding may be by center tapped secondary or by a center tapped grounding reactor connected across the secondary.

[Order 73-5, § 296-24-69005, filed 5/9/73 and Order 73-4, § 296-24-69005, filed 5/7/73.]

WAC 296-24-69007 Flash welding equipment. (1) Ventilation and flash guard. Flash welding machines shall be equipped with a hood to control flying flash. In cases of high production, where materials may contain a film of oil and where toxic elements and metal fumes are given off, ventilation shall be provided in accordance with WAC 296-24-71501 through 296-24-71525.

(2) Fire curtains. For the protection of the operators of nearby equipment, fire-resistant curtains or suitable shields shall be set up around the machine and in such a manner that the operator's movements are not hampered.

(3) If the welding process cannot be isolated, all persons who may be exposed to the hazard of arc flash shall be properly protected.

[Order 74-27, § 296-24-69007, filed 5/7/74; Order 73-5, § 296-24-69007, filed 5/9/73 and Order 73-4, § 296-24-69007, filed 5/7/73.]

WAC 296-24-69009 Hazards and precautions. A job hazard analysis shall be made, by qualified personnel, of the operations to be performed on each welding machine to determine the safeguards and personal protective equipment that shall be used for each job.

[Order 73-5, § 296-24-69009, filed 5/9/73 and Order 73-4, § 296-24-69009, filed 5/7/73.]

WAC 296-24-69011 Maintenance. Periodic inspection shall be made by qualified maintenance personnel, and records of the same maintained. The operator shall be instructed to report any equipment defects to the supervisor and the use of the equipment shall be discontinued until safety repairs have been completed.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-69011, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-69011, filed 5/9/73 and Order 73-4, § 296-24-69011, filed 5/7/73.]

WAC 296-24-695 Fire prevention and protection.

[Order 73-5, § 296-24-695, filed 5/9/73 and Order 73-4, § 296-24-695, filed 5/7/73.]

WAC 296-24-69501 Basic precautions. For elaboration of these basic precautions and of the special precautions of WAC 296-24-69503 as well as a delineation of the fire protection and prevention responsibilities of welders and cutters, their supervisors (including outside contractors) and those in management on whose property cutting and welding is to be performed, see, Standard for Fire Prevention in Use of Cutting and Welding Processes, NFPA Standard 51B, 1962. The basic precautions for fire prevention in welding or cutting work are:

(1) Fire hazards. If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.

(2) Guards. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.

(3) Restrictions. If the requirements stated in WAC 296-24-69501 (1) and (2) cannot be followed then welding and cutting shall not be performed.

[Order 73-5, § 296-24-69501, filed 5/9/73 and Order 73-4, § 296-24-69501, filed 5/7/73.]

WAC 296-24-69503 Special precautions. When the nature of the work to be performed falls within the scope of WAC 296-24-69501(2) certain additional precautions may be necessary:

(1) Combustible material. Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks which might drop through the floor. The same precautions shall be observed with regard to cracks or holes in walls, open doorways and open or broken windows.

(2) Fire extinguishers. Suitable fire extinguishing equipment shall be maintained in a state of readiness for

instant use. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed.

(3) Fire watch.

(a) Fire watchers shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist:

(i) Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation.

(ii) Appreciable combustibles are more than 35 feet away but are easily ignited by sparks.

(iii) Wall or floor openings within a 35-foot radius expose combustible material in adjacent areas including concealed spaces in walls or floors.

(iv) Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

(b) Fire watchers shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm. A fire watch shall be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

(4) Authorization. Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. The responsible individual shall designate precautions to be followed in granting authorization to proceed, preferably in the form of a written permit.

(5) Floors. Where combustible materials such as paper clippings, wood shavings, or textile fibers are on the floor, the floor shall be swept clean for a radius of 35 feet. Combustible floors shall be kept wet, covered with damp sand, or protected by fire-resistant shields. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.

(6) Prohibited areas. Cutting or welding shall not be permitted in the following situations:

(a) In areas not authorized by management.

(b) In sprinklered buildings while such protection is impaired.

(c) In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts.

(d) In areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulphur, baled paper, or cotton.

(7) Relocation of combustibles. Where practicable, all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impracticable, combustibles shall be protected with flameproofed covers or otherwise shielded with metal or asbestos guards or curtains. Edges of covers at the floor should be tight to prevent sparks from going under them. This precaution is also important at overlaps where several covers are used to protect a large pile.

(8) Ducts. Ducts and conveyor systems that might carry sparks to distant combustibles shall be suitably protected or shut down.

(9) Combustible walls. Where cutting or welding is done near walls, partitions, ceiling or roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.

(10) Noncombustible walls. If welding is to be done on a metal wall, partition, ceiling or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation, preferably by relocating combustibles. Where combustibles are not relocated, a fire watch on the opposite side from the work shall be provided.

(11) Combustible cover. Welding shall not be attempted on a metal partition, wall, ceiling or roof having a combustible covering nor on walls or partitions of combustible sandwich-type panel construction.

(12) Pipes. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings or roofs shall not be undertaken if the work is close enough to cause ignition by conduction.

(13) Management. Management shall recognize its responsibility for the safe usage of cutting and welding equipment on its property and:

(a) Based on fire potentials of plant facilities, establish areas for cutting and welding, and establish procedures for cutting and welding, in other areas.

(b) Designate an individual responsible for authorizing cutting and welding operations in areas not specifically designed for such processes.

(c) Insist that cutters or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the process.

(d) Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.

(14) Supervisor. The supervisor:

(a) Shall be responsible for the safe handling of the cutting or welding equipment and the safe use of the cutting or welding process.

(b) Shall determine the combustible materials and hazardous areas present or likely to be present in the work location.

(c) Shall protect combustibles from ignition by the following:

(i) Have the work moved to a location free from dangerous combustibles.

(ii) If the work cannot be moved, have the combustibles moved to a safe distance from the work or have the combustibles properly shielded against ignition.

(iii) See that cutting and welding are so scheduled that plant operations that might expose combustibles to ignition are not started during cutting or welding.

(d) Shall secure authorization for the cutting or welding operations from the designated management representative.

(i) Shall determine that the cutter or welder secures their approval that conditions are safe before going ahead.

(ii) Shall determine that fire protection and extinguishing equipment are properly located at the site.

(iii) Shall ensure fire watches are available at the site when required.

(15) Fire prevention precautions. Cutting or welding shall be permitted only in areas that are or have been made fire safe. Within the confines of an operating plant or building, cutting and welding should preferably be done in a specific area designed for such work, such as a maintenance shop or a detached outside location. Such areas should be of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas. When work cannot be moved practically, as in most construction work, the area shall be made safe by removing combustibles or protecting combustibles from ignition sources.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-69503, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-69503, filed 5/9/73 and Order 73-4, § 296-24-69503, filed 5/7/73.]

WAC 296-24-69505 Welding or cutting containers. (1) Used containers. No welding, cutting, or other hot work shall be performed on used drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present or any substances such as greases, tars, acids, or other materials which when subjected to heat, might produce flammable or toxic vapors. Any pipe lines or connections to the drum or vessel shall be disconnected or blanked.

(2) Venting and purging. All hollow spaces, cavities or containers shall be vented to permit the escape of air or gases before preheating, cutting or welding. Purging with inert gas is recommended.

[Order 73-5, § 296-24-69505, filed 5/9/73 and Order 73-4, § 296-24-69505, filed 5/7/73.]

WAC 296-24-69507 Confined spaces. (1) Accidental contact. When arc welding is to be suspended for any substantial period of time such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine be disconnected from the power source.

(2) Torch valve. In order to eliminate the possibility of gas escaping through leaks or improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the gas supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable, the torch and hose shall also be removed from the confined space.

[Order 73-5, § 296-24-69507, filed 5/9/73 and Order 73-4, § 296-24-69507, filed 5/7/73.]

WAC 296-24-700 Protection of employees.

[Order 73-5, § 296-24-700, filed 5/9/73 and Order 73-4, § 296-24-700, filed 5/7/73.]

WAC 296-24-70001 General. (1) Railing. A welder or helper working on platforms, scaffolds, or runways shall be protected against falling. This may be accomplished by the use of railings, safety belts, life lines, or some other equally effective safeguards.

(2) Welding cable. Welders shall place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.

[Order 73-5, § 296-24-70001, filed 5/9/73 and Order 73-4, § 296-24-70001, filed 5/7/73.]

WAC 296-24-70003 Eye protection. (1) Selection.

(a) Helmets or hand shields shall be used during all arc welding or arc cutting operations, excluding submerged arc welding. Goggles should also be worn during arc welding or cutting operations to provide protection from injurious rays from adjacent work, and from flying objects. The goggles may have either clear or colored glass, depending upon the amount of exposure to adjacent welding operations. Helpers or attendants shall be provided with proper eye protection.

(b) Goggles or other suitable eye protection shall be used during all gas welding or oxygen cutting operations. Spectacles without side shields, with suitable filter lenses are permitted for use during gas welding operations on light work, for torch brazing or for inspection.

(c) All operators and attendants of resistance welding or resistance brazing equipment shall use transparent face shields or goggles, depending on the particular job, to protect their faces or eyes, as required.

(d) Eye protection in the form of suitable goggles shall be provided where needed for brazing operations not covered in (1)(a), (b) and (c) of this section.

(2) Specifications for protectors.

(a) Helmets and hand shields shall be made of a material which is an insulator for heat and electricity. Helmets, shields and goggles shall be not readily flammable and shall be capable of understanding sterilization.

(b) Helmets and hand shields shall be arranged to protect the face, neck and ears from direct radiant energy from the arc.

(c) Helmets shall be provided with filter plates and cover plates designed for easy removal.

(d) All parts shall be constructed of a material which will not readily corrode or discolor the skin.

(e) Goggles shall be ventilated to prevent fogging of the lenses as much as practicable.

(f) Cover lenses or plates should be provided to protect each helmet, hand shield or goggle filter lens or plate.

(g) All glass for lenses shall be tempered, substantially free from striae, air bubbles, waves and other flaws. Except when a lens is ground to provide proper optical correction for defective vision, the front and rear surfaces of lenses and windows shall be smooth and parallel.

(h) Lenses shall bear some permanent distinctive marking by which the source and shade may be readily identified.

(i) The following is a guide for the selection of the proper shade numbers. These recommendations may be varied to suit the individual's needs.

Welding Operation	Shade No.
Shielded metal-arc welding—1/16-, 3/32-, 1/8-, 5/32-inch electrodes	10

Gas-shielded arc welding (nonferrous)—1/16-, 3/32-, 1/8-, 5/32-inch electrodes	11
Gas-shielded arc welding (ferrous)—1/16-, 3/32-, 1/8-, 5/32-inch electrodes	12
Shielded metal-arc welding: 3/16-, 7/32-, 1/4-inch electrodes	12
5/16-, 3/8-inch electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8

Note: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

(j) All filter lenses and plates shall meet the test for transmission of radiant energy prescribed in ANSI Z 87.1-1968—American National Standard Practice for Occupational and Educational Eye and Face Protection.

(3) Protection from arc welding rays. Where the work permits, the welder should be enclosed in an individual booth painted with a finish of low-reflectivity such as zinc oxide (an important factor for absorbing ultraviolet radiations) and lamp black, or shall be enclosed with noncombustible screens similarly painted. Booths and screens shall permit circulation of air at floor level. Workers or other persons adjacent to the welding areas shall be protected from the rays by noncombustible or flameproof screens or shields or shall be required to wear appropriate goggles.

[Order 73-5, § 296-24-70003, filed 5/9/73 and Order 73-4, § 296-24-70003, filed 5/7/73.]

WAC 296-24-70005 Protective clothing. (1) General requirements. Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of chapter 296-24 WAC, Part A-2. Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.

(2) Specified protective clothing. Protective means which may be employed are as follows:

(a) Except when engaged in light work, all welders should wear flameproof gauntlet gloves.

(b) Flameproof aprons made of leather, asbestos, or other suitable material may also be desirable as protection against radiated heat and sparks.

(c) Woolen clothing preferable to cotton because it is not so readily ignited and helps protect the welder from changes in temperature. Cotton clothing, if used, should be chemically treated to reduce its combustibility. All outer clothing such as jumpers or overalls should be reasonably free from oil or grease.

(d) Sparks may lodge in rolled-up sleeves or pockets of clothing, or cuffs of overalls or trousers. It is therefore recommended that sleeves and collars be kept buttoned and pockets be eliminated from the front of overalls and aprons. Trousers or overalls should not be turned up on the outside.

Note: For heavy work, fire-resistant leggings, high boots, or other equivalent means should be used.

(e) In production work a sheet metal screen in front of the worker's legs can provide further protection against sparks and molten metal in cutting operations.

(f) Capes or shoulder covers made of leather or other suitable materials should be worn during overhead welding or cutting operations. Leather skull caps may be worn under helmets to prevent head burns.

(g) For overhead welding and cutting, or welding and cutting in extremely confined spaces, ear protection is sometimes desirable.

(h) Where there is exposure to sharp or heavy falling objects, or a hazard of bumping in confined spaces, hard hats or head protectors shall be used.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-70005, filed 9/30/94, effective 11/20/94; Order 73-5, § 296-24-70005, filed 5/9/73 and Order 73-4, § 296-24-70005, filed 5/7/73.]

WAC 296-24-70007 Work in confined spaces. (1) General. As used herein confined space is intended to mean a relatively small or restricted space such as a tank, boiler, pressure vessel, or small compartment of a ship.

(2) Ventilation. Ventilation is a prerequisite to work in confined spaces. For ventilation requirements see WAC 296-24-71501 through 296-24-71525.

(3) Securing cylinders and machinery. When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines shall be left on the outside. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement.

(4) Lifelines. Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing the welder in case of emergency. When safety belts and lifelines are used for this purpose they shall be so attached in a manner so that the welder's body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

(5) Electrode removal. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.

(6) Gas cylinder shutoff. In order to eliminate the possibility of gas escaping through leaks or improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight.

Where practicable the torch and hose shall also be removed from the confined space.

(7) Warning sign. After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-70007, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-70007, filed 5/9/73 and Order 73-4, § 296-24-70007, filed 5/7/73.]

WAC 296-24-715 Health protection and ventilation.

[Order 73-5, § 296-24-715, filed 5/9/73 and Order 73-4, § 296-24-715, filed 5/7/73.]

WAC 296-24-71501 General. (1) Contamination. The requirements in this section have been established on the basis of the following three factors in arc and gas welding which govern the amount of contamination to which welders may be exposed:

(a) Dimensions of space in which welding is to be done (with special regard to height of ceiling).

(b) Number of welders.

(c) Possible evolution of hazardous fumes, gases, or dust according to the metals involved.

(2) Ventilation. It is recognized that in individual instances other factors may be involved in which case ventilation or respiratory protective devices should be provided as needed to meet the equivalent requirements of this section. Such factors would include:

(a) Atmospheric conditions.

(b) Heat generated.

(c) Presence of volatile solvents.

(3) Screens. When welding must be performed in a space entirely screened on all sides, the screens shall be so arranged that no serious restriction of ventilation exists. It is desirable to have the screens so mounted that they are about 2 feet above the floor unless the work is performed at so low a level that the screen must be extended nearer to the floor to protect nearby workers from the glare of welding.

(4) Maximum allowable concentration. Local exhaust or general ventilating systems shall be provided and arranged to keep the amount of toxic fumes, gases, or dusts below the maximum allowable concentration as specified in chapter 296-62 WAC.

Note: A number of potentially hazardous materials are employed in fluxes, coatings, coverings, and filler metals used in welding and cutting or are released to the atmosphere during welding and cutting. These include but are not limited to the materials itemized in WAC 296-24-71509 through 296-24-71523.

(5) Precautionary labels. The employer shall ascertain the potentially hazardous materials, associated with welding, cutting, etc., and inform the employee of same wither through signs, labels or other appropriate means.

(a) All filler metals and fusible granular materials shall carry the following notice, as a minimum, on tags, boxes, or other containers:

CAUTION

Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z 49.1-1967 Safety in Welding and Cutting published by the American Welding Society.

(b) Brazing (welding) filler metals containing cadmium in significant amounts shall carry the following notice on tags, boxes, or other containers:

WARNING
CONTAINS CADMIUM—POISONOUS FUMES MAY BE FORMED ON HEATING

Do not breathe fumes. Use only with adequate ventilation such as fume collectors, exhaust ventilators, or air-supplied respirators. See ANSI Z 49.1-1967.

If chest pain, cough, or fever develops after use call physician immediately.

Keep children away when using.

(c) Brazing and gas welding fluxes containing fluorine compounds shall have a cautionary wording to indicate that they contain fluorine compounds. One such cautionary wording recommended by the American Welding Society for brazing and gas welding fluxes reads as follows:

CAUTION
CONTAINS FLUORIDES

This flux when heated gives off fumes that may irritate eyes, nose and throat.

(i) Avoid fumes-use only in well-ventilated spaces.

(ii) Avoid contact of flux with eyes or skin.

(iii) Do not take internally.

[Order 73-5, § 296-24-71501, filed 5/9/73 and Order 73-4, § 296-24-71501, filed 5/7/73.]

WAC 296-24-71503 Ventilation for general welding and cutting. (1) General. Mechanical ventilation shall be provided when welding or cutting is done on metals not covered in WAC 296-24-71509 through 296-24-71523. (For specific material, see the ventilation requirements of WAC 296-24-71509 through 296-24-71523.)

(a) In a space of less than 10,000 cubic feet per welder.

(b) In a room having a ceiling height of less than 16 feet.

(c) In confined spaces or where the welding space contains partitions, balconies, or other structural barriers to the extent that they significantly obstruct cross ventilation.

(2) Minimum rate. Such ventilation shall be at the minimum rate of 2,000 cubic feet per minute per welder, except where local exhaust hoods and booths as per WAC 296-24-71505, or airline respirators approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for such purposes are provided. Natural ventilation is considered sufficient for welding or cutting operations where the restrictions in WAC 296-24-71503(1) are not present.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-71503, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-71503, filed 5/9/73 and Order 73-4, § 296-24-71503, filed 5/7/73.]

WAC 296-24-71505 Local exhaust hoods and booths. Mechanical local exhaust ventilation may be by means of either of the following:

(1) Hoods. Freely movable hoods intended to be placed by the welder as near as practicable to the work being

welded and provided with a rate of airflow sufficient to maintain a velocity in the direction of the hood of 100 linear feet per minute in the zone of welding when the hood is at its most remote distance from the point of welding. The rates of ventilation required to accomplish this control velocity using a 3-inch wide flanged suction opening are shown in the following table:

Welding zone	Minimum air flow[1] cubic feet/minutes	Duct diameter inches[2]
4 to 6 inches from arc or torch —	150	3
6 to 8 inches from arc or torch —	275	3 1/2
8 to 10 inches from arc or torch —	425	4 1/2
10 to 12 inches from arc or torch —	600	5 1/2

[1]When brazing with cadmium bearing materials or when cutting on such materials increased rates of ventilation may be required.

[2]Nearest half-inch duct diameter based on 4,000 feet per minute velocity in pipe.

(2) Fixed enclosure. A fixed enclosure with a top and not less than two sides which surround the welding or cutting operations and with a rate of airflow sufficient to maintain a velocity away from the welder of not less than 100 linear feet per minute.

[Order 73-5, § 296-24-71505, filed 5/9/73 and Order 73-4, § 296-24-71505, filed 5/7/73.]

WAC 296-24-71507 Ventilation in confined spaces. (1) Air replacement. All welding and cutting operations carried on in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity. All air replacing that withdrawn shall be clean and respirable.

(2) Airline respirators. In such circumstances where it is impossible to provide such ventilation, airline respirators or hose masks approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for this purpose shall be used.

(3) Self-contained units. In areas immediately hazardous to life, hose masks with blowers or self-contained breathing equipment shall be used. The breathing equipment shall be approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH).

(4) Outside helper. Where welding operations are carried on in confined spaces and where welders and helpers are provided with hose masks, hose masks with blowers or self-contained breathing equipment approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH), a worker shall be stationed on the outside of such confined spaces to insure the safety of those working within.

(5) Oxygen for ventilation. Oxygen shall not be used for ventilation.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-71507, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-71507, filed 5/9/73 and Order 73-4, § 296-24-71507, filed 5/7/73.]

WAC 296-24-71509 Fluorine compounds. (1) General. In confined spaces, welding or cutting involving fluxes, coverings, or other materials which contain fluorine compounds shall be done in accordance with WAC 296-24-71507 (1) through (5). A fluorine compound is one that contains fluorine, as an element in chemical combination, not as a free gas.

Note: Maximum allowable concentration. The need for local exhaust ventilation or airline respirators for welding or cutting in other than confined spaces will depend upon the individual circumstances. However, experience has shown such protection to be desirable for fixed-location production welding and for all production welding on stainless steels. Where air samples taken at the welding location indicate that the fluorides liberated are below the maximum allowable concentration, such protection is not necessary.

[Order 73-5, § 296-24-71509, filed 5/9/73 and Order 73-4, § 296-24-71509, filed 5/7/73.]

WAC 296-24-71511 Zinc. (1) Confined spaces. In confined spaces welding or cutting involving zinc-bearing base or filler metals or metals coated with zinc-bearing materials shall be done in accordance with WAC 296-24-71507 (1) through (5).

(2) Indoors. Indoors, welding or cutting involving zinc-bearing base or filler metals coated with zinc-bearing materials shall be done in accordance with WAC 296-24-71505 (1) and (2).

[Order 73-5, § 296-24-71511, filed 5/9/73 and Order 73-4, § 296-24-71511, filed 5/7/73.]

WAC 296-24-71513 Lead. (1) Confined spaces. In confined spaces, welding involving lead-base metals (erroneously called lead-burning) shall be done in accordance with WAC 296-24-71507 (1) through (5).

(2) Indoors. Indoors, welding involving lead-base metals shall be done in accordance with WAC 296-24-71505 (1) and (2).

(3) Local ventilation. In confined spaces or indoors, welding or cutting involving metals containing lead, other than as an impurity, or involving metals coated with lead-bearing materials, including paint shall be done using local exhaust ventilation or airline respirators. Outdoors such operations shall be done using respiratory protective equipment approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for such purposes. In all cases, workers in the immediate vicinity of the cutting operation shall be protected as necessary by local exhaust ventilation or airline respirators.

Note: See chapter 296-62 WAC for additional requirements on lead.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-71513, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-71513, filed 5/9/73 and Order 73-4, § 296-24-71513, filed 5/7/73.]

WAC 296-24-71515 Beryllium. Welding or cutting indoors, outdoors, or in confined spaces involving beryllium-containing base or filler metals shall be done using local exhaust ventilation and airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by chapter 296-62 WAC. In all cases, workers in

the immediate vicinity of the welding or cutting operations shall be protected as necessary by local exhaust ventilation or airline respirators.

[Order 73-5, § 296-24-71515, filed 5/9/73 and Order 73-4, § 296-24-71515, filed 5/7/73.]

WAC 296-24-71517 Cadmium. (1) General. Welding or cutting indoors or in confined spaces involving cadmium-bearing or cadmium-coated base metals shall be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by chapter 296-62 WAC. Outdoors such operations shall be done using respiratory protective equipment such as fume respirators approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for such purposes.

(2) Confined space. Welding (brazing) involving cadmium-bearing filler metals shall be done using ventilation as prescribed in WAC 296-24-71505 or 296-24-71507 if the work is to be done in a confined space.

Note: See chapter 296-62 WAC for additional requirements on cadmium.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-71517, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-71517, filed 5/9/73 and Order 73-4, § 296-24-71517, filed 5/7/73.]

WAC 296-24-71519 Mercury. Welding or cutting indoors or in a confined space involving metals coated with mercury-bearing materials including paint, shall be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by chapter 296-62 WAC. Outdoors such operations shall be done using respiratory protective equipment approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for such purposes.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-71519, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-71519, filed 5/9/73 and Order 73-4, § 296-24-71519, filed 5/7/73.]

WAC 296-24-71521 Cleaning compounds. (1) Manufacturer's instructions. In the use of cleaning materials, because of their possible toxicity of flammability, appropriate precautions such as manufacturer's instructions shall be followed.

(2) Degreasing. Degreasing or other cleaning operations involving chlorinated hydrocarbons shall be so located that no vapors from these operations will reach or be drawn into the atmosphere surrounding any welding operation. In addition, trichloroethylene and perchlorethylene should be kept out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.

[Order 73-5, § 296-24-71521, filed 5/9/73 and Order 73-4, § 296-24-71521, filed 5/7/73.]

WAC 296-24-71523 Cutting of stainless steels. Oxygen cutting, using either a chemical flux or iron powder or gas-shielded arc cutting of stainless steel, shall be done using mechanical ventilation adequate to remove the fumes generated.

[Order 73-5, § 296-24-71523, filed 5/9/73 and Order 73-4, § 296-24-71523, filed 5/7/73.]

WAC 296-24-71525 First-aid equipment. First-aid equipment shall be available at all times. On every shift of welding operations there should be present employees trained to render first aid. All injuries shall be reported as soon as possible for medical attention. First aid shall be rendered until medical attention can be provided.

[Order 73-5, § 296-24-71525, filed 5/9/73 and Order 73-4, § 296-24-71525, filed 5/7/73.]

WAC 296-24-720 Industrial applications.

[Order 73-5, § 296-24-720, filed 5/9/73 and Order 73-4, § 296-24-720, filed 5/7/73.]

WAC 296-24-72001 Transmission pipeline. (1) General. The requirements of WAC 296-24-68501 through 296-24-68507, 296-24-70001 through 296-24-70007, and 296-24-71501 through 296-24-71525, shall be observed.

(2) Field shop operations. Where field shop operations are involved for fabrication of fittings, river crossings, road crossings, and pumping and compressor stations the requirements of WAC 296-24-68001, 296-24-68501 through 296-24-68507, 296-24-69501 through 296-24-69507, 296-24-70001 through 296-24-70007 and 296-24-71501 through 296-24-71525 shall be observed.

(3) Electric shock. When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.

(4) Pressure testing. In pressure testing of pipelines, the workers and the public shall be protected against injury by the blowing out of closures or other pressures restraining devices. Also, protection shall be provided against expulsion of loose dirt that may have become trapped in the pipe.

(5) Construction standards. The welded construction of transmission pipelines shall be conducted in accordance with the Standard for Welding Pipe Lines and Related Facilities, API Std. 1104-1968.

(6) Flammable substance lines. The connection, by welding, of branches to pipelines carrying flammable substances shall be performed in accordance with Welding or Hot Tapping on Equipment Containing Flammables, API Std. PSD No. 2201-1963.

(7) X-ray inspection. The use of x-rays and radioactive isotopes for the inspection of welded pipeline joints shall be carried out in conformance with the American National Standard Safety Standard for Nonmedical X-ray and Sealed Gamma-Ray Sources, ANSI Z 54.1-1963.

[Order 73-5, § 296-24-72001, filed 5/9/73 and Order 73-4, § 296-24-72001, filed 5/7/73.]

WAC 296-24-72003 Mechanical piping systems. (1) General. The requirements of WAC 296-24-68001, 296-24-68501 through 296-24-68507, 296-24-69501 through 296-24-69507, 296-24-70001 through 296-24-70007 and 296-24-71501 through 296-24-71525 shall be observed.

(2) X-ray inspection. The use of x-rays and radioactive isotopes for the inspection of welded piping joints shall be in conformance with the American National Standard Safety Standard for Nonmedical X-ray and Sealed Gamma-Ray Sources, ANSI Z 54.1-1963.

[Order 73-5, § 296-24-72003, filed 5/9/73 and Order 73-4, § 296-24-72003, filed 5/7/73.]

WAC 296-24-722 Welding, cutting, and heating in way of preservative coatings. (1) Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(2) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

(3) Protection against toxic preservative coatings:

(a) In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by air line respirators, meeting the requirements specified in these rules for this type of work.

(b) In the open air, employees shall be protected by a respirator, suitable for the type of work being done.

(4) The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

[Order 73-5, § 296-24-722, filed 5/9/73 and Order 73-4, § 296-24-722, filed 5/7/73.]

PART J-1
WORKING SURFACES, GUARDING FLOORS AND WALL OPENINGS, LADDERS, SCAFFOLDS

Working surfaces, ladders, scaffolds

WAC 296-24-735 Walking-working surfaces.

[Order 73-5, § 296-24-735, filed 5/9/73 and Order 73-4, § 296-24-735, filed 5/7/73.]

WAC 296-24-73501 General requirements. This section applies to all permanent places of employment, except where domestic or mining work only is performed. This section shall apply to agriculture March 1, 1995. Construction work is not to be deemed as a permanent place of employment. Measures for the control of toxic materials are considered to be outside the scope of this section.

[Statutory Authority: Chapter 49.17 RCW. 94-06-068 (Order 93-17), § 296-24-73501, filed 3/2/94, effective 3/1/95; Order 73-5, § 296-24-73501, filed 5/9/73 and Order 73-4, § 296-24-73501, filed 5/7/73.]

WAC 296-24-73503 Housekeeping. (1) All places of employment, passageways, storerooms, and service rooms shall be kept clean, orderly and in a sanitary condition.

(2) The floor of every workroom shall be maintained in a clean, and so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places shall be provided where practicable.

(3) To facilitate cleaning, every floor, working place, and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.

(4) All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.

[Order 74-27, § 296-24-73503, filed 5/7/74; Order 73-5, § 296-24-73503, filed 5/9/73 and Order 73-4, § 296-24-73503, filed 5/7/73.]

WAC 296-24-73505 Aisles and passageways. (1) Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repairs, with no obstruction across or in aisles that could create a hazard.

(2) Permanent aisles and passageways shall be appropriately marked. "Appropriate" does not limit the marking to printed lines on the floor only. Other appropriate methods may be marked pillars, powder stripping, flags, traffic cones, or barrels, provided they are maintained in good repair and the recognition of such markings are included in the training programs for vehicle operators and employees.

(3) All trestles in connection with industrial plants on which cars run, which are also used as walkways for workers, shall be equipped with a walkway on the outer edge, so located as to give safe minimum clearance of three feet to cars. Such walkways shall be equipped with standard rails. Where a trestle crosses a driveway or passageway the trestle over such points shall be solidly boarded over.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-73505, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-24-73505, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-73505, filed 5/9/73 and Order 73-4, § 296-24-73505, filed 5/7/73.]

WAC 296-24-73507 Covers and guardrails. (1) All open vats and tanks into which workers may fall shall be guarded with railings or screen guards.

(2) All open vats and tanks where workers are employed shall have a platform or walkway 36 to 42 inches below the top of vat or tank or where walkway is flush with top of vat or tank, a standard safeguard of 36 to 42 inches high shall be constructed.

(3) Every tank over 5 feet deep, excepting where agitators are used or where products may be damaged by ladders, shall have a ladder fixed on the inside so placed as to connect with means of access from the outside. Rungs shall have a clearance of at least 6 inches measured between the rung and the side of the tank.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-73507, filed 7/31/79; Order 74-27, § 296-24-73507, filed 5/7/74; Order 73-5, § 296-24-73507, filed 5/9/73 and Order 73-4, § 296-24-73507, filed 5/7/73.]

WAC 296-24-73509 Floor loading protection. (1) In every building or other structure, or part thereof, used for mercantile, business, industrial, or storage purposes, the loads approved by the building official shall be marked on plates of approved design which shall be supplied and securely affixed by the owner of the building, or the owners duly authorized agent, in a conspicuous place in each space to which they relate. Such plates shall not be removed or defaced but, if lost, removed, or defaced, shall be replaced by the owner or the owners agent.

(2) It shall be unlawful to place, or cause, or permit to be placed, on any floor or roof of a building or other structure a load greater than that for which such floor or roof is approved by the building official.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-73509, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-73509, filed 5/9/73 and Order 73-4, § 296-24-73509, filed 5/7/73.]

WAC 296-24-73511 Steam pipes. (1) All steam pipes or pipes heated by any other means to a sufficient temperature to burn a person (other than coil pipes, radiators, for heating rooms or buildings, or pipes on portable steam engines and boilers) and which are within seven feet of a floor or platform, if exposed to contact, shall be guarded with a standard safeguard.

(2) Protection from hot pipes. All exposed hot pipes within seven feet of the floor or working platform, or within 15 inches measured horizontally from stairways, ramps or fixed ladders, shall be covered with an insulating material or be guarded in such a manner as to prevent contact.

[Order 74-27, § 296-24-73511, filed 5/7/74.]

WAC 296-24-73513 Buildings—Floors. (1) All buildings, docks, tramways, walkways, log dumps and other structures shall be so designed, constructed, and maintained as to provide a safety factor of 4. This means that all members shall be capable of supporting four times the maximum strain to be imposed. This provision refers to buildings, docks, etc. designed and constructed subsequent to the effective date of these standards and also refers in all cases where either complete or major changes or repairs are made to such buildings, docks, tramways, walkways, log dumps and other structures.

(2) The floors of all buildings, platforms, walks and driveways, storage yards, docks, etc., and all parts thereof, and all supporting members shall be of substantial construction and kept in good repair and free from accumulations of debris. Floors which are maintained in a polished condition shall be polished with a nonslip preparation of an approved type.

(3) Flooring of buildings, ramps, docks, trestles and other structures required to support motive equipment shall be of not less than full two and one-half inch material. However, where flooring is covered by steel floor plates, 2 inch material may be used.

[Order 74-27, § 296-24-73513, filed 5/7/74.]

WAC 296-24-750 Guarding floor and wall openings and holes.

[Order 73-5, § 296-24-750, filed 5/9/73 and Order 73-4, § 296-24-750, filed 5/7/73.]

WAC 296-24-75001 Terms. The following terms shall have the meaning ascribed in this section, when referred to in WAC 296-24-75003 through 296-24-75011, unless the context requires otherwise.

(1) Floor hole. An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening, or slot opening.

(2) Floor opening. An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard, through which persons may fall; such as a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this part.

(3) Handrail. A single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

(4) Platform. A working space for persons, elevated above the surrounding floor or ground; such as a balcony or platform for the operation of machinery and equipment.

(5) Runway. A passageway for persons, elevated above the surrounding floor or ground level, such as a footwalk along shafting or a walkway between buildings.

(6) Standard railing. A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of person.

(7) Standard strength and construction. Any construction of railings, covers, or other guards that meets the requirements of WAC 296-24-750 through 296-24-75011.

(8) Stair railing. A vertical barrier erected along exposed sides of a stairway to prevent falls of persons.

(9) Toeboard. A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials.

(10) Wall hole. An opening less than 30 inches but more than 1 inch high, of unrestricted width, in any wall or partition; such as a ventilation hole or drainage scupper.

(11) Wall opening. An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-75001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-75001, filed 5/9/73 and Order 73-4, § 296-24-75001, filed 5/7/73.]

WAC 296-24-75003 Protection for floor openings. (1) Every stairway floor opening shall be guarded by a standard railing constructed in accordance with WAC 296-24-75011. The railing shall be provided on all exposed sides (except at entrance to stairway). For infrequently used stairways where traffic across the opening prevents the use of fixed standard railing (as when located in aisle spaces, etc.), the guard shall consist of a hinged floor opening cover of standard strength and construction and removable standard railings on all exposed sides (except at entrance to stairway).

(2) Every ladderway floor opening or platform shall be guarded by a standard railing with standard toeboard on all exposed sides (except at entrance to opening), with the

passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

(3) Every hatchway and chute floor opening shall be guarded by one of the following:

(a) Hinged floor opening cover of standard strength and construction equipped with standard railings or permanently attached thereto so as to leave only one exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both top and intermediate positions by removable standard railings.

(b) A removable railing with toeboard on not more than two sides of the opening and fixed standard railings with toeboards on all other exposed sides. The removable railings shall be kept in place when the opening is not in use and should preferably be hinged or otherwise mounted so as to be conveniently replaceable.

Where operating conditions necessitate the feeding of material into any hatchway or chute opening, protection shall be provided to prevent a person from falling through the opening.

(c) The area under floor openings shall, where practical, be fenced off. When this is not practical, the areas shall be plainly marked with yellow lines and telltales shall be installed to hang within five and one-half feet of ground or floor level.

(d) Where floor openings are used to drop materials from one level to another, audible warning systems shall be installed and used to indicate to employees on the lower level that material is to be dropped.

(4) Every skylight opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides.

(5) Every pit and trapdoor floor opening, infrequently used, shall be guarded by a floor opening cover of standard strength and construction which should be hinged in place. While the cover is not in place, the pit or trap opening shall be constantly attended by someone or shall be protected on all exposed sides by removable standard railings.

(6) Every manhole floor opening shall be guarded by a standard manhole cover which need not be hinged in place. While the cover is not in place, the manhole opening shall be constantly attended by someone or shall be protected by removable standard railings.

(7) Every temporary floor opening shall have standard railings, or shall be constantly attended by someone.

(8) Every floor hole into which persons can accidentally walk shall be guarded by either:

(a) A standard railing with standard toeboard on all exposed sides, or

(b) A floor hole cover of standard strength and construction that should be hinged in place. While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard railing.

(9) Every floor hole into which persons cannot accidentally walk (on account of fixed machinery, equipment, or walls) shall be protected by a cover that leaves no openings more than 1 inch wide. The cover shall be securely held in place to prevent tools or materials from falling through.

(10) Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width to less than 20 inches.

[Order 74-27, § 296-24-75003, filed 5/7/74; Order 73-5, § 296-24-75003, filed 5/9/73 and Order 73-4, § 296-24-75003, filed 5/7/73.]

WAC 296-24-75005 Protection for wall openings and holes. (1) Every wall opening from which there is a drop of more than 4 feet shall be guarded by one of the following:

(a) Rail, roller, picket fence, half door, or equivalent barrier.

The guard may be removable but should preferably be hinged or otherwise mounted so as to be conveniently replaceable. Where there is exposure below to falling materials, a removable toeboard or the equivalent shall also be provided. When the opening is not in use for handling materials, the guard shall be kept in position regardless of a door on the opening. In addition, a grab handle shall be provided on each side of the opening with its center approximately 4 feet above floor level and of standard strength and mounting.

(b) Extension platform onto which materials can be hoisted for handling, and which shall have side rails or equivalent guards of standard specifications.

(2) Every chute wall opening from which there is a drop of more than 4 feet shall be guarded by one or more of the barriers specified in WAC 296-24-75005 (1)(a) and (b), or as required by the conditions.

(3) Every window wall opening at a stairway landing, floor, platform, or balcony, from which there is a drop of more than 4 feet, and where the bottom of the opening is less than 3 feet above the platform or landing, shall be guarded by standard slats, standard grill work (as specified in WAC 296-24-75011(11)), or standard railing.

Where the window opening is below the landing, or platform, a standard toeboard shall be provided.

(4) Every temporary wall opening shall have adequate guards but these need not be of standard construction.

(5) Where there is a hazard of materials falling through a wall hole, and the lower edge of the near side of the hole is less than 4 inches above the floor, and the far side of the hole more than 5 feet above the next lower level, the hole shall be protected by a standard toeboard, or an enclosing screen either of sold construction, or as specified in WAC 296-24-75011(11).

[Order 73-5, § 296-24-75005, filed 5/9/73 and Order 73-4, § 296-24-75005, filed 5/7/73.]

WAC 296-24-75007 Protection of open-sided floors, platforms and runways. (1) Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing (or the equivalent as specified in WAC 296-24-75011(3)) on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toeboard wherever, beneath the open sides,

(a) Person can pass,

(b) There is moving machinery, or

(c) There is equipment with which falling materials could create a hazard.

(2) Every runway shall be guarded by a standard railing (or the equivalent as specified in WAC 296-24-75011(3) on all open sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard shall also be provided on each exposed side.

Runways used exclusively for special purposes (such as oiling, shafting, or filling tank cars) may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway of not less than 18 inches wide. Where persons entering upon runways become thereby exposed to machinery, electrical equipment, or other danger not a falling hazard, additional guarding than is here specified may be essential for protection.

(3) Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards shall be guarded with a standard railing and toeboard.

(4) Tools and loose materials shall not be left on overhead platforms and scaffolds.

[Order 76-6, § 296-24-75007, filed 3/1/76; Order 73-5, § 296-24-75007, filed 5/9/73 and Order 73-4, § 296-24-75007, filed 5/7/73.]

WAC 296-24-75009 Stairway railings and guards. (1) Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails as specified in (a) through (e) of this rule, except that vehicle service pit stairways will be exempt from the requirement if such hand or stair rails would prevent vehicle movement into a position over the pit, the width of the stair to be measured clear of all obstructions except handrails:

(a) On stairways less than 44 inches wide having both sides enclosed, at least one handrail, preferably on the right side descending.

(b) On stairways less than 44 inches wide having one side open, at least one stair railing on open side.

(c) On stairways less than 44 inches wide having both sides open, one stair railing on each side.

(d) On stairways more than 44 inches wide but less than 88 inches wide, one handrail on each enclosed side and one stair railing on each open side.

(e) On stairways 88 or more inches wide, one handrail on each enclosed side, one stair railing on each open side, and one intermediate stair railing located approximately midway of the width.

(2) Winding stairs shall be equipped with a handrail offset to prevent walking on all portions of the treads having width less than 6 inches.

(3) Nonindustrial and "monumental" steps are excluded as they are not "industrial" stairs; however, when public and private building steps are located at loading or receiving docks, in maintenance areas, etc., or are used exclusively by employees, the requirements of this standard shall apply.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-75009, filed 1/10/91, effective 2/12/91; 90-03-029 (Order 89-20), § 296-24-75009, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-75009, filed 5/9/73 and Order 73-4, § 296-24-75009, filed 5/7/73.]

WAC 296-24-75011 Railing, toeboards, and cover specifications. (1) A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of from thirty-six to forty-two inches nominal from upper surface of top rail to floor, platform, runway, or ramp level and:

(a) The top rail shall be smooth-surfaced throughout the length of the railing.

(b) The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp.

(c) The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.

(d) Guardrails with heights greater than 42 inches are permissible provided the extra height does not create a dangerous situation for employees and that additional mid-rails were installed so that openings beneath the top rail would not permit the passage of a 19-inch or larger spherical object.

(2) A stair railing shall be of construction similar to a standard railing but the vertical height shall be not more than thirty-four inches nor less than thirty inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

(3) Minimum requirements for standard railings under various types of construction are specified in this subsection. Dimensions specified are based on the U.S. Department of Agriculture Wood Handbook, No. 72, 1955 (No. 1 (S4S) Southern Yellow Pine (Modulus of Rupture 7,400 p.s.i.)) for wood; ANSI G 41.5-1970, American National Standard Specifications for Structural Steel, for structural steel; and ANSI B 125.1-1970, American National Standard Specifications for Welded and Steamless Steel Pipe, for pipe.

(a) For wood railings, the posts shall be of at least two-inch by four-inch nominal stock spaced not to exceed six feet; the top and intermediate rails shall be of at least two-inch by four-inch nominal stock. If top rail is made of two right-angle pieces of one-inch by four-inch stock, posts may be spaced on eight-foot centers, with two-inch by four-inch intermediate rail.

(b) For pipe railings, posts and top and intermediate railings shall be at least one and one-half inches nominal diameter (outside diameter) with posts spaced not more than eight feet on centers.

(c) For structural steel railings, posts and top and intermediate rails shall be of two-inch by two-inch by three-eighths-inch angles or other metal shapes of equivalent bending strength with posts spaced not more than eight feet on centers.

(d) The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least two hundred pounds applied in any direction at any point on the top rail.

(e) Other types, sizes, and arrangements of railing construction are acceptable provided they meet the following conditions:

(i) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of from thirty-six to forty-two inches nominal;

(ii) A strength to withstand at least the minimum requirement of two hundred pounds top rail pressure;

(iii) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail;

(iv) Elimination of overhang of rail ends unless such overhang does not constitute a hazard; such as, baluster railings, scrollwork railings, paneled railings.

(4) A standard toeboard shall be a minimum of four inches nominal in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and with not more than one-quarter-inch clearance above floor level. It may be made of any substantial material either solid or with openings not over one inch in greatest dimension.

Where material is piled to such height that a standard toeboard does not provide protection, paneling from floor to intermediate rail, or to top rail shall be provided.

(5) A handrail shall consist of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. The handrail shall be of rounded or other section that will furnish an adequate handhold for anyone grasping it to avoid falling. The ends of the handrail should be turned in to the supporting wall or otherwise arranged so as not to constitute a projection hazard.

(a) The height of handrails shall be not more than thirty-four inches nor less than thirty inches from upper surface of handrail to surface of tread in line with face of riser or to surface of ramp.

(b) The size of handrails shall be: When of hardwood, at least two inches in diameter; when of metal pipe, at least one and one-half inches in diameter. The length of brackets shall be such as will give a clearance between handrail and wall or any projection thereon of at least one and one-half inches. The spacing of brackets shall not exceed eight feet.

(c) The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least two hundred pounds applied in any direction at any point on the rail.

(6) All handrails and railings shall be provided with a clearance of not less than one and one-half inches between the handrail or railing and any other object.

(7) Floor opening covers may be of any material that meets the following strength requirements:

(a) Trench or conduit covers and their supports, when located in plant roadways, shall be designed to carry a truck rear-axle load of at least twenty thousand pounds.

(b) Manhole covers and their supports, when located in plant roadways, shall comply with local standard highway requirements if any; otherwise, they shall be designed to carry a truck rear-axle of at least twenty thousand pounds.

(c) The construction of floor opening covers may be of any material that meets the strength requirements. Covers projecting not more than one inch above the floor level may be used providing all edges are chamfered to an angle with the horizontal of not over thirty degrees. All hinges, handles, bolts, or other parts shall set flush with the floor or cover surface.

(8) Skylight screens shall be of such construction and mounting that they are capable of withstanding a load of at least two hundred pounds applied perpendicularly at any one area on the screen. They shall also be of such construction and mounting that under ordinary loads or impacts, they will not deflect downward sufficiently to break the glass below them. The construction shall be of grillwork with openings not more than four inches long or of slatwork with openings not more than two inches wide with length unrestricted.

(9) Wall opening barriers (rails, rollers, picket fences, and half doors) shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least two hundred pounds applied in any direction (except upward) at any point on the top rail or corresponding member.

(10) Wall opening grab handles shall be not less than twelve inches in length and shall be so mounted as to give one and one-half inches clearance from the side framing of the wall opening. The size, material, and anchoring of the grab handle shall be such that the completed structure is capable of withstanding a load of at least two hundred pounds applied in any direction at any point of the handle.

(11) Wall opening screens shall be of such construction and mounting that they are capable of withstanding a load of at least two hundred pounds applied horizontally at any point on the near side of the screen. They may be of solid construction, of grillwork with openings not more than eight inches long, or of slatwork with openings not more than four inches wide with length unrestricted.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-75011, filed 1/10/91, effective 2/12/91; 89-11-035 (Order 89-03), § 296-24-75011, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-75011, filed 7/31/79; Order 73-5, § 296-24-75011, filed 5/9/73 and Order 73-4, § 296-24-75011, filed 5/7/73.]

WAC 296-24-765 Fixed industrial stairs.

[Order 73-5, § 296-24-765, filed 5/9/73 and Order 73-4, § 296-24-765, filed 5/7/73.]

WAC 296-24-76501 Terms. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-76503 through 296-24-76523 unless the context requires otherwise. (1) Handrail. A single bar or pipe supported on brackets from a wall or partition to provide a continuous handhold for persons using a stair.

(2) Nose, nosing. That portion of a tread projecting beyond the face of the riser immediately below.

(3) Open riser. The air space between the treads of stairways without upright members (risers).

(4) Platform. An extended step or landing breaking a continuous run of stairs.

(5) Railing. A vertical barrier erected along exposed sides of stairways and platforms to prevent falls of persons. The top member of railing usually serves as a handrail.

(6) Rise. The vertical distance from the top of a tread to the top of the next higher tread.

(7) Riser. The upright member of a step situated at the back of a lower tread and near the leading edge of the next higher tread.

(8) Stairs, stairway. A series of steps leading from one level or floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment that are used more or less continuously or

routinely by employees, or only occasionally by specific individuals. A series of steps and landings having three or more risers constitutes stairs or stairway.

(9) Tread. The horizontal member of a step.

(10) Tread run. The horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread.

(11) Tread width. The horizontal distance from front to back of tread including nosing when used.

[Order 73-5, § 296-24-76501, filed 5/9/73 and Order 73-4, § 296-24-76501, filed 5/7/73.]

WAC 296-24-76503 Application of requirements. This section contains specifications for the safe design and construction of fixed general industrial stairs. This classification includes interior and exterior stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms, or pits. This section does not apply to stairs used for fire exit purposes, to construction operations, to private buildings or residences, or to articulated stairs, such as may be installed on floating roof tanks or on dock facilities, the angle of which changes with the rise and fall of the base support.

When stairs of public and private buildings are located at loading or receiving docks, in maintenance areas, etc., or are used exclusively by employees, the term "fixed industrial steps" will apply and be evaluated accordingly.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-76503, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-76503, filed 5/9/73 and Order 73-4, § 296-24-76503, filed 5/7/73.]

WAC 296-24-76505 Where fixed stairs are required. Fixed stairs shall be provided for access from one structure level to another where operations necessitate regular travel between levels, and for access to operating platforms at any equipment which requires attention routinely during operations. Fixed stairs shall also be provided where access to elevations is daily or at each shift for such purposes as gauging, inspection, regular maintenance, etc., where such work may expose employees to acids, caustics, gases, or other harmful substances, or for which purposes the carrying of tools or equipment by hand is normally required. (It is not the intent of this section to preclude the use of fixed ladders for access to elevated tanks, towers, and similar structures, overhead traveling cranes, etc., where the use of fixed ladders is common practice.) Spiral stairways shall not be permitted except for special limited usage and secondary access situations where it is not practical to provide a conventional stairway. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than five feet.

[Order 73-5, § 296-24-76505, filed 5/9/73 and Order 73-4, § 296-24-76505, filed 5/7/73.]

WAC 296-24-76507 Stair strength. Fixed stairways shall be designed and constructed to carry a load of five times the normal live load anticipated but never of less strength than to carry safely a moving concentrated load of 1,000 pounds.

[Order 73-5, § 296-24-76507, filed 5/9/73 and Order 73-4, § 296-24-76507, filed 5/7/73.]

WAC 296-24-76509 Stair width. Fixed stairways shall have a minimum width of 22 inches.

[Order 73-5, § 296-24-76509, filed 5/9/73 and Order 73-4, § 296-24-76509, filed 5/7/73.]

WAC 296-24-76511 Angle of stairway rise. (1) Fixed stairs shall be installed at angles to the horizontal of between thirty degrees and fifty degrees. Any uniform combination of rise/tread dimensions may be used that will result in a stairway at any angle to the horizontal within the permissible range. Table D-1 gives rise/tread dimensions which will produce a stairway within the permissible range, stating the angle to the horizontal produced by each combination. However, the rise/tread combinations are not limited to those given in Table D-1.

(2) Because of space limitations a permanent stairway sometimes has to be installed at an angle above the fifty degree critical angle. Such installations are commonly called inclined ladders or ship's ladders, which shall have handrails on both sides and open risers. They shall be capable of sustaining a live load of one hundred pounds per square foot with a safety factor of four. The following preferred and critical angles from the horizontal shall be considered for inclined ladders and ship's ladders:

(a) Thirty-five to sixty degrees - Preferred angle from horizontal.

(b) Sixty to seventy degrees - Critical angle from horizontal.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-76511, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-76511, filed 5/9/73 and Order 73-4, § 296-24-76511, filed 5/7/73.]

WAC 296-24-76513 Stair treads. Each tread and the top landing of a stairway, where risers are used, should have a nose which extends one-half inch to 1 inch beyond the face of the lower riser. Noses should have an even leading edge. All treads shall be reasonably slip-resistant and the nosings shall be of nonslip finish. Welded bar grating treads without nosings are acceptable providing the leading edge can be readily identified by personnel descending the stairway and provided the tread is serrated or is of definite nonslip design. Rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs.

TABLE D-1

Angle to horizontal	Rise (in inches)	Tread run (in inches)
30°35'	6 1/2	11
32°08'	6 3/4	10 3/4
33°41'	7	10 1/2
35°16'	7 1/4	10 1/4
36°52'	7 1/2	10
38°29'	7 3/4	9 3/4
40°08'	8	9 1/2
41°44'	8 1/4	9 1/4
43°22'	8 1/2	9
45°00'	8 3/4	8 3/4

46°38'	9	8 1/2
48°16'	9 1/4	8 1/4
49°54'	9 1/2	8

[Order 73-5, § 296-24-76513, filed 5/9/73 and Order 73-4, § 296-24-76513, filed 5/7/73.]

WAC 296-24-76515 Length of stairways. Long flights of stairs, unbroken by landings or intermediate platforms, should be avoided. Consideration should be given to providing intermediate platforms where practical and where such stairways are in frequent use. Stairway platforms shall be no less than the width of a stairway and a minimum of 30 inches in length measured in the direction of travel.

[Order 73-5, § 296-24-76515, filed 5/9/73 and Order 73-4, § 296-24-76515, filed 5/7/73.]

WAC 296-24-76517 Railings and handrails. Standard railings shall be provided on the open sides of all exposed stairways and stair platforms. Handrails shall be provided on at least one side of closed stairways, preferably on the right side descending. Stair railings and handrails shall be installed in accordance with the provisions of WAC 296-24-75001 through 296-24-75011.

[Order 73-5, § 296-24-76517, filed 5/9/73 and Order 73-4, § 296-24-76517, filed 5/7/73.]

WAC 296-24-76519 Vertical clearance. Vertical clearance above any stair tread to an overhead obstruction shall be at least 7 feet measured from the leading edge of the tread.

[Order 73-5, § 296-24-76519, filed 5/9/73 and Order 73-4, § 296-24-76519, filed 5/7/73.]

WAC 296-24-76521 Open risers. Stairs having treads of less than 9-inch width should have open risers.

[Order 73-5, § 296-24-76521, filed 5/9/73 and Order 73-4, § 296-24-76521, filed 5/7/73.]

WAC 296-24-76523 General. Open grating type treads are desirable for outside stairs.

[Order 73-5, § 296-24-76523, filed 5/9/73 and Order 73-4, § 296-24-76523, filed 5/7/73.]

WAC 296-24-76555 Alternating tread-type stairs. Alternating tread-type stairs have a series of steps between 50 and 70 degrees from horizontal, attached to a center support rail in an alternating manner so that a user of the stairs never has both feet at the same level at the same time. (See Figure D-12.)

(1) Alternating tread-type stairs shall be designed, installed, used, and maintained in accordance with approved manufacturer's specifications, and shall have the following:

(a) Stair rails on all open sides;

(b) Handrails on both sides of enclosed stairs;

(c) Stair rails and handrails of such configuration as to provide an adequate handhold for a user grasping it to avoid a fall;

(d) A minimum of 17 inches between handrails;

(e) A minimum width of 22 inches overall;

(f) A minimum tread depth of 8 inches;

(g) A minimum tread width of 7 inches; and

(h) A maximum rise of 9 1/2 inches to the tread surface of the next alternating tread.

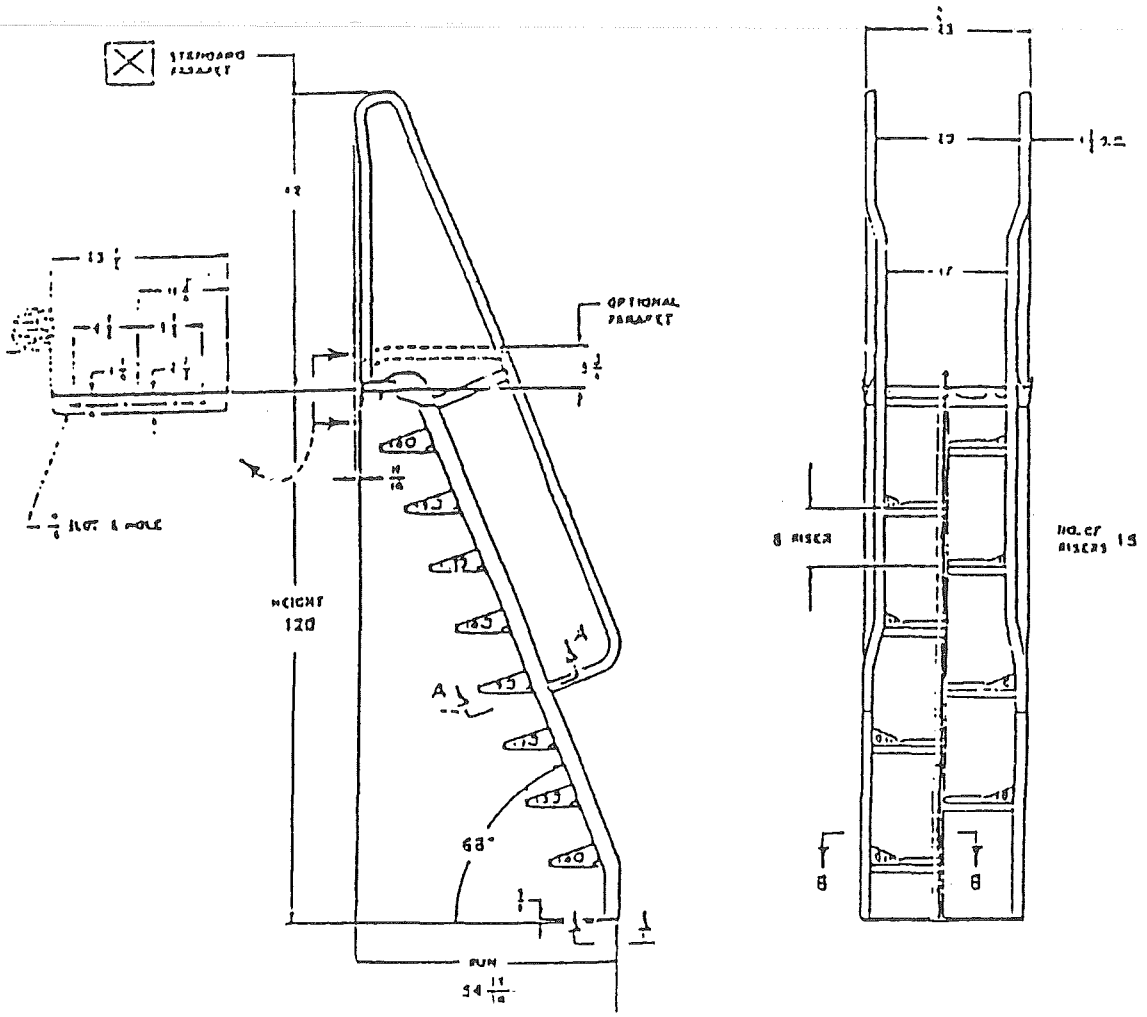
(2) Alternating tread-type stairs shall not have more than a 20-foot continuous rise. Where more than a 20-foot rise is necessary to reach the top of a required stair, one or more intermediate platforms shall be provided in accordance with WAC 296-24-76515.

(3) Stairs and platforms shall be installed so the top landing of the alternating tread stair is flush with the top of the landing platform.

(4) Stair design and construction shall sustain a load of not less than five times the normal live load, but never less strength than to carry safely a moving concentrated load of 1,000 pounds.

(5) Treads shall be equipped with slip-resistant surfaces.

(6) Where a platform or landing is used, the width shall not be less than the width of the stair nor less than 30-inch depth in the direction of travel. Stairs shall be flush with the top of the landing platform.



[Statutory Authority: Chapter 49.17 RCW. 92-17-022 (Order 92-06), § 296-24-76555, filed 8/10/92, effective 9/10/92; 91-03-044 (Order 90-18), § 296-24-76555, filed 1/10/91, effective 2/12/91.]

WAC 296-24-780 Portable wood ladders. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-78003 through 296-24-78009 unless the context requires otherwise. (1) Ladders. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

(2) Stepladder. A stepladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

(3) Single ladder. A single ladder is a nonself-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designated by the overall length of the side rail.

(4) Extension ladder. An extension ladder is a nonself-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

(5) Sectional ladder. A sectional ladder is a nonself-supporting portable ladder, nonadjustable in length consisting of two or more sections of ladder so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

(6) Trestle ladder. A trestle ladder is a self-supporting portable ladder, nonadjustable in length, consisting of two sections hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge.

(7) Extension trestle ladder. An extension trestle ladder is a self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

(8) Special-purpose ladder. A special-purpose ladder is a portable ladder which represents either a modification or a combination of design or construction features in one of the general-purpose types of ladders previously defined, in order to adapt the ladder to special or specific uses.

(9) Trolley ladder. A trolley ladder is a semifixed ladder, nonadjustable in length, supported by attachments to an overhead track, the plane of the ladder being at right angles to the plane of motion.

(10) Side-rolling ladder. A side-rolling ladder is a semifixed ladder, nonadjustable in length, supported by attachments to a guide rail, which is generally fastened to shelving, the plane of the ladder being also its plane of motion.

(11) Wood characteristics. Wood characteristics are distinguishing features which by their extent and number determine the quality of a piece of wood.

(12) Wood irregularities. Wood irregularities are natural characteristics in or on wood that may lower its durability, strength, or utility.

(13) Cross grain. Cross grain (slope of grain) is a deviation of the fiber direction from a line parallel to the sides of the piece.

(14) Knot. A knot is a branch or limb, imbedded in the tree and cut through in the process of lumber manufacture, classified according to size, quality, and occurrence. The size of the knot is determined as the average diameter on the surface of the piece.

(15) Pitch and bark pockets. A pitch pocket is an opening extending parallel to the annual growth rings containing, or that has contained, pitch, either solid or liquid. A bark pocket is an opening between annual growth rings that contains bark.

(16) Shake. A shake is a separation along the grain, most of which occurs between the rings of annual growth.

(17) Check. A check is a lengthwise separation of the wood, most of which occurs across the rings of annual growth.

(18) Wane. Wane is bark, or the lack of wood from any cause, on the corner of a piece.

(19) Decay. Decay is disintegration of wood substance due to action of wood-destroying fungi. It is also known as dote and rot.

(20) Compression failure. A compression failure is a deformation (buckling) of the fibers due to excessive compression along the grain.

(21) Compression wood. Compression wood is an aberrant (abnormal) and highly variable type of wood structure occurring in softwood species. The wood commonly has density somewhat higher than does normal wood, but somewhat lower stiffness and tensile strength for its weight in addition to high longitudinal shrinkage.

(22) Low density. Low-density wood is that which is exceptionally light in weight and usually deficient in strength properties for the species.

[Order 73-5, § 296-24-780, filed 5/9/73 and Order 73-4, § 296-24-780, filed 5/7/73.]

WAC 296-24-78003 Application of requirements. This section is intended to prescribe rules and establish minimum requirements for the construction, care, and use of the common types of portable wood ladders, in order to insure safety under normal conditions of usage. Other types of special ladders, fruit-picker's ladders, industrial tripod ladders, combination step and extension ladders, stockroom step ladders, aisle-way step ladders, shelf ladders, and library ladders are not specifically covered by this section.

[Order 73-5, § 296-24-78003, filed 5/9/73 and Order 73-4, § 296-24-78003, filed 5/7/73.]

WAC 296-24-78005 Materials. (1) Requirements applicable to all wood parts.

(a) All wood parts shall be of the species specified in Table D-5, seasoned to a moisture content of not more than 15 percent; smoothly machined and dressed on all sides; free from sharp edges and splinters; sound and free by accepted visual inspection from shake, wane, compression failures, decay, or other irregularities except as hereinafter provided. Low-density wood shall not be used.

(b) Black streaks in western hemlock shall not be considered an irregularity, except that chambers associated with black streaks when present in the part, shall be limited as specified for pitch and bark pockets.

(2) Permissible irregularities in side rails and back rails.

(a) The general slope of grain in side rails of minimum dimension shall not be steeper than 1 in 12, except that for ladders under 10 feet in length and having flat steps for treads, the general slope of grain shall not be steeper than 1 in 10. The slope of grain in areas of local grain deviation shall not be steeper than 1 in 12 or 1 in 10 as specified above when occurring on the edges or in the outer one-fourth of the width of the wide face. Local areas of grain deviation within the center half of the width of the wide face may contain grain slope as steep as 1 in 8. Local deviations of grain associated with otherwise permissible irregularities are permitted.

(b) Knots shall not appear in narrow faces of side rails. Knots, if tight and sound and less than one-half inch in diameter, are permitted on the wide face provided they are at least one-half inch back from either edge and not more frequent than 1 to any 3 feet of ladder length.

(c) Pitch and bark pockets are permitted provided they are not more than one-eighth inch in width, or more than 2 inches in length, or more than one-half inch in depth, and then only if they are not more frequent than 1 to any 3 feet of ladder length.

(d) Checks are permitted on side rails provided they are not more than 6 inches in length or more than one-half inch in depth.

(e) Occurrences of compression wood in relatively small amounts and positively identified by competent and conscientious visual inspection of side rails are permitted provided no single streak shall exceed one-half inch in width nor shall the aggregate of streaks exceed one-fourth of the face of the side rail. Borderline forms of compression wood not positively identified by competent and conscientious visual inspection are permitted. Ladder parts containing bow or crook which would interfere with the operation of the ladder shall not be used.

(3) Permissible irregularities in flat steps, rungs, and cleats.

(a) The general slope of grain in flat steps of minimum dimension shall not be steeper than 1 in 12, except that for ladders under 10 feet in length the slope of grain shall not be steeper than 1 in 10. The slope of grain in areas of local deviation shall not be steeper than 1 in 12 or 1 in 10 as specified above. For all ladders, cross grain not steeper than 1 in 10 are permitted in lieu of 1 in 12, provided the size is increased to afford at least 15 percent greater calculated strength than for ladders built to minimum dimensions. Local deviations of grain associated with otherwise permissible irregularities are permitted.

(b) The general slope of grain and that in areas of local deviations of grain shall not be steeper than 1 in 15 in rungs and cleats. For all ladders cross grain not steeper than 1 in 12 are permitted in lieu of 1 in 15, provided the size is increased to afford at least 15 percent greater calculated strength for ladders built to minimum dimensions. Local deviations of grain associated with otherwise permissible irregularities are permitted.

(c) Knots over one-eighth inch in diameter shall not appear in rungs. Knots shall not appear in the narrow faces of flat steps and cleats. Knots appearing in the wide faces of flat steps and cleats shall not exceed a diameter of one-fourth inch.

(4) Classification of species of wood. Table D-5 gives a list of native woods, divided into four groups on the basis of mechanical properties considered from the standpoint of use for ladder construction.

(a) All minimum dimensions and specifications set forth in (b)(ii) for side rails and flat steps are based on the species of wood listed in Group 3 in Table D-5 except where otherwise provided. The species of all other groups may be substituted for those of Group 3 when used in sizes that provide at least equivalent strength. (See Table D-5 for suggested methods of size adjustment.)

(b) All minimum dimensions and specifications set forth in the following "factor for increase in" for rungs and cleats are based on the species of wood listed in Group 1 in Table D-5. The cross-sectional dimensions specified for Group 1 species are increased by the factors shown in this subsection (based on the percentages of Table D-5) for the species group of which the cleats are to be made.

FACTOR FOR INCREASE IN

Species group	Each dimension	Width only (thickness unchanged)
1	1.00	1.00
2	1.03	1.05
3	1.11	1.19
4	1.17	1.26

(5) Metal parts. All metal parts shall be made of aluminum, steel, wrought iron, malleable iron, or other material, adequate in strength for the purpose intended, and shall be properly coated and protected so as to be rust resistant.

[Order 73-5, § 296-24-78005, filed 5/9/73 and Order 73-4, § 296-24-78005, filed 5/7/73.]

WAC 296-24-78007 Construction requirements. (1) Basis of requirements.

(a) Dimensions specified hereinafter for wood ladders are the minimum dressed cross-sectional dimensions for the types of ladders herein designated, based on the species of woods specified in WAC 296-24-78005(4), at a moisture content of 15 percent. The dimensions for side rails are based on a mortise or gain as specified for the various types of ladders for step or rung attachments. Where the strength of the side rails or back legs is reduced by a greater mortise or gain than shown, or where it is desired to use a cross section for any wood part either dimension of which is less than that specified, the required dimensions may be found as indicated in (1)(b) of this section.

(b) For the side rails of single extension and sectional ladders, the proposed section shall develop an actual stress per square inch not greater than 2,150 pounds for Group 1 woods, 2,000 pounds for Group 2 woods, 1,600 pounds for Group 3 woods, or 1,375 pounds for Group 4 woods when computed by the following formula applying to rectangular sections, with a maximum tolerance of 5 percent over these stresses:

$$S = \frac{3\ LD\ (P+W/16)}{2B\ (D^3-d^3)} = \frac{1.5\ LD\ (25+W/16)}{B\ (D^3-0.67)}$$

P = 25 pounds, which is the normal component on each rail of a load of 200 pounds at the center of the ladder, equally distributed between the rails, when the foot of the ladder is moved out of the perpendicular by one-quarter of its length.
S = Stress in extreme fiber in pounds per square inch.
W = Weight of ladder in pounds.
L = Maximum working length of ladder in inches.
B = Net thickness of each side rail in inches.
D = Depth of side rail in inches.
d = Diameter of hole board for rung (d^3 shall be taken as not less than 0.67).

(c) Adjustment of sizes for wood parts of stepladders and other ladder types covered by this section may be made as follows:

(i) The dimensions specified in later sections for parts having rectangular cross sections generally represent only one of a number of possible combinations of thickness and width which could satisfy the requirements for strength and stiffness. Depending upon the material sizes available, manufacturing practices, and like factors, parts produced by a particular manufacturer may or may not agree exactly with the sizes given later. The following provisions provide means for determining equality of load-carrying capacity of parts of different sizes or of determining sizes needed to provide equality.

(ii) Any changes in dimensions shall result in a change in the width-thickness ratio for side rails of back legs not greater than 25 percent from the ratio for a corresponding ladder as now covered in this section.

(iii) Where both dimensions are different from those specified, the load-carrying capacity in bending of a part will be equal to or greater than that of a part of specified dimensions if the ratio P_2/P_1 is not less than 1, where

$$\frac{P_2}{P_1} = \frac{B_2D_2^2}{B_1D_1^2}$$

and

B = Dimension of the part at right angles to the direction of load (width of a step, thickness of a side rail or back leg).
D = Dimension of the part parallel to the direction of load (thickness of a step, width of a side rail or back leg).
B_1D_1 = Dimensions as specified.
B_2D_2 = Dimensions of part being considered.

(iv) The dimensions to be used in the computations are net dimensions. For example, in the case of a stepladder side rail, the dimension B is to be taken as the gross thickness of the rail minus the depth of the gain for the steps. Where there is a rung hole at the center of depth of a rail, a somewhat more accurate comparison may be made by the use of the formula

$$\frac{P_2}{P_1} = \frac{B_2 D_1 (D_2^3 - d^3)}{B_1 D_2 (D_1^3 - d^3)}$$

where the symbols have the same meanings as before and d is the diameter of the hole for the rung tenon. In most instances the difference in results calculated by this and by the earlier formula will be slight.

(2) Portable stepladders. Stepladders longer than 20 feet shall not be supplied. Stepladders as hereinafter specified shall be of three types:

Type I—Industrial stepladder, 3 to 20 feet for heavy duty, such as utilities, contractors, and industrial use.

Type II—Commercial stepladder, 3 to 12 feet for medium duty, such as painters, offices, and light industrial use.

Type III—Household stepladder, 3 to 6 feet for light duty, such as light household use.

(a) General requirements.

(i) Slope is the inclination of side rails or back legs with respect to the vertical and is expressed as a deviation from the vertical per unit length of the member. Stepladders shall be so constructed, that when in the open position, the slope of the front section shall not be less than 3 1/2 inches and the slope of the back section not less than 2 inches, for each 12-inch length of side rail.

(ii) A uniform step spacing shall be employed which shall be not more than 12 inches. Steps shall be parallel and level when the ladder is in position for use.

(iii) The minimum width between side rails at the top, inside to inside, shall be not less than 11 1/2 inches. From top to bottom, the side rails shall spread at least 1 inch for each foot of length of stepladder.

(iv) When minimum thickness of side rails is used, steps shall be closely fitted into the grooves in the side rails one-eighth inch in depth with a tolerance of one thirty-second inch, and shall be firmly secured as hereinafter described; or they shall be closely fitted into metal brackets of an equivalent strength, which in turn shall be firmly secured to the side rails. The depth of groove herein provided may be increased in proportion to the thickness of side rails as provided in WAC 296-24-78007 (2)(b), (c) and (d).

(v) All stepladders shall have a top with wood or metal brackets or fittings tightly secured to the top, side rails, and back legs, to allow free swinging of the back section without excessive play or wear at the joints.

(vi) A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open positions shall be a component of each stepladder. The spreader shall have all sharp points covered or removed to protect the user. For Type III ladder, the pail shelf and spreader may be combined in one unit (the so-called shelf-lock ladder).

(vii) When measured along the front edge of the side rails, all stepladders shall measure within 3 inches of the specified length.

(viii) Where bucket shelves are provided, they shall be constructed to support a load of 25 pounds and shall be so fastened that they can be folded up when the ladder is closed.

(ix) All metal parts and fittings shall be securely attached by means of rivets, bolts, screws, or equivalent fasteners.

(b) Type I industrial stepladder.

(i) The minimum dimensions of the parts of the Type I stepladder shall be as shown in Table D-2 when made of Group 2 or Group 3 woods.

(A) The minimum thickness of side rails provides for the cutting of a groove of one-eighth inch in depth with the tolerance indicated in WAC 296-24-78007 (2)(a)(iv), and shall be increased when grooves of greater depth are used.

(ii) Steps shall be secured with at least two 6-d nails at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 3/16 inch in diameter with standard commercial tolerances, which shall pass through metal washers of sufficient thickness and diameter on each end to prevent pressing—into the side rails, and a truss block which shall be fitted between the rod and the center of each step, or by a metal angle brace on each end firmly secured to the steps and side rails, or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rails. In addition, all steps 3 5/8 inches wide and 27 inches or more in overall length and all steps 4 1/4 inches wide and 32 inches or more in overall length shall be provided with a metal angle brace at each end securely attached to the step and side rail.

(iii) The back section shall be braced by one of the following methods:

(A) The back legs shall be braced with 1 1/8-inch diameter rungs of Group 1 woods (see Table D-5), or material of equivalent strength, having 7/8-inch diameter tenons or oval wood rungs, or rectangular wood rungs of equivalent strength, spaced not more than 12 inches apart. The back legs shall be bored with holes either extending through the legs or to within three-sixteenths inch of the outside face of the legs, the size of the hole to be such as to insure a tight fit for the rung. The shoulder of the rung shall be forced firmly against the leg, and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning of the rungs. The back legs shall be braced by a metal angle brace on each side, securely fastened to the rung and the back legs, one rung to be braced for each 4 feet of length or fraction thereof, on ladders 4 feet or more in length, with braces required only on the bottom rung for ladders that are 4 feet or shorter. Where rungs are more than 28 inches in length between the back legs they shall be provided with center bearing consisting of a wood bar not less than 3/4 by 2 inches in a cross-section securely nailed to each rung passing through it and long enough to include each rung longer than 28 inches.

(B) The back leg shall be braced with horizontal wood bars of Group 1, 2, or 3 woods in Table D-5 and not less than 3/4 by 2 1/2 inches in cross-section, spaced not more than 12 inches apart. The ends of the bars shall fit into metal sockets of not less than 20-gauge (manufacturers standard) steel, or other material of equivalent strength, or into mortises of not less than one-eighth inch (tolerance of ± one-thirty-second inch) in depth in the back legs. A steel rod not less than 3/16 inch in diameter with standard commercial tolerance shall pass through the back legs, the bar, and at each end through metal washers of sufficient diameter and thickness to prevent passing into the back legs. The back legs shall also be braced by a metal angle brace on each side, securely fastened to the bar and to the legs, one bar to be so braced for at least each 4 feet of length or fraction thereof, with braces required only on bottom bar for ladders that are 4 feet or shorter. Metal sockets when used shall be attached to the back legs by rivets or by means of a rod running through the socket or equivalent thereof.

(iv) The back legs shall be reinforced by a rivet through the depth of the leg above the hinge point, by metal plates or collars at the hinge point, or by other means suitable for preventing splitting of the back leg from the hinge pin to the top.

(c) Type II commercial stepladder.

(i) The minimum dimensions of the parts of the Type II stepladder shall be as given in Table D-3 when made of Group 2 or Group 3 woods.

(A) The minimum thickness of side rails provides for the cutting of a groove of one-eighth inch in depth with the tolerance indicated in (2)(a)(iv), and shall be increased when grooves of greater depth are used.

(ii) Steps shall be secured with at least two 6-d nails at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 3/16 inch in diameter with standard commercial tolerances which shall pass through metal washers of sufficient thickness and diameter on each end to prevent pressing into the side rails, and a truss block shall be fitted between the truss rod and center of each step; or by a metal angle brace on each end firmly secured to the steps and side rails; or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rails. In addition all steps 27 inches or more in overall length shall be provided with a metal angle brace at each end securely attached to the step and side rails.

(iii) The back legs shall be braced by one of the three following methods:

(A) With 7/8-inch diameter wood dowels of Group 1 woods (see Table D-5) or material of equivalent strength having not less than 5/8-inch tenons firmly secured in the back legs and spaced not more than 12 inches apart. The back legs shall be bored with holes either extending through the legs or to within three-sixteenths inch of the outside face of the legs, the size of the hole to be such as to insure a tight fit for the dowel. The shoulder of the dowel shall be forced firmly against the leg and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning of the dowel.

(aa) A bar connecting two or more of the dowels shall be provided on all ladders of 6 feet or more. The cross-sectional dimensions of the bar shall be the same as the cross-sectional dimensions of the back legs, and the dowels shall pass through holes at the centerline of the bar. The bar shall be attached at the center of the length of the lower two dowels on a 6-foot ladder and shall extend upward one dowel for each 2 feet of added length.

(B) With wood dowels as set forth in (2)(c)(iii)(A) of this section, plus an inverted V bracing of 3/4-inch by 1 1/2-inch material through which the dowels extend, the length of the V to extend two-thirds of the way up the back.

(C) With horizontal bracing of Group 1, 2, 3, or 4 woods (see Table D-5) not less than 3/4 by 2 inches in cross-section, the ends of which shall fit into metal sockets of not less than 20-gauge (manufacturing standard), steel, or other material of equivalent strength or into mortises not less than one-eighth inch in depth in back legs. The bars shall be reinforced by steel rods not less than 3/16 inch in diameter with standard commercial tolerances which shall pass through the back legs, the bar, and, at each end, through metal washers of sufficient diameter and thickness to prevent pressing into the back legs. The spacing of such braces shall not exceed 3 feet, and there shall be one brace on 3- and 4-foot ladders, two braces on 5- and 6-foot ladders, three braces on 7- and 8-foot ladders, and four braces on 10- and 12-foot ladders. The bottom bar shall not be more than 18 inches from the bottom of the ladder, and, where only one bar is used, it shall be braced by a metal angle brace on each end securely attached to the bar and the back leg.

(d) Type III household stepladder.

(i) The minimum dimensions of the parts of the Type III stepladder shall be as follows when made of Group 2 or Group 3 woods.

	Length, 3 to 6 feet	
	Thickness (inch)	Depth (inches)
Side rails	3/4	2 1/2
Back legs	3/4	1 5/16
Steps	3/4	3
Top	3/4	5

The minimum thicknesses of side rails provide for the cutting of a groove one-eighth inch in depth with the tolerance indicated in WAC 296-24-78007 (2)(a)(iv), and shall be increased when grooves of greater depth are used.

(ii) Steps shall be secured with at least one 6-d!ht nail at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 3/16 inch in diameter with standard commercial tolerance which shall pass through metal washers of sufficient thickness and diameter to prevent pressing into the side rails, or by a metal brace at each end firmly secured to steps and side rails or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rail.

(iii) Back legs shall be braced by one of the two following methods or by construction of equivalent strength and safety:

(A) By diagonal slates of groups 1, 2, 3, or 4 wood (see Table D-5) not less than 5/16 by 1 1/4 inches securely fastened to the back legs by nails, screws, or the equivalent thereof.

(B) With horizontal bracing of Groups 1, 2, 3, or 4 wood (see Table D-5) not less than 5/8 by 1 5/8 inches in cross section, the ends of which shall fit into metal sockets of not less than 20-gauge (manufacturing standard) steel or other material of equivalent strength or into mortises not less than one-eighth inch in depth in back legs. The bars shall be reinforced by steel rods not less than 3/16 inch in diameter with standard commercial tolerances which shall pass through the back leg, the bar, and at each end through metal washers of sufficient diameter and thickness to prevent pressing into each leg. The spacing of such bars shall not exceed 3 feet, and there shall be one brace on 3- and 4-foot ladders, two braces on 5- and 6-foot ladders. The bottom bar shall be not more than 18 inches from the bottom of the ladder.

(3) Portable rung ladders. Portable rung ladders as herein specified shall be of four types, as follows: Single ladder; two-section extension ladder; section ladder; trestle and extension trestle ladder.

(a) General requirements.

(i) The base or lower portion of a ladder may have either parallel sides or flared sides in accordance with commercial practice.

(ii) Rungs shall be parallel, level, and uniformly spaced. The spacing shall be not more than 12 inches, except as hereinafter specified.

TABLE D-2

DIMENSIONS FOR TYPE I STEP LADDER

	Length, 12 feet and less		Length, 14 and 16 feet		Length, 18 and 20 feet	
	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)
Side rails	3/4	3 1/4	3/4	3 1/2	1 1/16	3 1/2
Back legs	3/4	2 1/4	3/4	2 5/8	1 1/16	2 1/4
Steps	3/4	3 5/8	3/4	4 1/4	3/4	4 1/4
Tops	3/4	5 1/2	3/4	5 1/2	3/4	5 1/2

TABLE D-3

DIMENSIONS FOR TYPE II STEP LADDER

	Length, 3 to 8 feet		Length, 10 feet		Length, 12 feet	
	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)
Side rails	3/4	2 5/8	3/4	2 5/8	3/4	3
Back legs	3/4	1 5/8	3/4	1 3/4	3/4	2
Steps	3/4	3 1/2	3/4	3 1/2	3/4	3 5/8
Tops	3/4	5	3/4	5	3/4	5

(iii) All holes for wood rungs shall either extend through the side rails or be bored so as to give at least a thirteen-sixteenths-inch length of bearing to the rung tenon. In throughbored construction, the rungs shall extend at least flush with the outside rail surface. All holes shall be located on the center line of the wide face of the side rails and shall be of such size as to insure a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail or the equivalent thereof, for the sole purpose of preventing the turning of the rung and maintaining the rung position in the side rail. Ladders used with ladder jacks shall be a 3/16 inch metal tie rod immediately under each rung.

(iv) Round rungs shall be of Group 1 woods (see Table D-5), shall be not less than 1 1/8 inches in diameter for lengths over 36 inches between side rails and 1 1/4 inches in diameter for lengths over 36 up to and including 72 inches, and shall have not less than seven-eighths-inch-diameter tenons, or rungs of equivalent strength and bearing shall be provided. When rungs are 28 inches or more in length between side rails, they shall, in addition, be provided with center bearing.

(v) Oval rungs or rungs of any other cross section may be used provided they are secured by a nail at each end or the equivalent thereof, and have at least the same strength and bearing as round rungs of the same length.

(vi) All metal parts and fittings shall be securely attached by means of rivets, bolts, screws, or equivalent fasteners.

(vii) The construction and assembly of the movable parts shall be such that they shall operate freely and securely without binding or unnecessary play.

(viii) When measured along the side rails, no rung ladder or section thereof shall be more than 4 inches shorter than the specified length.

(ix) Nonslip bases shall be securely bolted, riveted, or attached by equivalent construction to the side rails.

(x) Hooks shall be securely bolted or riveted to the side rails or equivalent construction and shall be of such dimensions as to withstand the loads imposed upon them.

(b) Single ladder.

(i) Single ladders longer than 30 feet shall not be supplied.

(ii) The minimum dimensions of the side rails of the single ladder shall be as follows when made of Group 2 or Group 3 woods:

Length of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 16	1 1/8	2 1/2
Over 16 up to and including 22	1 1/4	2 3/4
Over 22 up to and including 30	1 1/4	3

(iii) Smaller side rails will be acceptable in all ladders of this type when reinforced by a steel wire, rod, or strap running the length of the side rails and adequately secured thereto. Where such reinforcement is used, the reinforced rails shall be equivalent in strength to the side rails specified in this WAC 296-24-78007 (3)(b)(ii).

(iv) The width between the side rails at the base, inside to inside, shall be at least 11 1/2 inches for all ladders up to and including 10 feet. Such minimum widths shall be increased at least one-fourth inch for each additional 2 feet of length.

(c) Two-section ladder.

(i) Two-section extension ladders longer than 60 feet shall not be supplied. All ladders of this type shall consist of two sections, one to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered.

(ii) The minimum dimensions of the side rails of the two-section extension ladder shall be not less than specified in Table D-4.

(iii) The minimum dimensions of side rails set forth in Table D-4 are based on the maximum working length, which is the size of ladder less the minimum overlap, which shall be as follows:

Size of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

(iv) Smaller side rails will be acceptable in all ladders of this type when reinforced by a steel wire, rod, or strap running the length of the side rails and adequately secured thereto. Where such reinforcement is used, the reinforced rails shall be equivalent in strength to the side rails specified in Table D-4.

(v) The minimum distance between side rails of the bottom section, inside to inside, shall be 14 1/2 inches on ladders up to and including 28 feet; 16 inches on all ladders over 28 feet up to and including 40 feet; 18 inches on all ladders over 40 feet.

(vi) Rungs. Rungs shall be of white oak, ash, hickory, or wood of equivalent strength not less than 1 1/8 inches in diameter with at least a 7/8 inch diameter tenon. Where the distance between side rails is more than 28 inches rungs shall be supported in the center. Holes for wood rungs shall either extend through the side rails or be bored to give at least a 13/16 inch length of bearing to the rung tenon. In throughbored construction the rungs shall extend at least flush with the outside rail surface. Holes shall be located on the center line of the wide face of the side rails and shall be of such size as to be a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning. A 3/16 inch diameter tie rod shall be placed under each rung.

(vii) All locks and guide irons shall be of metal and shall be of such construction and strength as to develop the full strength of the side rails. All locks shall be positive in their action. The guide irons shall be securely attached and so placed as to prevent the upper section from tipping or falling out while raising, lowering, or in use.

(viii) Ladders of this type may be equipped with a rope and pulley, which shall be securely attached to the ladder in such manner as not to weaken either the rungs or the side rails. The pulley shall be not less than 1 1/4 inches in diameter.

(A) The rope used with the pulley shall be not less than five-sixteenths inch in diameter having a minimum breaking strength of 560 pounds, and shall be sufficient length for the purpose intended.

(d) Sectional ladder.

(i) Assembled combinations of sectional ladders longer than lengths specified in (3)(d)(ii) shall not be used.

(ii) The minimum dimensions of side rails shall be as follows for Group 2 or Group 3 woods:

Assembled length of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 21	1 1/8	2 3/4
Over 21 up to and including 31	1 1/8	3 1/8

TABLE D-4

DIMENSIONS OF SIDE RAILS FOR TWO-SECTION LADDER

Size of ladder, overall length (feet)	Rail		
	Thickness (inches)		Depth (inches)
For group 2 woods			
16	1 1/16	X	2
20	1 1/16	X	2 1/4
24	1 1/16	X	2 1/2
28	1 1/16	X	2 3/4
32	1 1/8	X	2 3/4
36	1 5/16	X	2 3/4
40	1 5/16	X	2 3/4
44	1 5/16	X	3
For group 3 woods			
16	1 1/8	X	2
20	1 1/8	X	2 1/4
24	1 1/8	X	2 1/2
28	1 1/8	X	2 3/4
32	1 5/16	X	2 3/4
36	1 5/16	X	3
40	1 3/8	X	3
44	1 3/8	X	3 1/4
48-52	1 3/8	X	3 3/4
56-60	1 5/8	X	3 3/4

(iii) Ladders of this type shall have either straight sides slightly converging toward the top of each section, or shall have flaring sides at the bottom of the first (or bottom) section, with the top section having converging side rails to a width that shall be not less than 4 inches. Except for the top section, the minimum width between side rails shall be 11 inches.

(A) Adjacent sections shall be jointed by means of a groove in the bottom end of each rail of the upper of the two sections setting firmly over extensions outside the side rails, of the topmost rung of the next lower section and, at the same time, a groove in the top end of each rail of the lower of the two sections setting firmly over the bottom rung, inside the side rails, of the section next above.

(B) The distance between the two rungs (top-most rung of one section, bottom rung of the section next above) mentioned in WAC 296-24-78007 (3)(d)(iii)(A) shall not be less than 1 foot.

(C) The fit between rail grooves and rungs mentioned in WAC 296-24-78007 (3)(d)(iii)(A) shall be such as to provide a good fit without binding or unnecessary play.

(D) The grooved ends of the sections shall be reinforced with a metal plate of not less than 18-gauge (manufacturing standard) material properly secured thereto, and a rivet

adjacent to the groove, extending through the depth of the rail, or the equivalent thereof.

(e) Trestle and extension trestle ladder.

(i) Trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet shall not be supplied.

(ii) The minimum dimensions of the side rails of the trestle ladder, or the base sections of the extension trestle ladder, shall be as follows for Group 2 or Group 3 woods.

Size of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 16	1 5/16	2 3/4
Over 16 up to and including 20	1 5/16	3

The minimum dimensions of the side rails of the extension section of the extension trestle ladder, which shall have parallel sides, shall be as follows for Group 2 or Group 3 woods.

Size of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 12	1 5/16	2 1/4
Over 12 up to and including 16	1 5/16	2 1/2
Over 16 up to and including 20	1 5/16	2 3/4

(iii) Trestle ladders and base sections of extension trestle ladders shall be so spread that when in an open position the spread of the trestle at the bottom, inside to inside, shall be at least 5 1/2 inches per foot of the length of the ladder.

(iv) The width between the side rails at the base of the trestle ladder and the base sections of the extension trestle ladder shall be at least 21 inches for all ladders and sections up to and including 6 feet. Longer lengths shall be increased at least 1 inch for each additional foot of length. The width between the side rails of the extension sections of the trestle ladder shall be not less than 12 inches.

(v) The tops of the side rails of the trestle ladder and of the base section of the extension trestle ladder shall be beveled or equivalent construction, and shall be provided further with a metal hinge to prevent spreading.

(vi) A metal spreader or locking device to hold the front and back sections in an open position, and to hold the extension section securely in the elevated position, shall be a component of all extension trestle ladders and all trestle ladders over 12 feet in length.

(vii) Rungs shall be parallel and level. On the trestle ladder, or on the base sections of the extension trestle ladder, rungs shall be spaced not less than 8 inches or more than 18 inches apart; on the extension section of the extension trestle ladder, rungs shall be spaced not less than 6 inches or more than 12 inches apart.

(viii) Rungs. Rungs shall be of white oak, ash, hickory, or wood of equivalent strength not less than 1 1/8 inches in diameter with at least a 7/8 inch diameter tenon. Where the distance between side rails is more than 28 inches rungs shall be supported in the center. Holes for wood rungs shall either extend through the side rails or be bored to give at least a 13/16 inch length of bearing to the rung tenon. In throughbored construction the rungs shall extend at least flush with the outside rail surface. Holes shall be located on the center line of the wide face of the side rails and shall be of such size as to be a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning. A 3/16 inch diameter tie rod shall be placed under each rung.

(4) Special-purpose ladders. All special-purpose ladders shall comply with the appropriate requirements of WAC 296-24-78007 (1), (2) and (3), except as hereinafter modified in this subsection.

(a) Platform stepladder. A platform stepladder is a modification of a portable stepladder with a working platform provided near the top.

(i) Platform stepladders shall be made in accordance with the requirements of Type I stepladders or in accordance with the requirements for Type II stepladders.

(ii) The slope of the back section shall be such that a vertical from the back edge of the platform will strike the floor at a distance measured toward the front section of not less than 3 inches from the base of the back section.

(iii) The minimum width between side rails at the platform shall be not less than 15 inches.

(iv) The back legs and side rails shall extend at least 24 inches above the platform and shall be connected with a top member to form a three-sided rail, or equivalent construction shall be provided.

(v) Platforms shall be so constructed as to be capable of supporting a load of 200 pounds placed at any point on the platform.

(vi) A separate spreader may be omitted from platform ladders in which the height to the platform is 6 feet or less. If the spreader is omitted, the platform shall be so designed as to function as a spreader or locking device to hold the front and back sections securely in an open position, with the connection between side rails and back legs being through the metal parts of the platform. The wood parts of a combined wood and metal platform functioning as a spreader shall not be depended upon to contribute to the spreading or locking action.

(b) Painter's stepladder.

(i) Painter's stepladders longer than 12 feet shall not be supplied.

(ii) Painter's stepladders shall be made in accordance with the requirements of Type II stepladders except for the following:

(A) The top may be omitted.

(B) A rope spreader may be substituted for the metal spreader required in WAC 296-24-78007 (2)(a)(vi). The rope shall not be less than No. 6 sash cord or its equivalent.

(c) Mason's ladder. A mason's ladder is a special type of single ladder intended for use in heavy construction work.

(i) Mason's ladders longer than 40 feet shall not be supplied.

(ii) The minimum dimensions of the side rails when made of Group 2 or Group 3 woods and rungs (Group 1 woods) of the mason's ladder shall be as follows:

Length of ladder (feet)	Side rails Thickness (inches	Depth (inches)	Diameter Rung (inches)	Tenon (inches)
Up to and including 22	1 5/8	3 5/8	1 3/8	1
Over 22 up to and including 40	1 5/8	4 1/2	1 3/8	1

(iii) The width between the side rails at the bottom rung, inside to inside, shall be not less than 12 inches for all ladders up to and including 10 feet. Such minimum widths shall be increased by at least one-fourth inch for each additional 2 feet of length.

(iv) Rungs shall be parallel and level and shall be spaced not less than 8 inches or more than 12 inches apart.

(5) Trolley and side-rolling ladders.

(a) Length. Trolley ladders and side-rolling ladders longer than 20 feet should not be supplied.

(b) Dimensions. The dimensions of the side rails shall not be less than the following for Group 2 or Group 3 woods.

Length of side rails (feet)	Thickness (inch)	Depth (inches)
Up to and including 10	3/4	3
Over 10 up to and including 20	3/4	3 3/4

The minimum thicknesses of side rails provide for the cutting of a groove not over one-eighth inch in depth and shall be increased when grooves of greater depth are used. Flat steps shall have the following minimum dimensions for Group 2 or Group 3 woods.

Length of side rails (feet)	Thickness (inch)	Depth (inches)
Up to and including 16	3/4	3
Over 16 up to and including 20	3/4	3 1/4
Over 20 up to and including 24	3/4	3 1/2
Over 24 up to and including 28	3/4	4

(c) Width. The width between the side rails, inside to inside, shall be at least 12 inches.

(d) Step attachment. Flat steps shall be inset in the side rails one-eighth inch and secured with at least two 6-d nails at each end or the equivalent thereof. They shall be reinforced with angle braces or a 3/16-inch steel rod.

(e) Locking device. Locking devices should be provided on all trolley ladders.

(f) Tracks.

(i) Tracks shall be wood, or metal (excluding cast iron), or a combination of these materials.

(ii) Tracks for the top end of ladders shall be fastened securely and shall be so constructed that the wheels will not jump the track. Tracks shall be so designed as to provide for all probable loads to which they will be subjected.

(iii) The supports shall be securely fastened by the lag screws, machine, hook, or toggle bolts, or their equivalent.

(iv) Track for side-rolling ladders shall be supported by metal or wood brackets securely screwed or bolted to shelving or other permanent structure at not over 3 feet.

(g) Wheel carriages.

(i) Wheel carriages shall be so designed as to provide for all loads to which they will be subjected. Two-point suspension should be used.

(ii) The wheel carriage for the top end of the ladder shall be securely fastened to the top of the ladder with metal brackets bolted either to the side rails or to the top step. When bolted to the top step, this step shall be secured to the side rails with metal braces in addition to those otherwise provided. The wheel carriage shall be so designed that a loose or broken wheel will not allow the ladder to drop or become detached from the track.

(iii) The wheel carriage for the bottom end of the ladder shall be securely fastened to the bottom of the ladder.

(iv) The wheels at the upper end of the ladder shall have minimum wheel base of 8 inches.

(v) When wheels are used at the bottom of the ladder, there shall be at least one wheel supporting each side rail.

(vi) Running gear for bottoms of both trolley and side-rolling ladders shall be so designed and constructed as to provide for any load to which they will be subjected.

(6) Jacob's ladders. Portable type ladders fabricated with side rails of rope, wire, chain, etc., and having rigid rungs. Care and use shall be as follows:

(a) Jacob's ladders shall not be used in lengths longer than 30 feet.

(b) Side rails shall be fabricated from rope, metal bars, wire, chain, or material of substantial construction.

(c) Rungs shall be evenly spaced from 12 to 16 inches apart and not less than 16 inches in length.

(d) Rungs shall be fabricated from wood, metal, or other substantial construction and be securely fastened to the side rails.

(e) The assembled ladder and its means of suspension shall be capable of supporting a minimum of 500 pounds with a safety factor of 5 to 1, unless the side rails are of manila rope which requires a safety factor of 10 to 1.

(f) Care and use of Jacob's ladders shall be in accordance with the applicable portions of WAC 296-24-78009.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-78007, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-78007, filed 5/9/73 and Order 73-4, § 296-24-78007, filed 5/7/73.]

WAC 296-24-78009 Care and use of ladders. (1) Care. To insure safety and serviceability the following precautions on the care of ladders shall be observed:

(a) Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the moveable parts shall operate freely without binding or undue play.

(b) Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.

(c) Frayed or badly worn rope shall be replaced.

(d) Safety feet and other auxiliary equipment shall be kept in good condition to insure proper performance.

(e) Ladders should be stored in such a manner as to provide ease of access or inspection, and to prevent danger of accident when withdrawing a ladder for use.

(f) Wood ladders, when not in use, should be stored at a location where they will not be exposed to the elements, but where there is good ventilation. They shall not be stored near radiators, stoves, steam pipes, or other places subjected to excessive heat or dampness.

(g) Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and permanent set.

(h) Ladders carried on vehicles should be adequately supported to avoid sagging and securely fastened in position to minimize chafing and the effects of road shocks.

(i) Ladders should be kept coated with a suitable protective material. The painting of ladders is satisfactory providing the ladders are carefully inspected prior to painting by competent and experienced inspectors acting for, and responsible to, the purchaser, and providing the ladders are not for resale.

(j) Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "dangerous, do not use."

(k) Rungs should be kept free of grease and oil.

(2) Use. The following safety precautions shall be observed in connection with the use of ladders:

(a) Portable rung and cleat ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support). The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

(b) Ladders for which dimensions are specified should not be used by more than one person at a time nor with ladder jacks and scaffold planks where use by more than one person is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.

(c) Portable ladders shall be so placed that the side rails have a secure footing. The top rest for portable rung and cleat ladders shall be reasonably rigid and shall have ample strength to support the applied load.

(d) Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

(e) Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

(f) To support the top of the ladder at a window opening, a board should be attached across the back of the ladder, extending across the window and providing firm support against the building walls or window frames.

(g) When ascending or descending, the user should face the ladder.

(h) Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.

(i) Short ladders shall not be spliced together to provide long sections.

(j) Ladders made by fastening cleats across a single rail shall not be used.

(k) Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes.

(l) Tops of the ordinary types of stepladders shall not be used as steps.

(m) On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

(n) Portable rung ladders with reinforced rails (see WAC 296-24-78007 (3)(b)(iii) and (iv)) shall be used only with the metal reinforcement on the under side. Ladders of this type should be used with great care near electrical conductors, since the reinforcing itself is a good conductor.

(o) No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least three feet above the point of support, at eave, gutter, or roof line.

(p) Adjustment of extension ladders should only be made by the user when standing at the base of the ladder, so that the user may observe when the locks are properly engaged. Adjustment of extension ladders from the top of the ladder (or any level over the locking device) is a dangerous practice and should not be attempted. Adjustment should not be made while the user is standing on the ladder.

(q) Middle and top sections of sectional or window cleaner's ladders should not be used for bottom section unless the user equips them with safety shoes.

(r) Extension ladders should always be erected so that the upper section is resting on the bottom section.

(s) The user should equip all portable rung ladders with nonslip bases when there is a hazard of slipping. Nonslip bases are not intended as a substitute for care in safety placing, lashing, or holding a ladder that is being used upon oily metal, concrete, or slippery surfaces.

(t) The bracing on the back legs of step ladders is designed solely for increasing stability and not for climbing.

(u) When service conditions warrant, hooks may be attached at or near the top of portable ladders to give added security.

(v) Stepladders shall not be used as single ladders.

(w) Separate ladders for ascending and descending shall be provided in building construction of more than two stories in height, or where traffic is heavy.

(x) Where one broad ladder is used, a center rail shall be provided, and each side plainly marked "up" and "down."

(y) Ladder rungs shall not be used to support more than one section of plank, and not more than two persons shall work on such section of planking at one and the same time. When two persons are working on the same section of plank, their work should be so arranged that their weight is equally distributed between two ladders as nearly as possible.

(z) When ladders are used of a length sufficient to possess a tendency to spring when weight is applied, they shall be provided with bracing to overcome same. This applies particularly to extension ladders.

(aa) Before climbing ladders, workers shall see that their shoes are free and clean of greasy or slippery substances.

(bb) When working from a stepladder over five feet high a worker shall not stand on a step higher than the third step from the top of the stepladder.

(cc) Ladders shall not be placed or used in elevator shafts or hoistways except where used by workers engaged in work within such shafts or hoistways, and then they shall be protected from objects falling from operations at higher elevations in or adjoining the shaft.

(dd) Workers shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

(ee) Ladders shall pass the following test:

When tested as a simple beam with a support under each end and the center rung loaded with a two hundred pound load, the ladder must support this load for ten minutes without permanent set and without showing any sign of failure. The maximum deflection shall not be greater than shown in the enclosed table.

Lengths of extended ladder in feet	Distance of supports from ends, in inches	Total deflection, in inches
12	3	2 3/4
16	3	6 3/4
20	3	11 1/2
24	3	16 1/2
28	3	21 1/2
30	3	23 1/2
34	6	26
36	6	29
40	6	37
44	9	41

(ff) When working from a ladder over twenty-five feet from the ground or floor, the ladder shall be secured at both top and bottom.

(gg) No type of work shall be performed on a ladder over twenty-five feet from the ground or floor that requires the use of both hands to perform the work, unless a safety belt is worn and the safety lanyard is secured to the ladder.

(hh) Work such as sandblasting or spray painting, that requires wearing eye protection, respirators, and handling of pressure equipment, shall be limited to not over thirty feet from the ground or floor while working on a ladder.

TABLE D-5

CLASSIFICATION OF VARIOUS SPECIES OF WOOD ACCEPTABLE FOR USE IN LADDER

The species are listed alphabetically within each group. The position of any species within a group therefore bears no relation to its strength or acceptability.

Where ladders are desired for use under conditions favorable to decay, it is recommended that the heartwood of decay-resistant species be used, or that the wood be given a treatment with a wood preservative. The species having the most durable heartwood are marked with an asterisk (*), and these should be preferred where resistance to decay is required.

GROUP 1

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed two thousand one hundred fifty pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than ten percent smaller for each cross-section dimension, or the thickness may remain unchanged, in which case the width may not be more than fifteen percent smaller if used edgewise (as in a rail) or twenty-five percent smaller if used flatwise (as in a tread).

White ash	Fraxinus americana, pennsylvanica, quadrangulata
Beech	Fagus grandifolia
Birch	Betula lenta, alleghaniensis, nigra (2)
Rock elm	Ulmus themasii
Hickory	Carya ovata, laciniosa, tomentosa, glabra
Locust*	Robinia pseudoacacia, Gleditsia triacanthos
Hard maple	Acer nigrum, saccharum
Red maple	Acer rubrum (3)
Red oak	Quercus velutina, marilandica, kelloggii, falcata var. pagodaefolia, laurifolia, ellipsoidalis, rubra, nuttallii, palustris, coccinea, shumardii, falcata, laevis, phellos
White oak	Quercus arizonica, douglasii, macrocarpa, lobata, prinus, muehlenbergii, emoryi, gambelii, oblonifolia, virginiana, garryana, lyrata, stellata, michauxii, bicolor, alba
Pecan	Carya illinoensis, cordiformis, myristicaeformis (4), aquatica (4)
Persimmon	Diospryros virginiana

GROUP 2

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed two thousand pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than seven and one-half percent smaller for each cross-section dimension, or the thickness may remain unchanged, in which case the width may be not more than eleven percent smaller if used edgewise (as in a rail) or twenty percent smaller if used flatwise (as in a tread).

Douglas fir (coast region)	Pseudotsuga menziesii
Western larch	Larix occidentalis
Southern yellow pine	Pinus taeda, palustris, echinata, elliotii, rigida, virginiana

GROUP 3

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed one thousand six hundred pounds per square inch.

Red alder	Alnus ruba, rhombifolia (2)
Oregon ash	Fraxinus latifolia
Pumpkin ash	Fraxinus profunda
Alaska cedar*	Chamaecyparis nootkatensis
Port Orford cedar*	Chamaecyparis lawsoniana
Cucumber	Magnolia acuminata
Cypress*	Taxodium distichum
Soft elm	Ulmus americana, rubra
Douglas fir (Rocky Mountain type)	Pseudotsuga menziesii var. glauca
Noble fir	Abies procera
Gum	Liquidambar styraciflua
West coast hemlock	Tsuga heterophylla
Magnolia	Magnolia grandiflora
Oregon maple	Acer macrophyllum
Norway pine	Pinus resinosa
Poplar	Liriodendron tulipifera
Redwood*	Sequoia sempervirens
Eastern spruce	Picea glauca, rubens

Sitka spruce	Picea sitchensis
Sycamore	Platanus occidentalis
Tamarack	Larix laricina
Tupelo	Nyssa aquatica, sylvatica

GROUP 4

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed one thousand three hundred seventy-five pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions shall be at least five percent greater for each cross-section dimension, or the thickness may remain unchanged, in which case the width shall be at least seven and one-half percent greater if used edgewise (as in a rail) or fifteen percent greater if used flatwise (as in a tread).

Aspen	Populus tremuloides, grandidentata
Basswood	Tilia americana, heterophylla (2)
Buckeye	Aesculus octandra, glabra (2)
Butternut	Juglanscinerea
Incense cedar*	Libocedrus decurrens
Western red cedar*	Thuja plicata
Cottonwood	Populus balsamifera, deltiodes, sargentii, heterophylla
White fir	Abies concolor, grandis, amabilis, lasiocarpa, magnifica
Hackberry	Celtis occidentalis, laevigata (2)
Eastern hemlock	Tsuga canadensis
Holly	Ilex opaca
Soft maple	Acer saccharinum
Lodgepole pine	Pinus contorta
Idaho white pine	Pinus monticola
Northern white pine	Pinus strobus
Ponderosa pine	Pinus ponderosa, pinus jeffreyi (Jeffrey pine)
Sugar pine	Pinus lambertiana
Engelmann spruce	Picea engelmannii

Note 1: The common and scientific names of species used conform to the American Lumber Standards nomenclature and in most cases to U.S. Department of Agriculture Handbook No. 41, "Check List of Native and Naturalized Trees of the United States (including Alaska)," by Elbert L. Little. These publications can be obtained from the U.S. Government Printing Office, North Capital and "H" Streets Northwest, Washington D.C. 20401.

Note 2: This species is commonly associated with others of the same genus under American Lumber Standards nomenclature, but no strength tests have been made on it at the Forest Products Laboratory.

Note 3: Included under soft maple in American Lumber Standards nomenclature.

Note 4: This species is not included under this common name in American Lumber Standards nomenclature, but strength data are available and it is accordingly included in this classification.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-78009, filed 7/20/94, effective 9/20/94; 88-11-021 (Order 88-04), § 296-24-78009, filed 5/11/88. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-08-115 (Order 79-9), § 296-24-78009, filed 7/31/79; Order 76-6, § 296-24-78009, filed 3/1/76; Order 73-5, § 296-24-78009, filed 5/9/73 and Order 73-4, § 296-24-78009, filed 5/7/73.]

WAC 296-24-795 Portable metal ladders.

[Order 73-5, § 296-24-795, filed 5/9/73 and Order 73-4, § 296-24-795, filed 5/7/73.]

WAC 296-24-79501 Terms. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-79503 through 296-24-79507 unless the context requires otherwise.

(1) Ladder. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

(2) Step ladder. A step ladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

(3) Single ladder. A single ladder is a nonself-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designated by the overall length of the side rail.

(4) Extension ladder. An extension ladder is a nonself-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

(5) Platform ladder. A self-supporting ladder of fixed size with a platform provided at the working level. The size is determined by the distance along the front rail from the platform to the base of the ladder.

(6) Sectional ladder. A sectional ladder is a nonself-supporting portable ladder, nonadjustable in length, consisting of two or more sections so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

(7) Trestle ladder. A trestle ladder is a self-supporting portable ladder, nonadjustable in length, consisting of two sections, hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge.

(8) Extension trestle ladder. An extension trestle ladder is a self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

(9) Special-purpose ladder. A special-purpose ladder is a portable ladder which represents either a modification or a combination of design or construction features in one of the general-purpose types of ladders previously defined, in order to adapt the ladder to special or specific uses.

[Order 73-5, § 296-24-79501, filed 5/9/73 and Order 73-4, § 296-24-79501, filed 5/7/73.]

WAC 296-24-79503 Requirements. (1) General. Specific design and construction requirements are not part of this section because of the wide variety of metals and design possibilities. However, the design shall be such as to produce a ladder without structural defects or accident hazards such as sharp edges, burrs, etc. The metal selected shall be of sufficient strength to meet the test requirements, and shall be protected against corrosion unless inherently corrosion-resistant.

(a) Because of the varied conditions, and the wide variety of ladder uses, ladders may be designed with parallel side rails, with side rails varying uniformly in separation along the length (tapered), or with side rails flaring at the base to increase stability.

(b) The design of the side rails shall be such as to insure a product which will conform to the requirements of this section.

(c) The spacing of rungs or steps shall be on 12-inch centers.

(d) Rungs or steps to side rail connections should be so constructed as to insure rigidity as well as strength.

(e) Rungs and steps shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize the possibility of slipping.

(f) Hardware shall meet strength requirements of the ladder's component parts, and shall be of a material that is protected against corrosion unless inherently corrosion-resistant. Metals shall be so selected as to avoid excessive galvanic action.

(2) General specifications—Straight and extension ladders.

(a) The minimum width between side rails of a straight ladder or any section of an extension ladder shall be 12 inches.

(b) The length of single ladders or individual sections of ladders shall not exceed 30 feet. Two-section ladders shall not exceed 48 feet in length and over two-section ladders shall not exceed 60 feet in length.

(c) Based on the nominal length of the ladder, each section of a multisection ladder shall overlap the adjacent section by at least the number of feet stated in the following:

Nominal length of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36, up to and including 48	4
Over 48, up to 60	5

(d) Extension ladders shall be equipped with positive stops which will insure the overlap specified in the table above.

(e) Extension ladders may be equipped with a rope and pulley which shall be securely attached to the ladder in such a manner as not to weaken either the rungs or the side rails. The pulley shall be not less than 1 1/4 inches in diameter.

(i) The rope used with the pulley shall be not less than five-sixteenths inch in diameter, having a minimum breaking strength of 560 pounds, and shall be of sufficient length for the purpose intended.

(3) General specifications—Step ladders.

(a) Step ladders shall be designed and constructed to give a minimum slope of 3 1/2 inches per foot of length of the front section, and a minimum slope of 2 inches per foot of length of the back section, except that special ladders designed for straight-in-wall work shall maintain at least 1 1/4-inch back slope per foot of length.

(b) The minimum width between the side rails at the top step shall be 12 inches. The width spread of the side rails shall increase a minimum of 1 inch per foot of length. The width of the step or tread shall not be less than 3 inches.

(c) The length of a stepladder is measured by the length of the front rail. To be classified as a standard length ladder, the measured length shall be within plus or minus one-half inch of the specified length. Stepladders shall not exceed 20 feet in length.

(d) The pail shelf shall be designed to fold completely within the ladder.

(e) The back section may be designed with either rungs or cross bracing as long as it meets the general and testing requirements.

(f) Steps shall be corrugated, knurled, dimpled, coated with skid-resistant materials, or otherwise treated to minimize the possibility of slipping.

(g) The bottoms of the four rails are to be supplied with insulating nonslip material.

(h) A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each stepladder. The spreader shall have all sharp points or edges covered or removed.

(4) General specifications—Trestles and extension trestle ladders.

(a) Trestle ladders or extension sections or base sections of extension trestle ladders shall be not more than 20 feet in length.

(b) The minimum distance between side rails of the trestle or extension section at the narrowest point shall not be less than 12 1/2 inches. The width spread shall not be less than 1 inch per foot of length of side rail.

(c) Spread of base when section is open shall not be less than 5 1/2 inches per foot of base section side rail.

(d) The extension locking device shall be designed to withstand all load tests.

(e) A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each trestle ladder. The spreader shall have all sharp points or edges covered or removed.

(5) General specifications—Platform ladders.

(a) The length of a platform ladder shall not exceed 20 feet. The length of a platform ladder shall be measured along the front rail from the floor to the platform.

(b) Minimum width between side rails at platform level shall be 14 inches. Width spread shall not be less than 1 inch per foot of rise.

(c) Slope of the front rail when unit is in open position shall not be less than 3 1/2 inches per foot of rise, and the back section shall have a minimum slope of 1 inch per foot of rise.

(d) The platform shall be at least 20 inches from the top of the ladder, and shall have an area of not less than 200 square inches nor more than 400 square inches.

(e) The back legs and side rails of a platform ladder shall extend at least 20 inches above the platform and shall be connected with the top member to form a three-sided top guard rail, or equivalent construction shall be provided.

(f) Spreaders shall be provided where the hinging apparatus is not designed to lock the unit open.

[Order 73-5, § 296-24-79503, filed 5/9/73 and Order 73-4, § 296-24-79503, filed 5/7/73.]

WAC 296-24-79505 Testing. (1) General. The following tests are intended to insure uniform testing methods for metal ladders.

(2) Straight and extension ladders.

(a) Ladder inclined strength is measured by placing the ladder unit in a flat, horizontal position, supported 6 inches from the ends of the side rails. When testing extensions, the

unit is opened to the required overlap. A load of 200 pounds is applied equally to the side rails at the center of the unit by means of a beam. The ladder must withstand this test with no permanent deformation or other visible weakening of the structure. This test is based on a 200-pound person using the ladder, set at 75 1/2° to the ground. With the person on the center rung, the component of the 200-pound weight at right angles to the ladder will be 50 pounds. Applying the load factor of 4, the test weight becomes 200 pounds.

(b) Test unit need only be of sufficient length for test purposes and is to consist of the base and fly sections of an extension ladder with all the hardware or fittings attached. The ladder unit is placed in a vertical position and a downward load of 775 pounds equally distributed on the ends of the side rails of the upper portion of the test unit. The unit shall withstand this test with no permanent deformation or other visible weakening of the structure.

(c) A test unit of at least three rungs is to be used from the maximum width portion of the ladder. A load of 800 pounds shall be applied to a 3 1/2-inch wide block resting on the center of the widest rung. A rung of 14 inches or less in length shall withstand this test with no permanent deformation or other visible weakening of the structure. A rung of more than 14 inches in length may have a permanent deflection of not more than one-eighth inch provided the rung cross section is not deformed and there is no other visible weakening of the structure.

(d) With at least a three-rung test unit set in a vertical position, a load of 800 pounds shall be applied to a 3 1/2-inch wide block resting on the center rung as near to the side rail as possible. On removing the load, the unit must show no indication of failure in the fasteners attaching the rungs to the side rail.

(e) The rung shall be so secured to the side rail that a torque load of 360 inch-pounds applied to the rung at a side rail shall cause no visible relative motion between the rung and the side rail.

(f) With the ladder extended to its maximum working length, and resting horizontally on level supports located 6 inches from each end of the ladder, a weight of 50 pounds shall be suspended from one of the side rails midway between supports.

The deflection of the loaded rail, and the difference in deflection between the loaded and unloaded rails shall not exceed the values in Table D-6.

(g) Deflections in Table D-6 are to be determined by measuring, at the midpoint between supports, the distance from the outside edges of both rails to the floor or other reference surface both before and after the test load of 50 pounds is applied to one rail of the ladder. The test is to be repeated loading the other rail of the ladder. The angle (a) between the loaded and unloaded rails and the horizontal is to be calculated from the trigonometric equation:

$$\text{Sine } a = \frac{\text{Difference in deflection}}{\text{Ladder width}}$$

TABLE D-6

TABLE OF DEFLECTIONS

Length of ladder in feet	Maximum deflection of loaded rail in inches	Maximum difference in deflection between loaded and unloaded rails in degrees from horizontal
20	3.0	3.6
24	3.8	4.7
28	4.6	5.4
32	5.5	5.7
36	6.4	6.1
40	7.2	6.5
44	8.0	6.5
48	8.8	6.5

(3) Step, trestle, extension trestle, and platform ladders.

(a) Load test of the entire ladder is made with the ladder in an open position, and an 800-pound load applied to the center of the top. Resistance to side rail bending is tested by placing an 800-pound load on the center of the middle step. The strength of the step section is tested by applying an 800-pound load to a 3 1/2-inch-wide block resting on the center of the longest or bottom step. The pail shelf shall be so constructed as to support a distributed load of 50 pounds.

(i) In each test case, the unit must withstand the load without failure or permanent deformation.

(b) Set ladder in open position on a level floor. Place a 200-pound distributed load on the top step. The ladder is then subjected to a horizontal pulling load, applied at the top step, of 12-pound force to the side; 58-pound force to the front; 33-pound force to the back. In each test, all side rails must remain on the floor.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-79505, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-79505, filed 5/9/73 and Order 73-4, § 296-24-79505, filed 5/7/73.]

WAC 296-24-79507 Care and maintenance and use of ladders. (1) General. To get maximum serviceability, safety, and to eliminate unnecessary damage of equipment, good safe practices in the use and care of ladder equipment shall be employed by the users.

The following rules and regulations are essential to the life of the equipment and the safety of the user.

(2) Care of ladders.

(a) Ladders, shall be handled with care and not subject to unnecessary dropping, jarring, or misuse. (They are designed for a specific purpose or use; therefore, any variation from this use constitutes a mishandling of the equipment.)

(b) Ladders shall be stored on racks designed to protect the ladder when not in use. The racks shall have sufficient supporting points to prevent any possibility of excessive sagging.

(c) Ladders transported on vehicles shall be properly supported. Supporting points shall be of a softer material, such as hardwood or rubber-covered iron pipe, to minimize the chafing and effects of road shock. (Tying the ladder to each support point will greatly reduce damage due to road shock.)

(d) Ladders shall be maintained in good usable condition at all times. Hardware fittings and accessories shall be checked frequently and kept in good working condition.

(e) Ropes or cables shall be inspected frequently and replaced if defective.

(f) Complete ladder inspection shall be periodical. If a ladder is involved in any of the following, immediate inspection is necessary:

(i) If ladders tip over, inspect ladder for side rails dents or bends, or excessively dented rungs; check all rung-to-side-rail connections; check hardware connections; check rivets for shear.

(ii) If ladders are exposed to excessive heat as in the case of fire, the ladder should be inspected visually for damage and tested for deflection and strength characteristics. In doubtful cases, refer to manufacturer.

(iii) If ladders are to be subjected to certain acids or alkali solutions, a protective coating such as asphalt and varnish should be applied to the equipment.

(iv) If ladders are exposed to oil and grease, equipment should be cleaned of oil, grease, or slippery materials. This can easily be done with a solvent or steam cleaning.

(g) Ladders having defects are to be marked and taken out of service until repaired by either maintenance department or the manufacturer.

(3) Use of ladders.

(a) Portable nonself-supporting ladders shall be erected at a pitch of 75 1/2 degrees for maximum balance and strength. (A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.)

Note: Portable ladders are designed as a one-person working ladder based on a 200-pound load.

(b) Workers shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

(c) The ladder base section must be placed with a secure footing. Safety shoes of good substantial design should be installed on all ladders. Where ladders with no safety shoes or spikes are used on hard, slick surfaces, a foot-ladder board should be employed.

(d) The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment. Such an attachment should be substantial and large enough to support the ladder under load.

(e) When ascending or descending, the climber must face the ladder.

(f) Ladders must not be tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.

(g) Ladders should not be used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended, unless specifically recommended for use by the manufacturer.

(h) See chapter 296-24 WAC Part L for work practices to be used when work is performed on or near electrical circuits.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-79507, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-79507, filed 11/22/91, effective 12/24/91; Order 76-6, § 296-24-79507, filed 3/1/76; Order 73-5, § 296-24-79507, filed 5/9/73 and Order 73-4, § 296-24-79507, filed 5/7/73.]

WAC 296-24-810 Fixed ladders.

[Order 73-5, § 296-24-810, filed 5/9/73 and Order 73-4, § 296-24-810, filed 5/7/73.]

WAC 296-24-81001 Definitions. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-81003 through 296-24-81007 unless the context requires otherwise.

(1) Ladder. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

(2) Fixed ladder. A fixed ladder is a ladder permanently attached to a structure, building, or equipment.

(3) Individual-rung ladder. An individual-rung ladder is a fixed ladder each rung of which is individually attached to a structure, building, or equipment.

(4) Rail ladder. A rail ladder is a fixed ladder consisting of side rails joined at regular intervals by rungs or cleats and fastened in full length or in sections to a building, structure, or equipment.

(5) Railings. A railing is any one or a combination of those railings constructed in accordance with WAC 296-24-75003 through 296-24-75011. A standard railing is a vertical barrier erected along exposed edges of floor openings, wall openings, ramps, platforms, and runways to prevent falls of persons.

(6) Pitch. Pitch is the included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side.

(7) Fastenings. A fastening is a device to attach a ladder to a structure, building, or equipment.

(8) Rungs. Rungs are ladder crosspieces of circular or oval cross-section on which a person may step in ascending or descending.

(9) Cleats. Cleats are ladder crosspieces of rectangular cross-section placed on edge on which a person may step in ascending or descending.

(10) Steps. Steps are the flat crosspieces of a ladder on which a person may step in ascending or descending.

(11) Cage. A cage is a guard that may be referred to as a cage or basket guard which is an enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

(12) Well. A well is a permanent complete enclosure around a fixed ladder, which is attached to the walls of the well. Proper clearances for a well will give the person who must climb the ladder the same protection as a cage.

(13) Ladder safety device. A ladder safety device is any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls and which may

incorporate such features as life belts, friction brakes, and sliding attachments.

(14) Grab bars. Grab bars are individual handholds placed adjacent to or as an extension above ladders for the purpose of providing access beyond the limits of the ladder.

(15) Through ladder. A through ladder is one from which a person getting off at the top must step through the ladder in order to reach the landing.

(16) Side-step ladder. A side-step ladder is one from which a person getting off at the top must step sideways from the ladder in order to reach the landing.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-81001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-81001, filed 5/9/73 and Order 73-4, § 296-24-81001, filed 5/7/73.]

WAC 296-24-81003 Design requirements. (1) Design considerations. All ladders, appurtenances, and fastenings shall be designed to meet the following load requirements:

(a) The minimum design live load shall be a single concentrated load of 200 pounds.

(b) The number and position of additional concentrated live-load units of 200 pounds each as determined from anticipated usage of the ladder shall be considered in the design.

(c) The live loads imposed by persons occupying the ladder shall be considered to be concentrated at such points as will cause the maximum stress in the structural member being considered.

(d) The weight of the ladder and attached appurtenances together with the live load shall be considered in the design of rails and fastenings.

(2) Design stresses.

(a) Design stresses for wood components of ladders shall not exceed those specified in WAC 296-24-78001 through 296-24-79507. All wood parts of fixed ladders shall meet the requirements of WAC 296-24-78005.

(b) For fixed ladders consisting of wood side rails and wood rungs or cleats, used at a pitch in the range 75 degrees to 90 degrees, and intended for use by no more than one person per section, single ladders as described in WAC 296-24-78007 (3)(b) are acceptable.

(3) Fixed embedded steps. Individual fixed steps used for access or egress, embedded in the walls of risers or the conical top sections of manholes shall be safe, well constructed, and installed in accordance with good engineering practices. Appurtenances penetrating the manhole walls are prohibited.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-81003, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-81003, filed 5/9/73 and Order 73-4, § 296-24-81003, filed 5/7/73.]

WAC 296-24-81005 Specific features. (1) Rungs and cleats.

(a) All rungs shall have a minimum diameter of three-fourths inch for metal ladders, except as covered in subsection (7)(a) of this section, and a minimum diameter of 1 1/8 inches for wood ladders.

(b) The distance between rungs, cleats, and steps shall not exceed 12 inches and shall be uniform throughout the length of the ladder.

(c) The minimum clear length of rungs or cleats shall be 16 inches.

(d) Rungs, cleats, and steps shall be free of splinters, sharp edges, burrs, or projections which may be a hazard.

(e) The rungs of an individual-rung ladder shall be so designed that the foot cannot slide off the end (A suggested design is shown in Figure D-1, at the end of this section) or be treated with anti-slip type paint or treatment.

(f) Such rungs or steps installed in the walls of risers or conical top sections of manholes shall be uniformly spaced from 12 inches to 16 1/2 inches apart and be a minimum of 10 inches in length.

(i) The manhole rungs or steps shall have a minimum of 4 inches of clearance between the rung or step and the wall.

(ii) The manhole rung or step shall be capable of sustaining a single concentrated load of 300 pounds.

(2) Side rails. Side rails which might be used as a climbing aid shall be of such cross sections as to afford adequate gripping surface without sharp edges, splinters, or burrs.

(3) Fastenings. Fastenings shall be an integral part of fixed ladder design.

(4) Splices. All splices made by whatever means shall meet design requirements as noted in WAC 296-24-81003(1). All splices and connections shall have smooth transition with original members and with no sharp or extensive projections.

(a) When fixed ladders are spliced the splice plates shall be the same depth as side rails.

(b) The length of the splice plates shall be four times the depth of the side rail. They shall be of metal not less than one-fourth of an inch in thickness and chamfered on all exposed edges.

(c) Splice plates shall be secured by bolts or rivets with the heads countersunk or of the button type.

(d) The heads shall be on the outside of the rail.

(e) The bolts or rivets shall be not less than one-half inch nor more than five-eighths inch in diameter.

(f) The bolt ends shall be chamfered with only the chamfered end extending beyond the nut.

(g) Both ends of the rivet shall be button shape.

(h) Washers shall be placed under the nuts and rivet ends on wood side rails.

(i) There shall be a minimum of three bolts or rivets on each side of the joint for metal side rails and a minimum of four bolts or rivets for wood side rails.

(j) Bolts and rivets in both metal and wood side rails shall be staggered in position.

(5) Electrolytic action. Adequate means shall be employed to protect disimilar metals from electrolytic action when such metals are joined.

(6) Welding. All welding shall be in accordance with the "Code for Welding in Building Construction" (AWS D1.0-1966).

(7) Protection from deterioration.

(a) Metal ladders and appurtenances shall be painted or otherwise treated to resist corrosion and rusting when location demands. Ladders formed by individual metal rungs imbedded in concrete, which serve as access to pits and to other areas under floors, are frequently located in an atmosphere that causes corrosion and rusting. To increase rung life in such atmosphere, individual metal rungs shall

have a minimum diameter of 1 inch or shall be painted or otherwise treated to resist corrosion and rusting.

(b) Wood ladders, when used under conditions where decay may occur, shall be treated with a nonirritating preservative, and the details shall be such as to prevent or minimize the accumulation of water on wood parts.

(c) When different types of materials are used in the construction of a ladder, the materials used shall be so treated as to have no deleterious effect one upon the other.

[Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-81005, filed 1/11/90, effective 2/26/90; Order 73-5, § 296-24-81005, filed 5/9/73 and Order 73-4, § 296-24-81005, filed 5/7/73.]

WAC 296-24-81007 Clearance. (1) Climbing side. On fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be 36 inches for a pitch of 76 degrees, and 30 inches for a pitch of 90 degrees (Fig. D-2 of this section), with minimum clearances for intermediate pitches varying between these two limits in proportion to the slope, except as provided in (3) and (5) of this section.

(2) Ladders without cages or wells. A clear width of at least 15 inches shall be provided each way from the centerline of the ladder in the climbing space, except when cages or wells are necessary.

(3) Ladders with cages or baskets. Ladders equipped with cage or basket are excepted from the provisions of (1) and (2) of this section, but shall conform to the provisions of WAC 296-24-81009 (1)(e). Fixed ladders in smooth-walled wells are excepted from the provisions of (1) of this section, but shall conform to the provisions of WAC 296-24-81009 (1)(f).

(4) Clearance in back of ladder. The distance from the centerline of rungs, cleats, or steps to the nearest permanent object in back of the ladder shall be not less than 7 inches, except that when unavoidable obstructions are encountered, minimum clearances as shown in Figure D-3 shall be provided.

(5) Clearance in back of grab bar. The distance from the centerline of the grab bar to the nearest permanent object in back of the grab bars shall be not less than 4 inches. Grab bars shall not protrude on the climbing side beyond the rungs of the ladder which they serve.

(6) Step-across distance. The step-across distance from the nearest edge of ladder to the nearest edge of equipment or structure shall be not more than 12 inches, or less than 2 1/2 inches (Fig. D-4).

(7) Hatch cover. Counterweighted hatch covers shall open a minimum of 60 degrees from the horizontal. The distance from the centerline of rungs or cleats to the edge of the hatch opening on the climbing side shall be not less than 24 inches for offset wells or 30 inches for straight wells. There shall be no protruding potential hazards within 24 inches of the centerline of rungs or cleats; any such hazards within 30 inches of the centerline of the rungs or cleats shall be fitted with deflector plates placed at an angle of 60 degrees from the horizontal as indicated in Figure D-5.The relationship of a fixed ladder to an acceptable counterweighted hatch cover is illustrated in Figure D-6.

[Order 73-5, § 296-24-81007, filed 5/9/73 and Order 73-4, § 296-24-81007, filed 5/7/73.]

WAC 296-24-81009 Special requirements. (1) Cages or wells.

(a) Cages or wells (except on chimney ladders) shall be built, as shown on the applicable drawings, covered in detail in Figures D-7, D-8, and D-9, or of equivalent construction.

(b) Cages or wells (except as provided in (5) of this section) conforming to the dimensions shown in Figures D-7, D-8, and D-9 shall be provided on ladders of more than 20 feet to a maximum unbroken length of 30 feet.

(c) Cages shall extend a minimum of 42 inches above the top of landing, unless other acceptable protection is provided.

(d) Cages shall extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder, with bottom flared not less than 4 inches, or portion of cage opposite ladder shall be carried to the base.

(e) Cages shall not extend less than 27 nor more than 28 inches from the centerline of the rungs of the ladder. Cage shall not be less than 27 inches in width. The inside shall be clear of projections. Vertical bars shall be located at a maximum spacing of 40 degrees around the circumference of the cage; this will give a maximum spacing of approximately 9 1/2 inches, center to center.

(f) Ladder wells shall have a clear width of at least 15 inches measured each way from the centerline of the ladder. Smooth-walled wells shall be a minimum of 27 inches from the centerline of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there shall be a minimum of 30 inches from the centerline of the rungs.

(2) Landing platforms. When ladders are used to ascend to heights exceeding 20 feet (except on chimneys), landing platforms shall be provided for each 30 feet of height or fraction thereof, except that, where no cage, well, or ladder safety device is provided, landing platforms shall be provided for each 20 feet of height or fraction thereof. Each ladder section shall be offset from adjacent sections. Where installation conditions (even for a short, unbroken length) require that adjacent sections be offset, landing platforms shall be provided at each offset.

(a) Where a person has to step a distance greater than 12 inches from the centerline of the rung of a ladder to the nearest edge of structure or equipment, a landing platform shall be provided. The minimum step-across distance shall be 2 1/2 inches.

(b) All landing platforms shall be equipped with standard railings and toeboards, so arranged as to give safe access to the ladder. Platforms shall be not less than 24 inches in width and 30 inches in length.

(c) One rung of any section of ladder shall be located at the level of the landing laterally served by the ladder. Where access to the landing is through the ladder, the same rung spacing as used on the ladder shall be used from the landing platform to the first rung below the landing.

(3) Ladder extensions. The side rails of through or side-step ladder extensions shall extend 3 1/2 feet above parapets and landings. For through ladder extensions, the rungs shall be omitted from the extension and shall have not less than 18 nor more than 24 inches clearance between rails. For side-step or offset fixed ladder sections, at

landings, the side rails and rungs shall be carried to the next regular rung beyond or above the 3 1/2 feet minimum (Fig. D-10).

(4) Grab bars. Grab bars shall be spaced by a continuation of the rung spacing when they are located in the horizontal position. Vertical grab bars shall have the same spacing as the ladder side rails. Grab-bar diameters shall be the equivalent of the round-rung diameters.

(5) Ladder safety devices. Ladder safety devices may be used on tower, water tank, and chimney ladders over 20 feet in unbroken length in lieu of cage protection. No landing platform is required in these cases. All ladder safety devices such as those that incorporate lifebelts, friction brakes, and sliding attachments shall meet the design requirements of the ladders which they serve.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-81009, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-81009, filed 5/9/73 and Order 73-4, § 296-24-81009, filed 5/7/73.]

WAC 296-24-81011 Pitch. Preferred pitch.

(1) The preferred pitch of fixed ladders shall be considered to come in the range of 75 degrees and 90 degrees with the horizontal (Fig. D-11).

(2) Substandard pitch. Fixed ladders shall be considered as substandard if they are installed within the substandard pitch range of 60 and 75 degrees with the horizontal. Substandard fixed ladders are permitted only where it is found necessary to meet conditions of installation. This substandard pitch range shall be considered as a critical range to be avoided, if possible.

(3) Scope of coverage in this section. This section covers only fixed ladders within the pitch range of 60 degrees and 90 degrees with the horizontal.

(4) Pitch greater than 90 degrees. Ladders having a pitch in excess of 90 degrees with the horizontal are prohibited.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-81011, filed 11/13/80; Order 73-5, § 296-24-81011, filed 5/9/73 and Order 73-4, § 296-24-81011, filed 5/7/73.]

WAC 296-24-81013 Maintenance and use. (1) All ladders shall be maintained in a safe condition. All ladders shall be inspected regularly, with the intervals between inspections being determined by use and exposure.

Note: For illustrations, see Figs. D-1 through D-11.

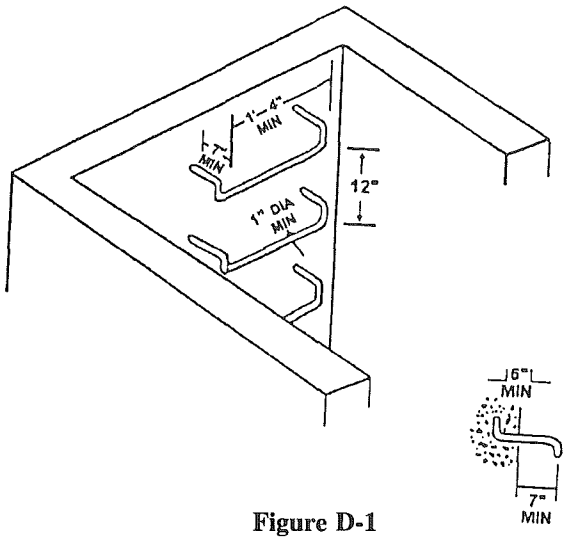
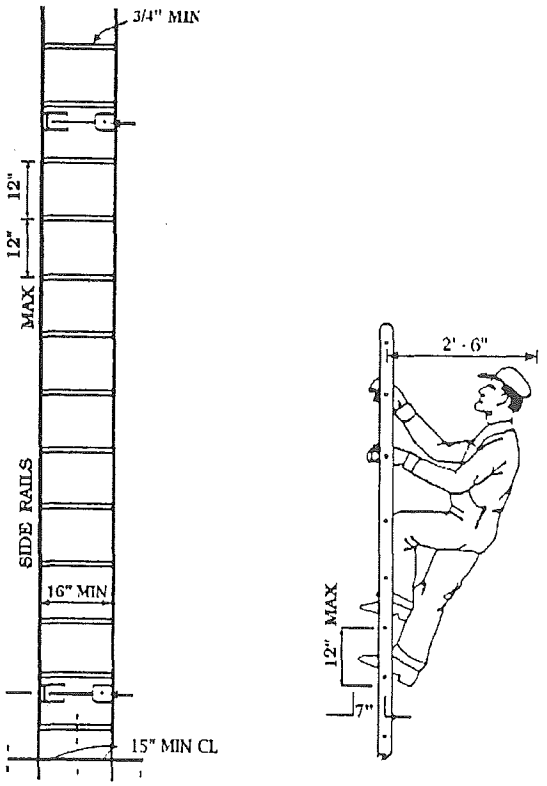


Figure D-1

Suggested design for rungs on individual-rung ladders



RAIL LADDER WITH BAR STEEL RAILS AND ROUND STEEL RUNGS

Figure D-2

Minimum Ladder Clearances

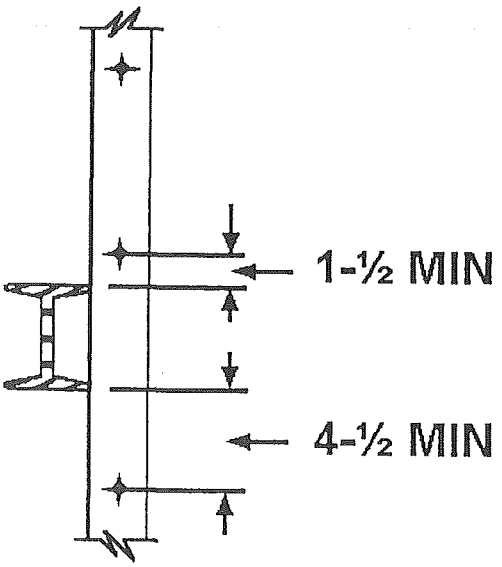


Figure D-3

Clearance for Unavoidable Obstruction at Rear of Fixed Ladder

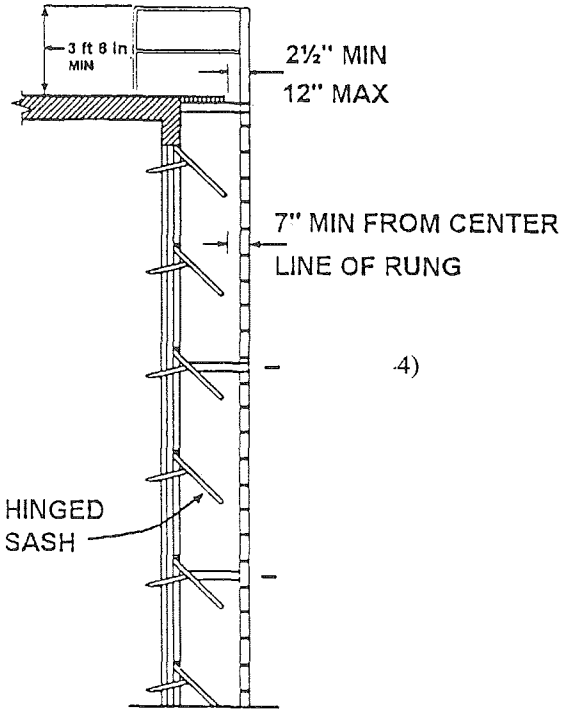


Figure D-4

Ladder Far from Wall

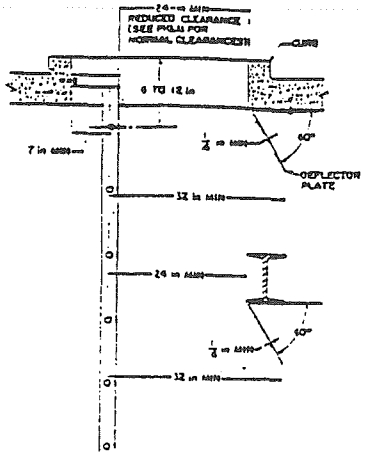
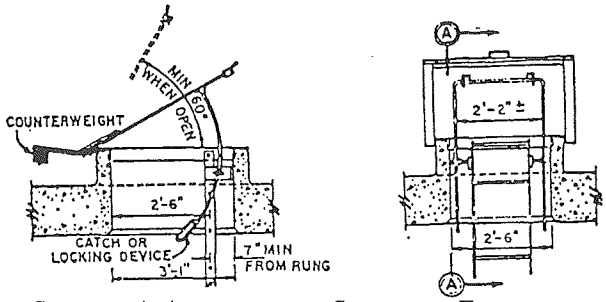


Figure D-5

Deflector Plates for Head Hazards



SECTION A-A SECTIONAL ELEVATION

Figure D-6

Relationship of Fixed Ladder to a Safe Access Hatch

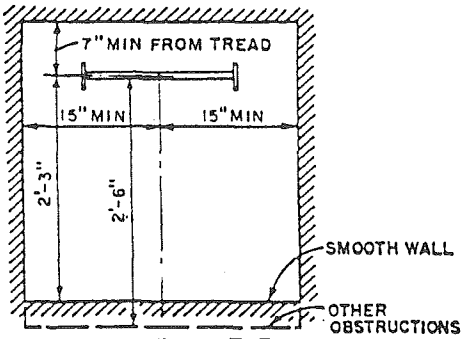
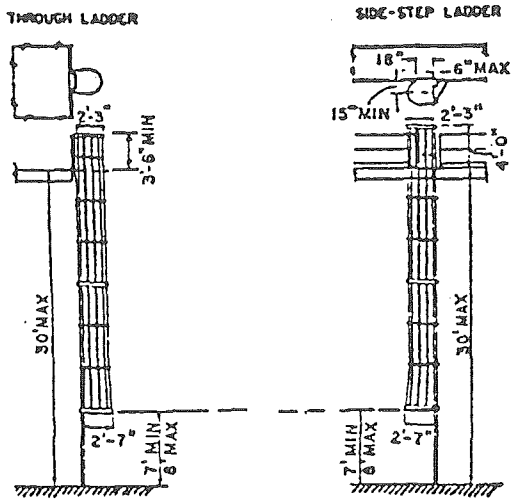


Figure D-7

Clearance Diagram for Fixed Ladder in Well



ACCESS TO LANDING PLATFORM THROUGH LADDER

ACCESS LATERALLY FROM LADDER

Figure D-8 (Part 1)

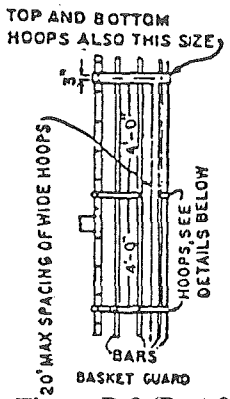
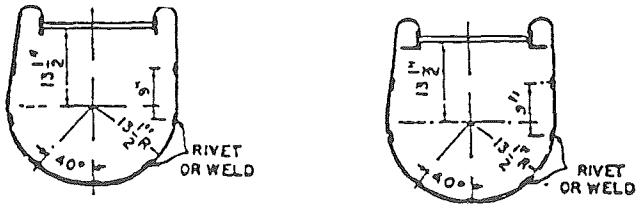


Figure D-8 (Part 2)

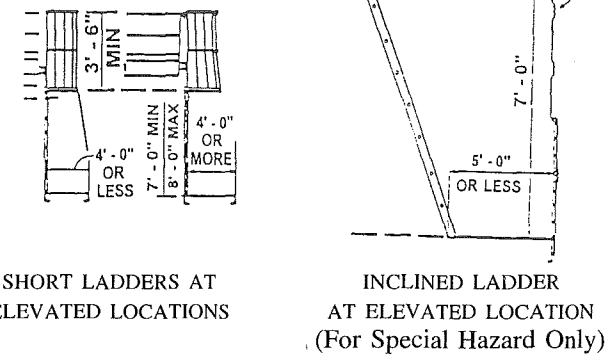


BASKET GUARD HOOP BAR LADDER

BASKET GUARD HOOP ANGLE IRON LADDER

Figure D-8 (Part 3)

Cages for Ladders more than 20 Feet High



SHORT LADDERS AT ELEVATED LOCATIONS

INCLINED LADDER AT ELEVATED LOCATION (For Special Hazard Only)

Figure D-9

Cages—Special Applications

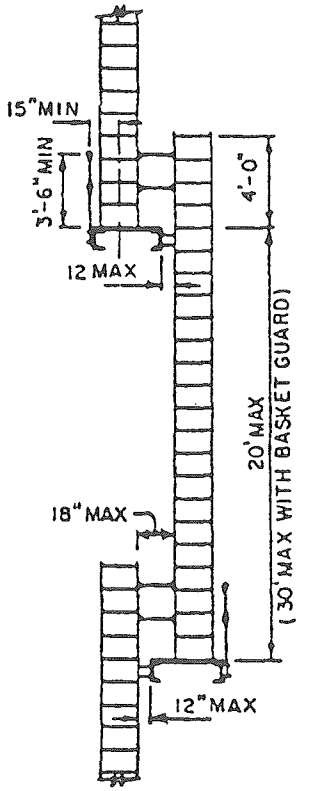


Figure D-10

Offset Fixed Ladder Sections

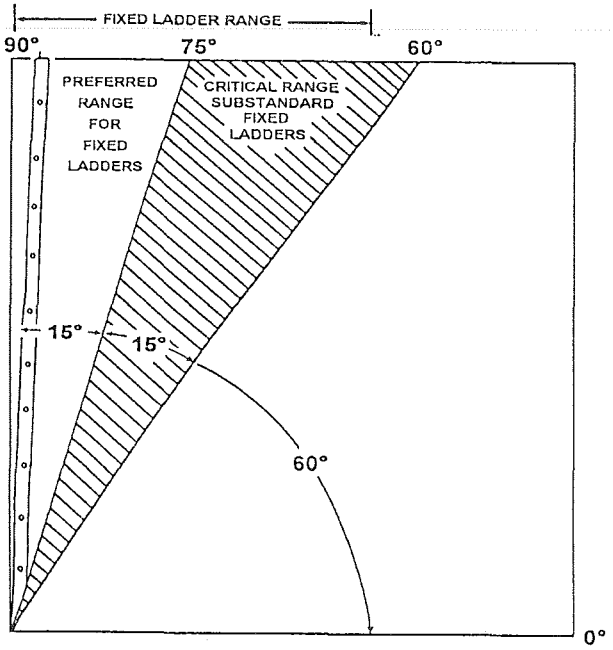


Figure D-11

Pitch of Fixed Ladders

(2) When ascending or descending, the climber must face the ladder.

(3) Workers shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-81013, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-81013, filed 3/1/76; Order 73-5, § 296-24-81013, filed 5/9/73 and Order 73-4, § 296-24-81013, filed 5/7/73.]

WAC 296-24-825 Safety requirements for scaffolding.

[Order 73-5, § 296-24-825, filed 5/9/73 and Order 73-4, § 296-24-825, filed 5/7/73.]

WAC 296-24-82501 Definitions. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-82503 through 296-24-82545 unless the context requires otherwise.

(1) Bearer. A horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.

(2) Boatswain's chair. A seat supported by slings attached to a suspended rope, designed to accommodate one worker in a sitting position.

(3) Brace. A tie that holds one scaffold member in a fixed position with respect to another member.

(4) Bricklayer's square scaffold. A scaffold composed of framed wood squares which support a platform limited to light and medium duty.

(5) Carpenters' bracket scaffold. A scaffold consisting of wood or metal brackets supporting a platform.

(6) Coupler. A device for locking together the component parts of a tubular metal scaffold. The material used for the couplers shall be of a structural type, such as a drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.

(7) Crawling board or chicken ladder. A plank with cleats spaced and secured at equal intervals, for use by a worker on roofs, not designed to carry any material.

(8) Double pole or independent pole scaffold. A scaffold supported from the base by a double row of uprights, independent of support from the walls and constructed of uprights, ledgers, horizontal platform bearers, and diagonal bracing.

(9) Float or ship scaffold. A scaffold hung from overhead supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two parallel plank bearers at right angles to the span.

(10) Guardrail. A rail secured to uprights and erected along the exposed sides and ends of platforms.

(11) Heavy duty scaffold. A scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot.

(12) Horse scaffold. A scaffold for light or medium duty, composed of horses supporting a work platform.

(13) Interior hung scaffold. A scaffold suspended from the ceiling or roof structure.

(14) Ladder jack scaffold. A light duty scaffold supported by brackets attached to ladders.

(15) Ledger (stringer). A horizontal scaffold member which extends from post to post and which supports the putlogs or bearer forming a tie between the posts.

(16) Light duty scaffold. A scaffold designed and constructed to carry a working load not to exceed 25 pounds per square foot.

(17) Manually propelled mobile scaffold. A portable rolling scaffold supported by casters.

(18) Mason's adjustable multiple-point suspension scaffold. A scaffold having a continuous platform supported by bearers suspended by wire rope from overhead supports, so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

(19) Maximum intended load. The total of all loads including the working load, the weight of the scaffold, and such other loads as may be reasonably anticipated.

(20) Medium duty scaffold. A scaffold designed and constructed to carry a working load not to exceed 50 pounds per square foot.

(21) Mid-rail. A rail approximately midway between the guardrail and platform, used when required, and secured to the uprights erected along the exposed sides and ends of platforms.

(22) Needle beam scaffold. A light duty scaffold consisting of needle beams supporting a platform.

(23) Outrigger scaffold. A scaffold supported by outriggers or thrustouts projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside of such a building or structure.

(24) Putlog. A scaffold member upon which the platform rests.

(25) Roofing bracket. A bracket used in sloped roof construction, having provisions for fastening to the roof or supported by ropes fastened over the ridge and secured to some suitable object.

(26) Runner. The lengthwise horizontal bracing or bearing members or both.

(27) Scaffold. Any temporary elevated platform and its supporting structure used for supporting workers or materials or both.

(28) Single-point adjustable suspension scaffold. A manually or power-operated unit designed for light duty use, supported by a single wire rope from an overhead support so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

(29) Single pole scaffold. Platforms resting on putlogs or crossbeams, the outside ends of which are supported on ledgers secured to a single row of posts or uprights and the inner ends of which are supported on or in a wall.

(30) Stone setters' adjustable multiple-point suspension scaffold. A swinging-type scaffold having a platform supported by hangers suspended at four points so as to permit the raising or lowering of the platform to the desired working position by the use of hoisting machines.

(31) Toeboard. A barrier secured along the sides and ends of a platform, to guard against the falling of material.

(32) Tube and coupler scaffold. An assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and special couplers which serve to connect the uprights and to join the various members.

(33) Tubular welded frame scaffold. A sectional, panel, or frame metal scaffold substantially built up of prefabricated welded sections which consist of posts and horizontal bearer with intermediate members. Panels or frames shall be braced with diagonal or cross braces.

(34) Two-point suspension scaffold (swinging scaffold). A scaffold, the platform of which is supported by hangers (stirrups) at two points, suspended from overhead supports so as to permit the raising or lowering of the platform to the desired working position by tackle or hoisting machines.

(35) Window jack scaffold. A scaffold, the platform of which is supported by a bracket or jack which projects through a window opening.

(36) Working load. Load imposed by people, materials, and equipment.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82501, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-82501, filed 5/9/73 and Order 73-4, § 296-24-82501, filed 5/7/73.]

WAC 296-24-82503 General requirements for all scaffolds. (1) Scaffolds shall be furnished and erected in accordance with this standard for persons engaged in work that cannot be done safely from the ground or from solid construction, except that ladders used for such work shall conform to WAC 296-24-780 through 296-24-78009 and 296-24-795 through 296-24-79507.

(2) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

(3) Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 8 feet above the ground or floor except:

(a) Scaffolding wholly within the interior of a building and covering the entire floor area of any room therein and not having any side exposed to a hoistway, elevator shaft, stairwell, or other floor openings, and

(b) Needle-beam scaffolds and floats in use by structural iron workers.

(4) Guardrails should all be 2 x 4 inches or the equivalent, installed no less than 36 inches or not more than 42 inches high, with a midrail, when required, of 1 x 4 inch nominal lumber or equivalent. Supports should be at intervals not to exceed ten feet. Toeboards shall be a minimum of 4 inches nominal lumber in height.

(5) Factory-built (laminated) scaffold planks meeting the requirements of wood scaffold planks may be substituted for wood scaffold planks.

(6) Scaffolds and their components shall be capable of supporting without failure at least four times the maximum intended load.

(7) Scaffolds and other devices mentioned or described in these standards shall be maintained in safe condition. Scaffolds shall not be altered or moved horizontally while they are in use or occupied.

(8) Any scaffold damaged or weakened from any cause shall be immediately repaired and shall not be used until repairs have been completed.

(9) Scaffolds shall not be loaded in excess of the working load for which they are intended.

(10) All load-carrying timber members of scaffold framing shall be a minimum of 1,500 f. (stress grade) construction grade lumber. All dimensions are nominal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements. (NOTE: Where nominal sizes of lumber are used in place of rough sizes the nominal size lumber shall be such as to provide equivalent strength to that specified in Tables D-7 through D-12 and D-16.)

(11) All planking shall be Scaffold Grade as recognized by grading rules for the species of wood used. The maximum permissible spans for 2- x 9-inch or wider planks are shown in the following table:

	Material				
	Full thickness undressed lumber				Nominal thickness lumber
Working load (p.s.f.)	25	50	75	25	50
Permissible span (ft.)	10	8	6	8	6

The maximum permissible span for 1 1/4 x 9-inch or wider plank of full thickness is 4 feet with medium loading of 50 p.s.f.

(12) Nails or bolts used in the construction of scaffolds shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the scaffold. Nails shall not be subjected to a straight pull and shall be driven full length.

(13) All planking or platforms shall be overlapped (minimum 12 inches) or secured from movement.

(14) An access ladder or equivalent safe access shall be provided.

(15) Scaffold planks shall extend over their end supports not less than 6 inches nor more than 18 inches.

(16) The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

TABLE D-7

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS LIGHT DUTY

	Maximum height of scaffold	
	20 feet	60 feet
Uniformly distributed load	Not to exceed 25 pounds per square foot.	
Poles or uprights	2 by 4 in.	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.	5 ft. 0 in.
Bearers or putlogs to 3 ft. 0 in. width	2 by 4 in.	2 by 4 in.
Bearers or putlogs to 5 ft. 0 in. width	2 by 6 in. or 3 by 4 in.	2 by 6 in. or 3 by 4 in. (rough)
Ledgers	1 by 4 in.	1 1/4 by 9 in.
Planking	1 1/4 by 9 in. (rough)	2 by 9 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 by 4 in.	1 by 4 in.
Tie-ins	1 by 4 in.	1 by 4 in.
Toeboards	4 in. high (minimum)	4 in. high (minimum)
Guardrail	2 by 4 in.	2 by 4 in.

All members except planking are used on edge.

TABLE D-8

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS MEDIUM DUTY

Uniformly distributed load	Not to exceed 50 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	8 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.
Bearers or putlogs	2 by 9 in. or 3 by 4 in.
Spacing of bearers or putlogs	8 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	9 ft. 0 in.
Bracing, horizontal	1 by 6 in. or 1 1/4 by 4 in.
Bracing, diagonal	1 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum)
Guardrail	2 by 4 in.

All members except planking are used on edge.

TABLE D-9

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS HEAVY DUTY

Uniformly distributed load	Not to exceed 75 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.
Bearers or putlogs	2 by 9 in. or 3 by 5 in. (rough).
Spacing of bearers or putlogs	6 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	6 ft. 6 in.
Bracing, horizontal and diagonal	2 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum).
Guardrail	2 by 4 in.

All members except planking are used on edge.

TABLE D-10

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS LIGHT DUTY

	Maximum height of scaffold	
	20 feet	60 feet
Uniformly distributed load	Not to exceed 25 pounds per square foot.	
Poles or uprights	2 by 4 in.	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Pole spacing (transverse)	6 ft. 0 in.	10 ft. 0 in.
Ledgers	1 1/4 by 4 in.	1 1/4 by 9 in.
Bearers to 3 ft. 0 in. span	2 by 4 in.	2 by 4 in.
Bearers to 10 ft. 0 in. span	2 by 6 in. or 3 by 4 in.	2 by 9 (rough) or 3 by 8 in.
Planking	1 1/4 by 9 in.	2 by 9 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 by 4 in.	1 by 4 in.
Tie-ins	1 by 4 in.	1 by 4 in.
Toeboards	4 in. high	4 in. high (minimum).
Guardrail	2 by 4 in.	2 by 4 in.

All members except planking are used on edge.

TABLE D-11

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS MEDIUM DUTY

Uniformly distributed load	Not to exceed 50 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	8 ft. 0 in.
Pole spacing (transverse)	8 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	6 ft. 0 in.
Spacing of bearers	8 ft. 0 in.
Bearers	2 by 9 in. rough or 2 by 10 in.
Bracing, horizontal	1 by 6 in. or 1 1/4 by 4 in.
Bracing, diagonal	1 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum).
Guardrail	2 by 4 in.

All members except planking are used on edge.

TABLE D-12

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS HEAVY DUTY

Uniformly distributed load	Not to exceed 75 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.
Pole spacing (transverse)	8 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	4 ft. 6 in.
Bearers	2 by 9 in. (rough).
Bracing, horizontal and diagonal	2 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum).
Guardrail	2 by 4 in.

All members except planking are used on edge.

(17) Materials being hoisted onto a scaffold shall have a tag line.

(18) Overhead protection shall be provided for workers working on a scaffold when they are exposed to overhead hazards.

(19) Scaffolds shall be provided with a screen between the toe board and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard Wire one-half-inch mesh or the equivalent, where persons are required to work or pass under the scaffolds.

(20) Employees shall not work on scaffolds during storms or high winds.

(21) Employees shall not work on scaffolds which are covered with ice or snow.

(22) Tools, materials, and debris shall not be allowed to accumulate in quantities to cause a hazard.

(23) Only treated or protected fiber rope shall be used for or near any work involving the use of corrosive substances or chemicals.

(24) Wire or fiber rope used for scaffold suspension shall be capable of supporting at least six times the intended load.

(25) When acid solutions are used for cleaning buildings over 50 feet in height, wire rope supported scaffolds shall be used.

(26) The use of shore scaffolds or leanto scaffolds is prohibited.

(27) Lumber sizes, when used in WAC 296-24-82505 through 296-24-82545, refer to nominal sizes except where otherwise stated.

(28) Scaffolds shall be secured to permanent structures, through use of anchor bolts, reveal bolts, or other equivalent means. Window cleaners' anchor bolts shall not be used.

(29) Special precautions shall be taken to protect scaffold members, including any wire or fiber ropes, when using a heat-producing process.

(30) When rope falls are used to support swinging scaffolding, the rope falls shall be of sufficient length to reach the ground. Lengthening rope falls by tying on additional lengths shall be prohibited.

(31) When screw shackles are used to support staging, etc., the pin must be wired or pinned so that the shackle will not become unscrewed by strain or stress.

(32) All hooks on blocks used for raising scaffolding shall be provided with a safety latch or be "moused at the throat" to prevent the hook from becoming dislodged.

(33) Lifelines size shall be 3/4 inch manila rope or equivalent with a minimum breaking strength of 5400 pounds. Safety belt lanyards shall be a minimum of 1/2 inch nylon or equivalent with a maximum length to provide for a fall of no greater than 6 feet. This rope shall have a minimum breaking strength of 5400 pounds.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82503, filed 7/20/94, effective 9/20/94; 90-03-029 (Order 89-20), § 296-24-82503, filed 1/11/90, effective 2/26/90; Order 74-27, § 296-24-82503, filed 5/7/74; Order 73-5, § 296-24-82503, filed 5/9/73 and Order 73-4, § 296-24-82503, filed 5/7/73.]

WAC 296-24-82505 General requirements for wood pole scaffolds. (1) Scaffold poles shall bear on a foundation of sufficient size and strength to spread the load from the poles over a sufficient area to prevent settlement. All poles shall be set plumb.

(2) Where wood poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and shall not be less than 4 feet 0 inches in length, overlapping the abutted ends equally, and have the same width and not less than the cross-sectional area of the pole. Splice plates of other materials of equivalent strength may be used.

(3) Independent pole scaffolds shall be set as near to the wall of the building as practicable.

(4) All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height or length exceeds 25 feet, the scaffold shall be secured at intervals not greater than 25 feet vertically and horizontally.

(5) Putlogs or bearers shall be set with their greater dimensions vertical, long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support.

(6) Every wooden putlog on single pole scaffolds shall be reinforced with a 3/16 x 2-inch steel strip or equivalent secured to its lower edge throughout its entire length.

(7) Ledgers shall be long enough to extend over two pole spaces. Ledgers shall not be spliced between the poles. Ledgers shall be reinforced by bearing blocks securely nailed to the side of the pole to form a support for the ledger.

(8) Diagonal bracing shall be provided to prevent the poles from moving in a direction parallel with the wall of the building, or from buckling.

(9) Cross bracing shall be provided between the inner and outer sets of poles in independent pole scaffolds. The free ends of pole scaffolds shall be cross braced.

(10) Full diagonal face bracing shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced at the poles.

(11) Platform planks shall be laid with their edges close together so the platform will be tight with no spaces through which tools or fragments of material can fall.

(12) Where planking is lapped, each plank shall lap its end supports at least 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgement of planks due to deflection, and the ends shall be nailed or cleated to prevent their dislodgement.

(13) When a scaffold turns a corner, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at right angles shall be laid so as to extend over and rest on the first layer of planking.

(14) When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs or bearers have been set in place, ready to receive the platform planks.

(15) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 8 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(16) All wood pole scaffolds 60 feet or less in height shall be constructed and erected in accordance with Tables D-7 through D-12.If they are over 60 feet in height they shall be designed by a registered professional engineer and constructed and erected in accordance with such design. A copy of the typical drawings and specifications shall be made available to the employer and for inspection purposes.

(17) Wood-pole scaffolds shall not be erected beyond the reach of effective firefighting apparatus.

[Order 73-5, § 296-24-82505, filed 5/9/73 and Order 73-4, § 296-24-82505, filed 5/7/73.]

WAC 296-24-82507 Tube and coupler scaffolds. (1) A light-duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2-inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

(2) A medium-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2 1/2-inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2-inch O.D. steel tubing. Other structural metals when used must be designed to carry an equivalent load.

(3) A heavy-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing, with the posts spaced not more than 6 feet apart by 6 feet 6 inches along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

(4) Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables D-13, 14, and 15. Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables D-13, 14, and 15 shall be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

(5) All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended loads as set forth in Tables D-13, 14, and 15, or as set forth in the specifications by a registered professional engineer, copies which shall be made available to the employer and for inspection purposes.

(6) All tube and coupler scaffolds shall be erected by competent and experienced personnel.

(7) Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

(8) Runners shall be erected along the length of the scaffold located on both the inside and the outside posts at even height. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet 6 inches on centers.

(9) Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

(10) Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing. Bearers may be cantilevered for use as brackets to carry not more than two planks.

(11) Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.

(12) Longitudinal diagonal bracing shall be installed at approximately a 45-degree angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

(13) The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(14) Guardrails not less than 2 x 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17). (See Tables D-13, 14 and 15.)

TABLE D-13

TUBE AND COUPLER SCAFFOLDS
LIGHT DUTY

Uniformly distributed load . . . . . Not to exceed 25 p.s.f.
Post spacing (longitudinal) . . . . . 10 ft. 0 in.
Post spacing (transverse) . . . . . 6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	8	125 ft.
2	4	125 ft.
3	0	91 ft. 0 in.

TABLE D-14

TUBE AND COUPLER SCAFFOLDS
MEDIUM DUTY

Uniformly distributed load . . . . . Not to exceed 50 p.s.f.
Post spacing (longitudinal) . . . . . 8 ft. 0 in.
Post spacing (transverse) . . . . . 6 ft. 0. in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.
2	0	78 ft. 0 in.

TABLE D-15

TUBE AND COUPLER SCAFFOLDS
HEAVY DUTY

Uniformly distributed load . . . . . Not to exceed 75 p.s.f.
Post spacing (longitudinal) . . . . . 6 ft. 6 in.
Post spacing (transverse) . . . . . 6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82507, filed 7/31/79; Order 73-5, § 296-24-82507, filed 5/9/73 and Order 73-4, § 296-24-82507, filed 5/7/73.]

WAC 296-24-82509 Tubular welded frame scaffolds. (1) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed and proved to safely support four times the maximum intended load.

(2) Spacing of panels or frames shall be consistent with the loads imposed.

(3) Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

(4) Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum intended load.

(5) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(6) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(7) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(8) All tubular metal scaffolds shall be constructed and erected to support four times the maximum intended loads.

(9) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(10) Maximum permissible spans of planking shall be in conformity with WAC 296-24-82503(9).

(11) Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

(12) All tubular welded frame scaffolds shall be erected by competent and experienced personnel.

(13) Frames and accessories for scaffolds shall be maintained in good repair and every defect, unsafe condition, or noncompliance with this section shall be immediately corrected before further use of the scaffold. Any broken, bent, excessively rusted, altered, or otherwise structurally damaged frames or accessories shall not be used.

(14) Periodic inspections shall be made of all welded frames and accessories, and any maintenance, including painting, or minor corrections authorized by the manufacturer, shall be made before further use.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82509, filed 7/31/79; Order 73-5, § 296-24-82509, filed 5/9/73 and Order 73-4, § 296-24-82509, filed 5/7/73.]

WAC 296-24-82511 Outrigger scaffolds. (1) Outrigger beams shall extend not more than 6 feet beyond the face of the building. The inboard end of the outrigger beams, measured from the fulcrum point to the extreme point of support, shall be not less than one and one-half times the outboard end in length. The beams shall rest on edge, the sides shall be plumb and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing at least 6 inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.

(2) The inboard ends of outrigger beams shall be securely supported either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary. The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement.

(3) Unless outrigger scaffolds are designed by a licensed professional engineer, they shall be constructed and erected in accordance with Table D-16.Outrigger scaffolds designed by a registered professional engineer shall be constructed and erected in accordance with such design. A copy of the detailed drawings and specifications showing the sizes and spacing of members shall be kept on the job.

(4) Planking shall be laid tight and shall extend to within 3 inches of the building wall. Planking shall be nailed or bolted to outriggers.

(5) Where there is danger of material falling from the scaffold, a wire mesh or other enclosure shall be provided between the guardrail and the toeboard.

(6) Where additional working levels are required to be supported by the outrigger method, the plans and specifications of the outrigger and scaffolding structure shall be designed by a registered professional engineer to comply with requirements of this section.

TABLE D-16

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF OUTRIGGER SCAFFOLDS

	Light duty	Medium duty
Maximum scaffold load	25 p.s.f.	50 p.s.f.
Outrigger size	2 x 10 in.	3 x 10 in.
Maximum outrigger spacing	10 ft. 0 in.	6 ft. 0 in.
Planking	2 x 9 in.	2 x 9 in.
Guardrail	2 x 4 in.	2 x 4 in.
Guardrail uprights	2 x 4 in.	2 x 4 in.
Toeboards	4 in. (minimum).	4 in. (minimum).

[Order 73-5, § 296-24-82511, filed 5/9/73 and Order 73-4, § 296-24-82511, filed 5/7/73.]

WAC 296-24-82513 Masons' adjustable multiple-point suspension scaffolds. (1) The scaffold shall be capable of sustaining a working load of fifty pounds per square foot and shall not be loaded in excess of that figure.

(2) The scaffold shall be provided with hoisting machines that meet the requirements of a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of a nationally recognized testing laboratory.

(3) The platform shall be supported by wire ropes in conformity with WAC 296-24-82503(24), suspended from overhead outrigger beams.

(4) The scaffold outrigger beams shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure.

(5) Each outrigger beam shall be equivalent in strength to at least a standard seven-inch, 15.3-pound steel I-beam, be at least fifteen feet long, and shall not project more than six feet six inches beyond the bearing point.

(6) Where the overhang exceeds six feet six inches, outrigger beams shall be composed of stronger beams or multiple beams and be installed in accordance with approved designs and instructions.

(7) If channel iron outrigger beams are used in place of I-beams, they shall be securely fastened together with the flanges turned out.

(8) All outrigger beams shall be set and maintained with their webs in a vertical position.

(9) A stop bolt shall be placed at each end of every outrigger beam.

(10) The outrigger beam shall rest on suitable wood-bearing blocks.

(11) All parts of the scaffold such as bolts, nuts, fittings, clamps, wire rope, and outrigger beams and their fastenings, shall be maintained in sound and good working condition and shall be inspected before each installation and periodically thereafter.

(12) The free end of the suspension wire ropes shall be equipped with proper size thimbles and be secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of rope shall at all times remain on the drum.

(13) Where a single outrigger beam is used, the steel shackles or clevises with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drums.

(14) The scaffold platform shall be equivalent in strength to at least two-inch planking. (For maximum planking spans see WAC 296-24-82503(11).)

(15) Guardrails not less than two by four inches or the equivalent and not less than thirty-six inches or more than forty-two inches high, with a mid-rail, when required, of one-inch by four-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than eight feet above the ground or floor. Toeboards shall be a minimum of four inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(19).

(16) Overhead protection shall be provided on the scaffold, not more than nine feet above the platform, consisting of two-inch planking or material of equivalent strength laid tight, when employees are at work on the scaffold and an overhead hazard exists.

(17) Each scaffold shall be installed or relocated in accordance with designs and instructions, of a registered professional engineer, and supervised by a competent, designated person to comply with the requirements of this section.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82513, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-82513, filed 11/14/88; Order 73-5, § 296-24-82513, filed 5/9/73 and Order 73-4, § 296-24-82513, filed 5/7/73.]

WAC 296-24-82515 Two-point suspension scaffolds (swinging scaffolds). (1) Two-point suspension scaffold platforms shall be not less than twenty inches nor more than thirty-six inches wide overall. The platform shall be securely fastened to the hangers by U-bolts or by other equivalent means.

(2) The hangers of two-point suspension scaffolds shall be made of wrought iron, mild steel, or other equivalent material having a cross-sectional area capable of sustaining four times the maximum intended load, and shall be designed with a support for guardrail, intermediate rail, and toeboard.

(3) When hoisting machines are used on two-point suspension scaffolds, such machines shall be of a design tested and approved by a nationally recognized testing laboratory. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(4) The roof irons or hooks shall be of wrought iron, mild steel, or other equivalent material of proper size and design, securely installed and anchored. Tiebacks of three-fourths-inch manila rope or the equivalent shall serve as a secondary means of anchorage, installed at right angles to the face of the building whenever possible and secured to a structurally sound portion of the building.

(5) Guardrails not less than two by four inches or the equivalent and not less than thirty-six inches or more than forty-two inches high, with a mid-rail, when required, of one-inch by four-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than ten feet above the ground or floor. Toeboards shall be a minimum of four inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(19).

(6) Two-point suspension scaffolds shall be suspended by wire or fiber ropes. Wire and fiber ropes shall conform to WAC 296-24-82503(24).

(7) The blocks for fiber ropes shall be of standard six-inch size, consisting of at least one double and one single block. The sheaves of all blocks shall fit the size of rope used.

(8) All wire ropes, fiber ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use.

(9) On suspension scaffolds designed for a working load of five hundred pounds, no more than two persons shall be permitted to work at one time. On suspension scaffolds with a working load of seven hundred fifty pounds, no more than three persons shall be permitted to work at one time. Each worker shall be protected by a safety lifebelt attached to a

lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.

(10) Where acid solutions are used, fiber ropes are not permitted unless acid-proof.

(11) Two-point suspension scaffolds shall be securely lashed to the building or structure to prevent them from swaying. Window cleaners' anchors shall not be used for this purpose.

(12) The platform of every two-point suspension scaffold shall be one of the following types:

(a) The side stringer of ladder-type platforms shall be clear straight-grained spruce or materials of equivalent strength and durability. The rungs shall be of straight-grained oak, ash, or hickory, at least one and one-eighths-inch in diameter, with seven-eighths inch tenons mortised into the side stringers at least seven-eighths inch. The stringers shall be tied together with the tie rods not less than one-quarter inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five-eighths inch apart except at the side rails where the space may be one inch. Ladder-type platforms shall be constructed in accordance with Table D-17.

(b) Plank-type platforms shall be composed of not less than nominal two-inch by eight-inch unspliced planks, properly cleated together on the underside starting six inches from each end; intervals in between shall not exceed four feet. The plank-type platform shall not extend beyond the hangers more than eighteen inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank-type platforms shall not exceed ten feet.

(c) Beam platforms shall have side stringers of lumber not less than two by six inches set on edge. The span between hangers shall not exceed twelve feet when beam platforms are used. The flooring shall be supported on two-inch and six-inch crossbeams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than four feet, securely nailed in place. The flooring shall be of one-inch by six-inch material properly nailed. Floorboards shall not be spaced more than one-half inch apart. (See Table D-17.)

TABLE D-17

SCHEDULE FOR LADDER-TYPE PLATFORMS

	Length of platform (feet)				
	12	14&16	18&20	22&24	28&30
Side stringers, minimum cross section (finished sizes):					
At ends (in.)	1 3/4 x2 3/4	1 3/4 x2 3/4	1 3/4 x3	1 3/4 x3	1 3/4 x3 1/2
At middle (in.)	1 3/4 x3 3/4	1 3/4 x3 3/4	1 3/4 x4	1 3/4 x4 1/4	1 3/4 x5
Reinforcing strip (minimum)	A 1/8x7/8-in. steel reinforcing strip or its equivalent shall be attached to the side or underside, full length.				
Rungs	Rungs shall be 1 1/8-in. minimum diameter with at least 7/8-in. diameter tenons, and the maximum spacing shall be 12 in. center to center.				
Tie rods:					
Number (minimum)	3	4	4	5	6
Diameter (minimum)	1/4 in.	1/4 in.	1/4 in.	1/4 in.	1/4 in.
Flooring, minimum finished size (in.)	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82515, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-82515, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-82515, filed 8/8/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82515, filed 7/31/79; Order 73-5, § 296-24-82515, filed 5/9/73 and Order 73-4, § 296-24-82515, filed 5/7/73.]

WAC 296-24-82517 Stone setters' adjustable multiple-point suspension scaffolds. (1) The scaffold shall be capable of sustaining a working load of 25 pounds per square foot and shall not be overloaded. Scaffolds shall not be used for storage of stone or other heavy materials.

(2) The hoisting machine and its supports shall be of a type tested and listed by a nationally recognized testing laboratory. Refer to WAC 296-24-95601(77) for definition of listed, and 29 CFR 1910.7 for nationally recognized testing laboratory.

(3) The platform shall be securely fastened to the hangers by U-bolts or other equivalent means.

(4) The scaffold unit shall be suspended from metal outriggers, iron brackets, wire rope slings, or iron hooks which will safely support the maximum intended load.

(5) Outriggers when used shall be set with their webs in a vertical position, securely anchored to the building or structure and provided with stop bolts at each end.

(6) The scaffold shall be supported by wire rope conforming with WAC 296-24-82503(22), suspended from overhead supports.

(7) The free ends of the suspension wire ropes shall be equipped with proper size thimbles, secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of rope shall remain on the drum at all times.

(8) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- by 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(9) When two or more scaffolds are used on a building or structure they shall not be bridged one to the other but shall be maintained at even height with platforms butting closely.

(10) Each scaffold shall be installed or relocated in accordance with designs and instructions of a registered professional engineer, and such installation or relocation

shall be supervised by a competent designated person to comply with requirements of this section.

[Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-24-82517, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82517, filed 7/31/79; Order 73-5, § 296-24-82517, filed 5/9/73 and Order 73-4, § 296-24-82517, filed 5/7/73.]

WAC 296-24-82519 Single-point adjustable suspension scaffolds. (1) The scaffolding, including power units or manually operated winches, shall be of a type tested and listed by a nationally recognized testing laboratory. Refer to WAC 296-24-95601(78) for definition of listed, and 29 CFR 1910.7 for nationally recognized testing laboratory.

(2) The power units may be either electrically or air motor driven.

(3) All power-operated gears and brakes shall be enclosed.

(4) In addition to the normal operating brake, all-power driven units must have an emergency brake which engages automatically when the normal speed of descent is exceeded.

(5) Guards, mid-rails, and toeboards shall completely enclose the cage or basket. Guardrails shall be no less than 2 by 4 inches nominal lumber or the equivalent installed no less than 36 inches nor more than 42 inches above the platform. Mid-rails shall be 1 by 6 inches nominal lumber or the equivalent, installed equidistant between the guardrail and the platform. Toeboards shall be a minimum of 4 inches nominal lumber in height.

(6) The hoisting machines, cables, and equipment shall be regularly serviced and inspected after each installation and every 30 days thereafter.

(7) The units may be combined to form a two-point suspension scaffold. Such scaffold shall comply with WAC 296-24-82515.

(8) The supporting cable shall be straight for its entire length, and the operator shall not sway the basket and fix the cable to any intermediate points to change their original path of travel.

(9) Equipment shall be maintained and used in accordance with the manufacturers' instructions.

(10) Suspension methods shall conform to applicable provisions of WAC 296-24-82515 and 296-24-82517.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82519, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-24-82519, filed 11/14/88; Order 73-5, § 296-24-82519, filed 5/9/73 and Order 73-4, § 296-24-82519, filed 5/7/73.]

WAC 296-24-82521 Boatswain's chairs. (1) The chair seat shall be not less than 12 by 24 inches, and of 1-inch thickness. The seat shall be reinforced on the underside to prevent the board from splitting.

(2) The two fiber rope seat slings shall be of 5/8-inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat.

(3) Seat slings shall be of at least 3/8-inch wire rope when a worker is conducting a heat producing process such as gas or arc welding.

(4) The worker shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.

(5) The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8-inch diameter first-grade manila rope or equivalent strength synthetic-fiber rope.

(6) The roof irons, hooks, or the object to which the tackle is anchored shall be securely installed. Tiebacks when used shall be installed at right angles to the face of the building and securely fastened to a chimney.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82521, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-82521, filed 8/8/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82521, filed 7/31/79; Order 73-5, § 296-24-82521, filed 5/9/73 and Order 73-4, § 296-24-82521, filed 5/7/73.]

WAC 296-24-82523 Carpenters' bracket scaffolds. (1) The brackets shall consist of a triangular wood frame not less than 2 by 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.

(2) Each bracket shall be attached to the structure by means of one of the following:

(a) A bolt no less than 5/8-inch in diameter which shall extend through the inside of the building wall.

(b) A metal stud attachment device.

(c) Welding to steel tanks.

(d) Hooking over or securing through a well-secured and adequately strong supporting member.

The brackets shall be spaced no more than 10 feet apart.

(3) No more than two persons shall occupy any given 10 feet of a bracket scaffold at any one time. Tools and materials shall not exceed 75 pounds in addition to the occupancy.

(4) The platform shall consist of not less than two 2- by 10-inch nominal size planks extending not more than 10 inches or less than 6 inches beyond each end support.

(5) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- by 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82523, filed 7/31/79; Order 76-6, § 296-24-82523, filed 3/1/76; Order 73-5, § 296-24-82523, filed 5/9/73 and Order 73-4, § 296-24-82523, filed 5/7/73.]

WAC 296-24-82525 Bricklayers' square scaffolds. (1) The squares shall not exceed 5 feet in width and 5 feet in height.

(2) Members shall be not less than those specified in Table D-18.

(3) The squares shall be reinforced on both sides of each corner with 1- by 6-inch gusset pieces. They shall also have braces 1 by 8 inches on both sides running from center to center of each member, or other means to secure equivalent strength and rigidity.

(4) The squares shall be set not more than 5 feet apart for medium duty scaffolds, and not more than 8 feet apart for light duty scaffolds. Bracing 1 x 8 inches, extending from the bottom of each square to the top of the next square, shall be provided on both front and rear sides of the scaffold.

TABLE D-18

MINIMUM DIMENSIONS FOR BRICKLAYERS' SQUARE SCAFFOLD MEMBERS

Members:	Dimensions (inches)
Bearers or horizontal members	2 by 6
Legs	2 by 6
Braces at corners	1 by 6
Braces diagonally from center frame	1 by 8

(5) Platform planks shall be at least 2- by 10-inch nominal size. The ends of the planks shall overlap the bearers of the squares and each plank shall be supported by not less than three squares.

(6) Bricklayers' square scaffolds shall not exceed three tiers in height and shall be so constructed and arranged that one square shall rest directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and be nailed down or otherwise secured to prevent displacement.

(7) Scaffolds shall be level and set upon a firm foundation.

[Order 73-5, § 296-24-82525, filed 5/9/73 and Order 73-4, § 296-24-82525, filed 5/7/73.]

WAC 296-24-82527 Horse scaffolds. (1) Horse scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height.

(2) The members of the horses shall be not less than those specified in Table D-19.

(3) Horses shall be spaced not more than 5 feet for medium duty and not more than 8 feet for light duty.

(4) When arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(5) On all scaffolds arranged in tiers, the legs shall be nailed down to the planks to prevent displacement or thrust and each tier shall be substantially cross braced.

TABLE D-19

MINIMUM DIMENSIONS FOR HORSE SCAFFOLD MEMBER

Members:	Dimensions (inches)
Horizontal members or bearers	3 by 4
Legs	1 1/4 by 4 1/2
Longitudinal brace between legs	1 by 6
Gusset brace at top of legs	1 by 8
Half diagonal braces	1 1/4 by 4 1/2

(6) Horses or parts which have become weak or defective shall not be used.

(7) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high with a mid-rail, when required, of 1- by 4-inch lumber or equivalent and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82527, filed 7/31/79; Order 73-5, § 296-24-82527, filed 5/9/73 and Order 73-4, § 296-24-82527, filed 5/7/73.]

WAC 296-24-82529 Needle beam scaffold. (1) Wood needle beams shall be in accordance with WAC 296-24-82503 (7) and (11) and shall be not less than 4 by 6 inches in size, with the greater dimension placed in a vertical direction. Metal beams or the equivalent conforming to WAC 296-24-82503 (6) and (10) may be used.

(2) Ropes or hangers shall be provided for supports. The span between supports on the needle beam shall not exceed 10 feet for 4- by 6-inch timbers. Rope supports shall be equivalent in strength to 1-inch diameter first-grade manila rope.

(3) The ropes shall be attached to the needle beams by a scaffold hitch or a properly made eye splice. The loose end of the rope shall be tied by a bowline knot or by a round turn and one-half hitch.

(4) The platform span between the needle beams shall not exceed 8 feet when using 2-inch scaffold plank. For spans greater than 8 feet, platforms shall be designed based on design requirements for the special span. The overhang of each end of the platform planks shall be not less than 1 foot and not more than 18 inches.

(5) When one needle beam is higher than the other or when the platform is not level the platform shall be secured against slipping.

(6) All unattached tools, bolts, and nuts used on needle beam scaffolds shall be kept in suitable containers.

(7) One end of a needle beam scaffold may be supported by a permanent structural member conforming to WAC 296-24-82503 (6) and (10).

(8) Each person working on a needle beam scaffold 10 feet or more above the ground or floor, shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82529, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82529, filed 7/31/79; Order 73-5, § 296-24-82529, filed 5/9/73 and Order 73-4, § 296-24-82529, filed 5/7/73.]

WAC 296-24-82531 Plasterers', decorators', and large area scaffolds. (1) Plasterers', decorators', lathers', and ceiling workers' inside scaffolds shall be constructed in accordance with the general requirements set forth for independent wood pole scaffolds.

(2) Guardrails not less than 2 by 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- by 4-inch nominal lumber or equivalent, and toeboards, shall be

installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(3) All platform planks shall be laid with the edges close together to the point where material cannot fall through.

(4) When independent pole scaffold platforms are erected in sections such sections shall be provided with connecting runways equipped with substantial guardrails.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82531, filed 7/31/79; Order 73-5, § 296-24-82531, filed 5/9/73 and Order 73-4, § 296-24-82531, filed 5/7/73.]

WAC 296-24-82533 Interior hung scaffolds. (1) An interior hung scaffold should be hung or suspended from the roof structure or substantial ceiling beams.

(2) The suspended steel wire rope shall conform to WAC 296-24-82503(22). Wire may be used providing the strength requirements of WAC 296-24-82503(22) are met.

(3) For hanging wood scaffolds, the following minimum nominal size material is recommended:

(a) Supporting bearers 2 by 9 inches on edge.

(b) Planking 2 by 9 inches or 2 by 10 inches, with maximum span 7 feet for heavy duty and 10 feet for light duty or medium duty.

(4) Steel tube and coupler members may be used for hanging scaffolds with both types of scaffold designed to sustain a uniform distributed working load up to heavy duty scaffold loads with a safety factor of four.

(5) When a hanging scaffold is supported by means of wire rope, such wire rope shall be wrapped at least twice around the supporting members and twice around the bearers of the scaffold, with each end of the wire rope secured by at least three standard wire-rope clips.

(6) All overhead supporting members shall be inspected and checked for strength before the scaffold is erected.

(7) Guardrails not less than 2 by 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of at least 1- by 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82533, filed 7/31/79; Order 73-5, § 296-24-82533, filed 5/9/73 and Order 73-4, § 296-24-82533, filed 5/7/73.]

WAC 296-24-82535 Ladder-jack scaffolds. (1) All ladder-jack scaffolds shall be limited to light duty and shall not exceed a height of 20 feet above the floor or ground.

(2) All ladders used in connection with ladder-jack scaffolds shall be heavy-duty ladders and shall be designed and constructed in accordance with WAC 296-24-780 through 296-24-78009 and 296-24-795 through 296-24-79507.

(3) The ladder-jack shall be so designed and constructed that it will bear on the side rails in addition to the ladder rungs, or if bearing on rungs only, the bearing area shall be at least 10 inches on each rung.

(4) Ladders used in conjunction with ladder jacks shall be so placed, fastened, held, or equipped with devices so as to prevent slipping.

(5) The wood platform planks shall be not less than 2 inches nominal in thickness. Both metal and wood platform planks shall overlap the bearing surface not less than 12 inches. The span between supports for wood shall not exceed 8 feet. Platform width shall be not less than 18 inches.

(6) Not more than two persons shall occupy any given 8 feet of any ladder-jack scaffold at any one time.

[Order 73-5, § 296-24-82535, filed 5/9/73 and Order 73-4, § 296-24-82535, filed 5/7/73.]

WAC 296-24-82537 Window-jack scaffolds. (1) Window-jack scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.

(2) Window jacks shall not be used to support planks placed between one window jack and another or for other elements of scaffolding.

(3) Window-jack scaffolds shall be provided with suitable guardrails unless safety belts with lifelines are attached and provided for the workers. Window-jack scaffolds shall be used by one person only.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82537, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-82537, filed 5/9/73 and Order 73-4, § 296-24-82537, filed 5/7/73.]

WAC 296-24-82539 Roofing brackets. (1) Roofing brackets shall be constructed to fit the pitch of the roof.

(2) Brackets shall be secured in place by nailing in addition to the pointed metal projections. The nails shall be driven full length into the roof. When rope supports are used, they shall consist of first-grade manila of at least three-quarter-inch diameter, or equivalent.

(3) A substantial catch platform shall be installed below the working area of roofs more than 20 feet from the ground to eaves with a slope greater than 3 inches in 12 inches without a parapet. In width the platform shall extend 2 feet beyond the projection of the eaves and shall be provided with a safety rail, mid-rail, and toeboard. This provision shall not apply where employees engaged in work upon such roofs are protected by a safety belt attached to a lifeline.

[Order 73-5, § 296-24-82539, filed 5/9/73 and Order 73-4, § 296-24-82539, filed 5/7/73.]

WAC 296-24-82541 Crawling boards or chicken ladders. (1) Crawling boards shall be not less than 10 inches wide and 1 inch thick, having cleats 1 x 1 1/2 inches. The cleats shall be equal in length to the width of the board and spaced at equal intervals not to exceed 24 inches. Nails shall be driven through and clinched on the underside. The crawling board shall extend from the ridge pole to the eaves when used in connection with roof construction, repair, or maintenance.

(2) A firmly fastened lifeline of at least three-quarter-inch rope shall be strung beside each crawling board for a handhold.

(3) Crawling boards shall be secured to the roof by means of adequate ridge hooks or equivalent effective means.

[Order 73-5, § 296-24-82541, filed 5/9/73 and Order 73-4, § 296-24-82541, filed 5/7/73.]

WAC 296-24-82543 Float or ship scaffolds. (1) Float or ship scaffolds shall support not more than three persons and a few light tools, such as those needed for riveting, bolting, and welding. They shall be constructed in accordance with WAC 296-24-82543 (2) through (6), unless substitute designs and materials provide equivalent strength, stability, and safety.

(2) The platform shall be not less than 3 feet wide and 6 feet long, made of three-quarter-inch plywood, equivalent to American Plywood Association Grade B-B, Group I, Exterior.

(3) Under the platform, there shall be two supporting bearers made from 2- x 4-inch, or 1- x 10-inch rough, selected lumber, or better. They shall be free of knots or other flaws and project 6 inches beyond the platform on both sides. The ends of the platform shall extend about 6 inches beyond the outer edges of the bearers. Each bearer shall be securely fastened to the platform.

(4) An edging of wood not less than 3/4 x 1 1/2 inches, or equivalent, shall be placed around all sides of the platform to prevent tools from rolling off.

(5) Supporting ropes shall be 1-inch diameter manila rope or equivalent, free from deterioration, chemical damage, flaws, or other imperfections. Rope connections shall be such that the platform cannot shift or slip. If two ropes are used with each float, they should be arranged so as to provide four ends which are to be securely fastened to an overhead support. Each of the two supporting ropes shall be hitched around one end of a bearer and pass under the platforms to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(6) Each worker shall be protected by a safety lifebelt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-82543, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-82543, filed 5/9/73 and Order 73-4, § 296-24-82543, filed 5/7/73.]

WAC 296-24-82545 Scope. WAC 296-24-82501 through 296-24-82543 establish safety requirements for the construction, operation, maintenance, and use of scaffolds used in the construction, alteration, demolition, and maintenance of buildings and structures.

[Order 73-5, § 296-24-82545, filed 5/9/73 and Order 73-4, § 296-24-82545, filed 5/7/73.]

WAC 296-24-840 Manually propelled mobile ladder stands and scaffolds (towers).

[Order 73-5, § 296-24-840, filed 5/9/73 and Order 73-4, § 296-24-840, filed 5/7/73.]

WAC 296-24-84001 Definitions. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-84003 through 296-24-84013 unless the context requires otherwise.

(1) Bearer. A horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.

(2) Brace. A tie that holds one scaffold member in a fixed position with respect to another member.

(3) Climbing ladder. A separate ladder with equally spaced rungs usually attached to the scaffold structure for climbing and descending.

(4) Coupler. A device for locking together the components of a tubular metal scaffold which shall be designed and used to safely support the maximum intended loads.

(5) Design working load. The maximum intended load, being the total of all loads including the weight of the people, materials, equipment, and platform.

(6) Equivalent. Alternative design or features, which will provide an equal degree or factor of safety.

(7) Guardrail. A barrier secured to uprights and erected along the exposed sides and ends of platforms to prevent falls of persons.

(8) Handrail. A rail connected to a ladder stand running parallel to the slope and/or top step.

(9) Ladder stand. A mobile fixed size self-supporting ladder consisting of a wide flat tread ladder in the form of stairs. The assembly may include handrails.

(10) Ledger (stringer). A horizontal scaffold member which extends from post to post and which supports the bearer forming a tie between the posts.

(11) Mobile scaffold (tower). A light, medium, or heavy duty scaffold mounted on casters or wheels.

(12) Mobile. "Manually propelled."

(13) Mobile work platform. Generally a fixed work level one frame high on casters or wheels, with bracing diagonally from platform to vertical frame.

(14) Runner. The lengthwise horizontal bracing and/or bearing members.

(15) Scaffold. Any temporary elevated platform and its necessary vertical, diagonal, and horizontal members used for supporting workers and materials. (Also known as a scaffold tower.)

(16) Toeboard. A barrier at platform level erected along the exposed sides and ends of a scaffold platform to prevent falls of materials.

(17) Tube and coupler scaffold. An assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and uprights, and serves to join the various members, usually used in fixed locations.

(18) Tubular welded frame scaffold. A sectional, panel, or frame metal scaffold substantially built up of prefabricated welded sections, which consist of posts and bearers with intermediate connecting members and braced with diagonal or cross braces.

(19) Tubular welded sectional folding scaffold. A sectional, folding metal scaffold either of ladder frame or inside stairway design, substantially built of prefabricated welded sections, which consist of end frames, platform frame, inside inclined stairway frame and braces, or hinged connected diagonal and horizontal braces, capable of being folded into a flat package when the scaffold is not in use.

(20) Work level. The elevated platform, used for supporting workers and their materials, comprising the necessary vertical, horizontal, and diagonal braces, guardrails, and ladder for access to the work platform.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-84001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-84001, filed 5/9/73 and Order 73-4, § 296-24-84001, filed 5/7/73.]

WAC 296-24-84003 General requirements. (1) Application. This section is intended to prescribe rules and requirements for the design, construction, and use of mobile work platforms (including ladder stands but not including aerial ladders) and rolling (mobile) scaffolds (towers). This standard is promulgated to aid in providing for the safety of life, limb, and property, by establishing minimum standards for structural design requirements and for the use of mobile work platforms and towers.

(2) Working loads.

(a) Work platforms and scaffolds shall be capable of carrying the design load under varying circumstances depending upon the conditions of use. Therefore, all parts and appurtenances necessary for their safe and efficient utilization must be integral parts of the design.

(b) Specific design and construction requirements are not a part of this section because of the wide variety of materials and design possibilities. However, the design shall be such as to produce a mobile ladder stand or scaffold that will safely sustain the specified loads. The material selected shall be of sufficient strength to meet the test requirements and shall be protected against corrosion or deterioration.

(i) The design working load of ladder stands shall be calculated on the basis of one or more 200-pound persons together with 50 pounds of equipment each.

(ii) The design load of all scaffolds shall be calculated on the basis of:

Light—Designed and constructed to carry a working load of 25 pounds per square foot.

Medium—Designed and constructed to carry a working load of 50 pounds per square foot.

Heavy—Designed and constructed to carry a working load of 75 pounds per square foot.

All ladder stands and scaffolds shall be capable of supporting at least four times the design working load.

(c) Materials used in mobile ladder stands and scaffolds shall be of standard manufacture and conform to specifications of this section for strength, dimensions, and weights, and shall be selected to safely support the design working load.

(d) Nails, bolts, or other fasteners used in the construction of ladders, scaffolds, and towers shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the unit. Nails shall be driven full length. (All nails should be immediately withdrawn from dismantled lumber.)

(e) All exposed surfaces shall be free from sharp edges, burrs or other safety hazards.

(3) Work levels.

(a) The maximum work level height shall not exceed four times the minimum or least base dimension of any mobile ladder stand or scaffold. Where the basic mobile unit does not meet this requirement, suitable outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to guy or brace the unit against tipping.

(b) The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of 16 inches.

(c) The supporting structure for the work level shall be rigidly braced, using adequate cross bracing or diagonal bracing with rigid platforms at each work level.

(d) The steps of ladder stands shall be fabricated from slip resistant treads.

(e) The work level platform of scaffolds (towers) shall be of wood, aluminum, or plywood planking, steel or expanded metal, for the full width of the scaffold, except for necessary openings. Work platforms shall be secured in place. All planking shall be 2-inch (nominal) scaffold grade minimum 1,500 f. (stress grade) construction grade lumber or equivalent.

(f) All scaffold work levels 10 feet or higher above the ground or floor shall have a standard (4-inch nominal) toeboard.

(g) All work levels 10 feet or higher above the ground or floor shall have a guardrail of 2- by 4-inch nominal lumber or the equivalent installed no less than 36 inches or more than 42 inches high, with a mid-rail, when required, of at least 1- by 4-inch nominal lumber or equivalent.

(h) A climbing ladder, stairway, or equivalent shall be provided for proper access and egress, and shall be affixed or built into the scaffold and so located that its use will not have a tendency to tip the scaffold. A landing platform shall be provided at intervals not to exceed 30 feet.

(4) Wheels or casters.

(a) Wheels or casters shall be properly designed for strength and dimensions to support four times the design working load.

(b) All scaffold casters shall be provided with a positive wheel and/or swivel lock to prevent movement. Ladder stands shall have at least two of the four casters and shall be of the swivel type.

(c) Where leveling of the elevated work platform is required, screw jacks or other suitable means for adjusting the height shall be provided in the base section of each mobile unit.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-84003, filed 7/31/79; Order 73-5, § 296-24-84003, filed 5/9/73 and Order 73-4, § 296-24-84003, filed 5/7/73.]

WAC 296-24-84005 Mobile tubular welded frame scaffolds. (1) General. Units shall be designed to comply with the requirements of WAC 296-24-84003.

(2) Bracing. Scaffolds shall be properly braced by cross braces and/or diagonal braces for securing vertical members together laterally. The cross braces shall be of a length that will automatically square and align vertical members so the erected scaffold is always plumb, square, and rigid.

(3) Spacing. Spacing of panels or frames shall be consistent with the loads imposed. The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alignment of the legs.

(4) Locking. Where uplift may occur, panels shall be locked together vertically by pins or other equivalent means.

(5) Erection. Only the manufacturer of a scaffold or the manufacturers qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding 50 feet in height above the base, unless such structure is approved in writing by a registered professional engineer or erected in accordance with instructions furnished by the manufacturer.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-84005, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-84005, filed 5/9/73 and Order 73-4, § 296-24-84005, filed 5/7/73.]

WAC 296-24-84007 Mobile tubular welded sectional folding scaffolds. (1) General. Units including sectional stairway and sectional ladder scaffolds shall be designed to comply with the requirements of WAC 296-24-84003.

(2) Stairway. An integral stairway and work platform shall be incorporated into the structure of each sectional folding stairway scaffold.

(3) Bracing. An integral set of pivoting and hinged folding diagonal and horizontal braces and a detachable work platform shall be incorporated into the structure of each sectional folding ladder scaffold.

(4) Sectional folding stairway scaffolds. Sectional folding stairway scaffolds shall be designed as medium duty scaffolds except for high clearance. These special base sections shall be designed as light duty scaffolds. When upper sectional folding stairway scaffolds are used with a special high clearance base, the load capacity of the entire scaffold shall be reduced accordingly. The width of a sectional folding stairway scaffold shall not exceed 4 1/2 feet. The maximum length of a sectional folding stairway scaffold shall not exceed 6 feet.

(5) Sectional folding ladder scaffolds. Sectional folding ladder scaffolds shall be designed as light duty scaffolds including special base (open end) sections which are designed for high clearance. For certain special applications the six-foot folding ladder scaffolds, except for special high clearance base sections, shall be designed for use as medium duty scaffolds. The width of a sectional folding ladder scaffold shall not exceed 4 1/2 feet. The maximum length of a sectional folding ladder scaffold shall not exceed 6 feet 6 inches for a six-foot long unit, 8 feet 6 inches for an eight-foot unit or 10 feet 6 inches for a ten-foot long unit.

(6) End frames. The end frames of sectional ladder and stairway scaffolds shall be designed so that the horizontal bearers provide supports for multiple planking levels.

(7) Erection. Only the manufacturer of the scaffold or the manufacturers qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding 50 feet in height above the base, unless such structure is approved in writing by a licensed professional engineer, or erected in accordance with instructions furnished by the manufacturer to comply with requirements in this section.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-84007, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-84007, filed 5/9/73 and Order 73-4, § 296-24-84007, filed 5/7/73.]

WAC 296-24-84009 Mobile tube and coupler scaffolds. (1) Design. Units shall be designed to comply with the applicable requirements of WAC 296-24-84003.

(2) Material. The material used for the couplers shall be of a structural type, such as a drop-forged steel, malleable iron or structural grade aluminum. The use of gray cast iron is prohibited.

(3) Erection. Only the manufacturer of the scaffold or their qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding 50 feet in height above the base, unless such structure is approved in writing by a licensed professional engineer, or erected in accordance with instructions furnished by the manufacturer to comply with requirements in this section.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-84009, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-84009, filed 5/9/73 and Order 73-4, § 296-24-84009, filed 5/7/73.]

WAC 296-24-84011 Mobile work platforms. (1) Design. Units shall be designed for the use intended and shall comply with the requirements of WAC 296-24-84003.

(2) Base width. The minimum width of the base of mobile work platforms shall not be less than 20 inches.

(3) Bracing. Adequate rigid diagonal bracing to vertical members shall be provided.

[Order 73-5, § 296-24-84011, filed 5/9/73 and Order 73-4, § 296-24-84011, filed 5/7/73.]

WAC 296-24-84013 Mobile ladder stands. (1) Design. Units shall comply with applicable requirements of WAC 296-24-84003.

(2) Base width. The minimum base width shall conform to WAC 296-24-84003 (3) and (a). The maximum length of the base section shall be the total length of combined steps and top assembly, measured horizontally, plus five-eighths inch per step of rise.

(3) Steps. Steps shall be uniformly spaced, and sloped, with a rise of not less than nine inches, nor more than ten inches, and a depth of not less than seven inches. The slope of the steps section shall be a minimum of fifty-five degrees and a maximum of sixty degrees measured from the horizontal.

(4) Handrails.

(a) Units having more than five steps or 60 inches vertical height to the top step shall be equipped with handrails.

(b) Handrails shall be a minimum of 29 inches high. Measurements shall be taken vertically from the center of the step.

(5) Loading. The load (see WAC 296-24-84003 (2)(b)(ii)) shall be applied uniformly to a 3 1/2 inches wide area front to back at the center of the width span with a safety factor of four.

[Order 73-5, § 296-24-84013, filed 5/9/73 and Order 73-4, § 296-24-84013, filed 5/7/73.]

WAC 296-24-855 Other working surfaces.

[Order 73-5, § 296-24-855, filed 5/9/73 and Order 73-4, § 296-24-855, filed 5/7/73.]

WAC 296-24-85501 Dockboards (bridge plates). (1) Portable and powered dockboards shall be strong enough to carry the load imposed on them.

(2) Portable dockboards shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping.

(3) Powered dockboards shall be designed and constructed in accordance with Commercial Standard CS202-56 (1961) "Industrial Lifts and Hinged Loading Ramps" published by the U.S. Department of Commerce.

(4) Handholds, or other effective means, shall be provided on portable dockboards to permit safe handling.

(5) Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

[Order 73-5, § 296-24-85501, filed 5/9/73 and Order 73-4, § 296-24-85501, filed 5/7/73.]

WAC 296-24-85503 Forging machine area. (1) Machines shall be so located as to give (a) enough clearance between machines so that the movement of one operator will not interfere with the work of another, (b) ample room for cleaning machines and handling the work, including material and scrap. The arrangement of machines shall be such that operators will not stand in aisles.

(2) Aisles shall be provided of sufficient width to permit the free movement of employees bringing and removing material. This aisle space is to be independent of working and storage space and should be defined by marking.

(3) Wood platforms used on the floor in front of machines shall be substantially constructed with nonslip surfaces.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-85503, filed 7/31/79; Order 73-5, § 296-24-85503, filed 5/9/73 and Order 73-4, § 296-24-85503, filed 5/7/73.]

WAC 296-24-85505 Veneer machinery. (1) Sides of steam vats shall extend to a height of not less than 36 inches above the floor, working platform, or ground.

(2) Large steam vats divided into sections shall be provided with substantial walkways between sections. Each walkway shall be provided with a standard handrail on each exposed side. These handrails may be removable, if necessary.

(3) Covers shall be removed only from that portion of steaming vats on which people are working and a portable railing shall be placed at this point to protect the operators.

(4) Workers shall not ride or step on logs in steam vats.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-85505, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-85505, filed 5/9/73 and Order 73-4, § 296-24-85505, filed 5/7/73.]

PART J-2
POWERED PLATFORMS, ETC.

WAC 296-24-870 Power platforms for exterior building maintenance. (1) Scope. This section covers powered platform installations permanently dedicated to interior or exterior building maintenance of a specific structure or group of structures. This section does not apply to suspended scaffolds (swinging scaffolds) used to service buildings on a temporary basis and covered under Part J-1 of this chapter, nor to suspended scaffolds used for construction work and covered under Part J of chapter 296-155 WAC. Building maintenance includes, but is not limited to, such tasks as window cleaning, caulking, metal polishing, and reglazing.

(2) Application.

(a) New installations. This section applies to all permanent installations completed after July 23, 1990. Major modifications to existing installations completed after that date are also considered new installations under this section.

(b) Existing installations.

(i) Permanent installations in existence and/or completed before July 23, 1990, shall comply with WAC 296-24-87009, 296-24-87015, 296-24-87017, 296-24-87019, and 296-24-87035.

(ii) In addition, permanent installations completed after August 27, 1971, and in existence and/or completed before July 23, 1990, shall comply with WAC 296-24-87037.

(3) Assurance.

(a) Building owners of new installations shall inform the employer before each use in writing that the installation meets the requirements of WAC 296-24-87011(1) and 296-24-87013(1) and the additional design criteria contained in other provisions of WAC 296-24-87011 and 296-24-87013 relating to: Required load sustaining capabilities of platforms, building components, hoisting and supporting equipment; stability factors for carriages, platforms and supporting equipment; maximum horizontal force for movement of carriages and davits; design of carriages, hoisting machines, wire rope and stabilization systems; and design criteria for electrical wiring and equipment.

(b) Building owners shall base the information required in (a) of this subsection on the results of a field test of the installation before being placed into service and following any major alteration to an existing installation, as required in WAC 296-24-87009(1). The assurance shall also be based on all other relevant available information, including, but not limited to, test data, equipment specifications and verification by a registered professional engineer.

(c) Building owners of all installations, new and existing, shall inform the employer in writing that the installation has been inspected, tested and maintained in compliance with the requirements of WAC 296-24-87009 and 296-24-87015 and that all protection anchorages meet the requirements of WAC 296-24-87035 (3)(j), Appendix C.

(d) The employer shall not permit employees to use the installation prior to receiving assurance from the building owner that the installation meets the requirements contained in (a) and (c) of this subsection.

[Statutory Authority: Chapter 49.17 RCW. 90-09-026 (Order 90-01), § 296-24-870, filed 4/10/90, effective 5/25/90; Order 73-5, § 296-24-870, filed 5/9/73 and Order 73-4, § 296-24-870, filed 5/7/73.]

WAC 296-24-87001 Definitions. (1) Anemometer. An instrument for measuring wind velocity.

(2) Angulated roping. A system of platform suspension in which the upper wire rope sheaves or suspension points are closer to the plane of the building face than the corresponding attachment points on the platform, thus causing the

platform to press against the face of the building during its vertical travel.

(3) ANSI. American National Standards Institute.

(4) Babbitted fastenings. The method of providing wire rope attachments in which the ends of the wire strands are bent back and are held in a tapered socket by means of poured molten babbitt metal.

(5) Brake-disc type. A brake in which the holding effect is obtained by frictional resistance between one or more faces of discs keyed to the rotating member to be held and fixed discs keyed to the stationary or housing member (pressure between the discs being applied axially).

(6) Brake-self-energizing band type. An essentially unidirectional brake in which the holding effect is obtained by the snubbing action of a flexible band wrapped about a cylindrical wheel or drum affixed to the rotating member to be held, the connections and linkages being so arranged that the motion of the brake wheel or drum will act to increase the tension or holding force of the band.

(7) Brake-shoe type. A brake in which the holding effect is obtained by applying the direct pressure of two or more segmental friction elements held to a stationary member against a cylindrical wheel or drum affixed to the rotating member to be held.

(8) Building face rollers. A specialized form of guide roller designed to contact a portion of the outer face or wall structure of the building, and to assist in stabilizing the operators' platform during vertical travel.

(9) Building maintenance. Operations such as window cleaning, caulking, metal polishing, reglazing, and general maintenance on building surfaces.

(10) Cable. A conductor, or group of conductors, enclosed in a weatherproof sheath, that may be used to supply electrical power and/or control current for equipment or to provide voice communication circuits.

(11) Carriage. A wheeled vehicle used for the horizontal movement and support of other equipment.

(12) Certification. A written, signed, and dated statement confirming the performance of a requirement of this section.

(13) Combination cable. A cable having both steel structural members capable of supporting the platform, and copper or other electrical conductors insulated from each other and the structural members by nonconducive barriers.

(14) Competent person. A person who, because of training and experience, is capable of identifying hazardous or dangerous conditions in powered platform installations and of training employees to identify such conditions.

(15) Continuous pressure. Operation by means of buttons or switches, any one of which may be used to control the movement of the working platform or roof car, only as long as the button or switch is manually maintained in the actuating position.

(16) Control. A system governing starting, stopping, direction, acceleration, speed, and retardation of moving members.

(17) Controller. A device or group of devices, usually contained in a single enclosure, which serves to control in some predetermined manner the apparatus to which it is connected.

(18) Davit. A device, used singly or in pairs, for suspending a powered platform from work, storage and rigging locations on the building being serviced. Unlike outriggers, a davit reacts its operating load into a single roof socket or carriage attachment.

(19) Electrical ground. A conducting connection between an electrical circuit or equipment and the earth, or some conducting body which serves in place of the earth.

(20) Equivalent. Alternative designs, materials or methods which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

(21) Ground rigging. A method of suspending a working platform starting from a safe surface to a point of suspension above the safe surface.

(22) Ground rigged davit. A davit which cannot be used to raise a suspended working platform above the building face being serviced.

(23) Guide button. A building face anchor designed to engage a guide track mounted on a platform.

(24) Guide roller. A rotating, bearing-mounted, generally cylindrical member, operating separately or as part of a guide shoe assembly, attached to the platform, and providing rolling contact with building guideways, or other building contact members.

(25) Guide shoe. An assembly of rollers, slide members, or the equivalent, attached as a unit to the operators' platform, and designed to engage with the building members provided for the vertical guidance of the operators' platform.

(26) Hoisting machine. A device intended to raise and lower a suspended or supported unit.

(27) Hoist rated load. The hoist manufacturer's maximum allowable operating load.

(28) Installation. All the equipment and all affected parts of a building which are associated with the performance of building maintenance using powered platforms.

(29) Interlock. A device actuated by the operation of some other device with which it is directly associated, to govern succeeding operations of the same or allied devices.

(30) Intermittent stabilization. A method of platform stabilization in which the angulated suspension wire rope(s) are secured to regularly spaced building anchors.

(31) Lanyard. A flexible line of rope, wire rope or strap which is used to secure the body harness to a deceleration device, lifeline or anchorage.

(32) Lifeline. A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

(33) Live load. The total static weight of workers, tools, parts, and supplies that the equipment is designed to support.

(34) Obstruction detector. A control that will stop the suspended or supported unit in the direction of travel if an obstruction is encountered, and will allow the unit to move only in a direction away from the obstruction.

(35) Operating control. A mechanism regulating or guiding the operation of equipment that ensures a specific operating mode.

(36) Operating device. A pushbutton, lever, or other manual device used to actuate a control.

(37) Outrigger. A device, used singly or in pairs, for suspending a working platform from work, storage, and rigging locations on the building being serviced. Unlike davits, an outrigger reacts its operating moment load as at least two opposing vertical components acting into two or more distinct roof points and/or attachments.

(38) Platform rated load. The combined weight of workers, tools, equipment and other material which is permitted to be carried by the working platform at the installation, as stated on the load rating plate.

(39) Poured socket. The method of providing wire rope terminations in which the ends of the rope are held in a tapered socket by means of poured spelter or resins.

(40) Powered platform. Equipment to provide access to the exterior of a building for maintenance, consisting of a suspended power-operated working platform, a roof car, or other suspension means, and the requisite operating and control devices.

(41) Primary brake. A brake designed to be applied automatically whenever power to the prime mover is interrupted or discontinued.

(42) Prime mover. The source of mechanical power for a machine.

(43) Rated load. The manufacturer's recommended maximum load.

(44) Rated strength. The strength of wire rope, as designated by its manufacturer or vendor, based on standard testing procedures or acceptable engineering design practices.

(45) Rated working load. The combined static weight of workers, materials, and suspended or supported equipment.

(46) Registered professional engineer. A person who has been duly and currently registered and licensed by an authority within the United States or its territories to practice the profession of engineering.

(47) Relay, direction. An electrically energized contactor responsive to an initiating control circuit, which in turn causes a moving member to travel in a particular direction.

(48) Relay, potential for vertical travel. An electrically energized contactor responsive to initiating control circuit, which in turn controls the operation of a moving member in both directions. This relay usually operates in conjunction with direction relays, as covered under the definition "relay direction."

(49) Roof car. A structure for the suspension of a working platform, providing for its horizontal movement to working positions.

(50) Roof-powered platform. A powered platform having the raising and lowering mechanism located on a roof car.

(51) Roof rigged davit. A davit used to raise the suspended working platform above the building face being serviced. This type of davit can also be used to raise a suspended working platform which has been ground-rigged.

(52) Rope. The equipment used to suspend a component of an equipment installation, i.e., wire rope.

(53) Safe surface. A horizontal surface intended to be occupied by personnel, which is so protected by a fall protection system that it can be reasonably assured that said occupants will be protected against falls.

(54) Secondary brake. A brake designed to arrest the descent of the suspended or supported equipment in the event of an overspeed condition.

(55) Self-powered platform. A powered platform having the raising and lowering mechanism located on the working platform.

(56) Speed reducer. A positive type speed reducing machine.

(57) Stability factor. The ratio of the stabilizing moment to the overturning moment.

(58) Stabilizer tie. A flexible line connecting the building anchor and the suspension wire rope supporting the platform.

(59) Supported equipment. Building maintenance equipment that is held or moved to its working position by means of attachment directly to the building or extensions of the building being maintained.

(60) Suspended equipment. Building maintenance equipment that is suspended and raised or lowered to its working position by means of ropes or combination cables attached to some anchorage above the equipment.

(61) Suspended scaffold (swinging scaffold). A scaffold supported on wire or other ropes, used for work on, or for providing access to, vertical sides of structures on a temporary basis. Such scaffold is not designed for use on a specific structure or group of structures.

(62) Tail line. The nonsupporting end of the wire rope used to suspend the platform.

(63) Tie-in guides. The portion of a building that provides continuous positive engagement between the building and a suspended or supported unit during its vertical travel on the face of the building.

(64) Traction hoist. A type of hoisting machine that does not accumulate the suspension wire rope on the hoisting drum or sheave, and is designed to raise and lower a suspended load by the application of friction forces between the suspension wire rope and the drum or sheave.

(65) Transportable outriggers. Outriggers designed to be moved from one work location to another.

(66) Traveling cable. A cable made up of electrical or communication conductors or both, and providing electrical connection between the working platform and the roof car or other fixed point.

(67) Trolley carriage. A carriage suspended from an overhead track structure.

(68) Verified. Accepted by design, evaluation, or inspection by a registered professional engineer.

(69) Weatherproof. Equipment so constructed or protected that exposure to the weather will not interfere with its proper operation.

(70) Winding drum hoist. A type of hoisting machine that accumulates the suspension wire rope on the hoisting drum.

(71) Working platform. The suspended or supported equipment intended to provide access to the face of the building and manned by persons engaged in building maintenance.

(72) Wrap. One complete turn of the suspension wire rope around the surface of a hoist drum.

(73) Yield point. The stress at which the material exhibits a permanent set of 0.2 percent.

(74) Zinced fastenings. The method of providing wire rope attachments in which the splayed or fanned wire ends are held in a tapered socket by means of poured molten zinc.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-87001, filed 7/20/94, effective 9/20/94; 90-09-026 (Order 90-01), § 296-24-87001, filed 4/10/90, effective 5/25/90; Order 73-5, § 296-24-87001, filed 5/9/73 and Order 73-4, § 296-24-87001, filed 5/7/73.]

WAC 296-24-87009 Inspections and tests. (1) Installations and alterations. All completed building maintenance equipment installations shall be inspected and tested in the field before being placed in initial service to determine that all parts of the installation conform to applicable requirements of this standard, and that all safety and operating equipment is functioning as required. A similar inspection and test shall be made following any major alteration to an existing installation. No hoist in an installation shall be subjected to a load in excess of 125 percent of its rated load.

(2) Periodic inspections and tests.

(a) Related building supporting structures shall undergo periodic inspection by a competent person at intervals not exceeding 12 months.

(b) All parts of the equipment including control systems shall be inspected, and, where necessary, tested by a competent person at intervals specified by the manufacturer/supplier, but not to exceed 12 months, to determine that they are in safe operating condition. Parts subject to wear, such as wire ropes, bearings, gears, and governors shall be inspected and/or tested to determine that they have not worn to such an extent as to affect the safe operation of the installation.

(c) The building owner shall keep a certification record of each inspection and test required under (a) and (b) of this subsection. The certification record shall include the date of the inspection, the signature of the person who performed the inspection, and the number, or other identifier, of the building support structure and equipment which was inspected. This certification record shall be kept readily available for review by the director or an authorized representative and by the employer.

(d) Working platforms and their components shall be inspected by the employer for visible defects before every use and after each occurrence which could affect the platform's structural integrity.

(3) Maintenance, inspections and tests.

(a) A maintenance inspection and, where necessary, a test shall be made of each platform installation every 30 days, or where the work cycle is less than 30 days such inspection and/or test shall be made prior to each work cycle. This inspection and test shall follow procedures recommended by the manufacturer, and shall be made by a competent person.

(b) The building owner shall keep a certification record of each inspection and test performed under (a) of this subsection. The certification record shall include the date of the inspection and test, the signature of the person who performed the inspection and/or test, and an identifier for the platform installation which was inspected. The certification record shall be kept readily available for review by the director or an authorized representative and by the employer.

(4) Special inspection of governors and secondary brakes.

(a) Governors and secondary brakes shall be inspected and tested at intervals specified by the manufacturer/supplier but not to exceed every 12 months.

(b) The results of the inspection and test shall confirm that the initiating device for the secondary braking system operates at the proper overspeed.

(c) The results of the inspection and test shall confirm that the secondary brake is functioning properly.

(d) If any hoisting machine or initiating device for the secondary brake system is removed from the equipment for testing, all reinstalled and directly related components shall be reinspected prior to returning the equipment installation to service.

(e) Inspection of governors and secondary brakes shall be performed by a competent person.

(f) The secondary brake governor and actuation device shall be tested before each day's use. Where testing is not feasible, a visual inspection of the brake shall be made instead to ensure that it is free to operate.

(5) Adverse weather. The operation of powered platforms during severe adverse weather conditions is prohibited.

(6) Suspension wire rope maintenance, inspection and replacement.

(a) Suspension wire rope shall be maintained and used in accordance with procedures recommended by the wire rope manufacturer.

(b) Suspension wire rope shall be inspected by a competent person for visible defects and gross damage to the rope before every use and after each occurrence which might affect the wire rope's integrity.

(c) A thorough inspection of suspension wire ropes in service shall be made once a month. Suspension wire ropes that have been inactive for 30 days or longer shall have a thorough inspection before they are placed into service. These thorough inspections of suspension wire ropes shall be performed by a competent person.

(d) The need for replacement of a suspension wire rope shall be determined by inspection and shall be based on the condition of the wire rope. Any of the following conditions or combination of conditions will be cause for removal of the wire rope:

(i) Broken wires exceeding three wires in one strand or six wires in one rope lay;

(ii) Distortion of rope structure such as would result from crushing or kinking;

(iii) Evidence of heat damage;

(iv) Evidence of rope deterioration from corrosion;

(v) A broken wire within 18 inches (460.8 mm) of the end attachments;

(vi) Noticeable rusting and pitting;

(vii) Evidence of core failure (a lengthening of rope lay, protrusion of the rope core and a reduction in rope diameter suggests core failure); or

(viii) More than one valley break (broken wire);

(ix) Outer wire wear exceeds one-third of the original outer wire diameter;

(x) Any other condition which the competent person determines has significantly affected the integrity of the rope.

(e) The building owner shall keep a certification record of each monthly inspection of a suspension wire rope as

required in subdivision (c) of this subsection. The record shall include the date of the inspection, the signature of the person who performed the inspection, and a number, or other identifier, of the wire rope which was inspected. This record of inspection shall be made available for review by the director or an authorized representative and by the employer.

(7) Hoist inspection. Before lowering personnel below the top elevation of the building, the hoist shall be tested each day in the lifting direction with the intended load to make certain it has sufficient capacity to raise the personnel back to the boarding level.

[Statutory Authority: Chapter 49.17 RCW. 90-09-026 (Order 90-01), § 296-24-87009, filed 4/10/90, effective 5/25/90; Order 73-5, § 296-24-87009, filed 5/9/73 and Order 73-4, § 296-24-87009, filed 5/7/73.]

WAC 296-24-87011 Powered platform installations—Affected parts of buildings. (1) General requirements. The following requirements apply to affected parts of buildings which utilize working platforms for building maintenance.

(a) Structural supports, tie-downs, tie-in guides, anchoring devices and any affected parts of the building included in the installation shall be designed by or under the direction of a registered professional engineer experienced in such design;

(b) Exterior installations shall be capable of withstanding prevailing climatic conditions;

(c) The building installation shall provide safe access to, and egress from, the equipment and sufficient space to conduct necessary maintenance of the equipment;

(d) The affected parts of the building shall have the capability of sustaining all the loads imposed by the equipment; and

(e) The affected parts of the building shall be designed so as to allow the equipment to be used without exposing employees to a hazardous condition.

(2) Tie-in guides.

(a) The exterior of each building shall be provided with tie-in guides unless the conditions in (b) or (c) of this subsection are met.

Note: See Figure 1 in Appendix B of this section for a description of a typical continuous stabilization system utilizing tie-in guides.

(b) If angulated roping is employed, tie-in guides required in (a) of this subsection may be eliminated for not more than 75 feet (22.9 m) of the uppermost elevation of the building, if infeasible due to exterior building design, provided an angulation force of at least 10 pounds (44.4 n) is maintained under all conditions of loading.

(c) Tie-in guides required in (a) of this subsection may be eliminated if one of the guide systems in items (i), (ii), or (iii) of this subdivision is provided, or an equivalent.

(i) Intermittent stabilization system. The system shall keep the equipment in continuous contact with the building facade, and shall prevent sudden horizontal movement of the platform. The system may be used together with continuous positive building guide systems using tie-in guides on the same building, provided the requirements for each system are met.

(A) The maximum vertical interval between building anchors shall be 3 floors or 50 feet (15.3 m), whichever is less.

(B) Building anchors shall be located vertically so that attachment of the stabilizer ties will not cause the platform suspension ropes to angulate the platform horizontally across the face of the building. The anchors shall be positioned horizontally on the building face so as to be symmetrical about the platform suspension ropes.

(C) Building anchors shall be easily visible to employees and shall allow a stabilizer tie attachment for each of the platform suspension ropes at each vertical interval. If more than two suspension ropes are used on a platform, only the two building-side suspension ropes at the platform ends shall require a stabilizer attachment.

(D) Building anchors which extend beyond the face of the building shall be free of sharp edges or points. Where cables, suspension wire ropes and lifelines may be in contact with the building face, external building anchors shall not interfere with their handling or operation.

(E) The intermittent stabilization system building anchors and components shall be capable of sustaining without failure at least 4 times the maximum anticipated load applied or transmitted to the components and anchors. The minimum design wind load for each anchor shall be 300 (1334 n) pounds, if 2 anchors share the wind load.

(F) The building anchors and stabilizer ties shall be capable of sustaining anticipated horizontal and vertical loads from winds specified for roof storage design which may act on the platform and wire ropes if the platform is stranded on a building face. If the building anchors have different spacing than the suspension wire rope or if the building requires different suspension spacings on one platform, one building anchor and stabilizer tie shall be capable of sustaining the wind loads.

Note: See Figure 2 in Appendix B of this section for a description of a typical intermittent stabilization system.

(ii) Button guide stabilization system.

(A) Guide buttons shall be coordinated with platform mounted equipment of WAC 296-24-87013 (5)(f).

(B) Guide buttons shall be located horizontally on the building face so as to allow engagement of each of the guide tracks mounted on the platform.

(C) Guide buttons shall be located in vertical rows on the building face for proper engagement of the guide tracks mounted on the platform.

(D) Two guide buttons shall engage each guide track at all times except for the initial engagement.

(E) Guide buttons which extend beyond the face of the building shall be free of sharp edges or points. Where cables, ropes and lifelines may be in contact with the building face, guide buttons shall not interfere with their handling or operation.

(F) Guide buttons, connections and seals shall be capable of sustaining without damage at least the weight of the platform, or provision shall be made in the guide tracks or guide track connectors to prevent the platform and its attachments from transmitting the weight of the platform to the guide buttons, connections and seals. In either case, the minimum design load shall be 300 pounds (1334 n) per building anchor.

Note: See WAC 296-24-87013 (5)(f) for relevant equipment provisions.

Note: See Figure 3 in Appendix B of this section for a description of a typical button guide stabilization system.

(iii) System utilizing angulated roping and building face rollers. The system shall keep the equipment in continuous contact with the building facade, and shall prevent sudden horizontal movement of the platform. This system is acceptable only where the suspended portion of the equipment in use does not exceed 130 feet (39.6 m) above a safe surface or ground level, and where the platform maintains no less than 10 pounds (44.4 n) angulation force on the building facade.

(d) Tie-in guides for building interiors (atriums) may be eliminated when a registered professional engineer determines that an alternative stabilization system, including systems in (c)(i), (ii), and (iii) of this subsection, or a platform tie-off at each work station will provide equivalent safety.

(3) Roof guarding.

(a) Employees working on roofs while performing building maintenance shall be protected by a perimeter guarding system which meets the requirements of WAC 296-24-75007(1).

(b) The perimeter guard shall not be more than 6 inches (152 mm) inboard of the inside face of a barrier, i.e. the parapet wall, or roof edge curb of the building being serviced; however, the perimeter guard location shall not exceed an 18 inch (457 mm) setback from the exterior building face.

(4) Equipment stops. Operational areas for trackless type equipment shall be provided with structural stops, such as curbs, to prevent equipment from traveling outside its intended travel areas and to prevent a crushing or shearing hazard.

(5) Maintenance access. Means shall be provided to traverse all carriages and their suspended equipment to a safe area for maintenance and storage.

(6) Elevated track.

(a) An elevated track system which is located 4 feet (1.2 m) or more above a safe surface, and traversed by carriage supported equipment, shall be provided with a walkway and guardrail system; or

(b) The working platform shall be capable of being lowered, as part of its normal operation, to the lower safe surface for access and egress of the personnel and shall be provided with a safe means of access and egress to the lower safe surface.

(7) Tie-down anchors. Imbedded tie-down anchors, fasteners, and affected structures shall be resistant to corrosion.

(8) Cable stabilization.

(a) Hanging lifelines and all cables not in tension shall be stabilized at each 200 foot (61 m) interval of vertical travel of the working platform beyond an initial 200 foot (61 m) distance.

(b) Hanging cables, other than suspended wire ropes, which are in constant tension shall be stabilized when the vertical travel exceeds an initial 600 foot (183 m) distance, and at further intervals of 600 feet (183 m) or less.

(9) Emergency planning. A written emergency action plan shall be developed and implemented for each kind of working platform operation. This plan shall explain the emergency procedures which are to be followed in the event of a power failure, equipment failure or other emergencies which may be encountered. The plan shall also include that employees be informed about the building emergency escape routes, procedures and alarm systems before operating a platform. Upon initial assignment and whenever the plan is changed the employer shall review with each employee those parts of the plan which the employee must know to protect himself or herself in the event of an emergency.

(10) Building maintenance. Repairs or major maintenance of those building portions that provide primary support for the suspended equipment shall not affect the capability of the building to meet the requirements of this standard.

(11) Electrical requirements. The following electrical requirements apply to buildings which utilize working platforms for building maintenance.

(a) General building electrical installations shall comply with chapter 296-24 WAC Part L, unless otherwise specified in this section;

(b) Building electrical wiring shall be of such capacity that when full load is applied to the equipment power circuit not more than a five percent drop from building service vault voltage shall occur at any power circuit outlet used by equipment regulated by this section;

(c) The equipment power circuit shall be an independent electrical circuit that shall remain separate from all other equipment within or on the building, other than power circuits used for hand tools that will be used in conjunction with the equipment. If the building is provided with an emergency power system, the equipment power circuit may also be connected to this system;

(d) The power circuit shall be provided with a disconnect switch that can be locked in the "**off**" and "**on**" positions. The switch shall be conveniently located with respect to the primary operating area of the equipment to allow the operators of the equipment access to the switch;

(e) The disconnect switch for the power circuit shall be locked in the "**on**" position when the equipment is in use; and

(f) An effective two-way voice communication system shall be provided between the equipment operators and persons stationed within the building being serviced. The communications facility shall be operable and shall be manned at all times by persons stationed within the building whenever the platform is being used.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-87011, filed 11/22/91, effective 12/24/91; 90-09-026 (Order 90-01), § 296-24-87011, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87013 Powered platform installations—Equipment. (1) General requirements. The following requirements apply to equipment which are part of a powered platform installation, such as platforms, stabilizing components, carriages, outriggers, davits, hoisting machines, wire ropes and electrical components.

(a) Equipment installations shall be designed by or under the direction of a registered professional engineer experienced in such design;

(b) The design shall provide for a minimum live load of 250 pounds (113.6 kg) for each occupant of a suspended or supported platform;

(c) Equipment that is exposed to wind when not in service shall be designed to withstand forces generated by winds of at least 100 miles per hour (44.7 m/s) at 30 feet (9.2 m) above grade; and

(d) Equipment that is exposed to wind when in service shall be designed to withstand forces generated by winds of at least 50 miles per hour (22.4 m/s) for all elevations.

(2) Construction requirements. Bolted connections shall be self-locking or shall otherwise be secured to prevent loss of the connections by vibration.

(3) Suspension methods. Elevated building maintenance equipment shall be suspended by a carriage, outriggers, davits or an equivalent method.

(a) Carriages. Carriages used for suspension of elevated building maintenance equipment shall comply with the following:

(i) The horizontal movement of a carriage shall be controlled so as to ensure its safe movement and allow accurate positioning of the platform for vertical travel or storage;

(ii) Powered carriages shall not exceed a traversing speed of 50 feet per minute (0.3 m/s);

(iii) The initiation of a traversing movement for a manually propelled carriage on a smooth level surface shall not require a person to exert a horizontal force greater than 40 pounds (444.8 n);

(iv) Structural stops and curbs shall be provided to prevent the traversing of the carriage beyond its designed limits of travel;

(v) Traversing controls for a powered carriage shall be of a continuous pressure weatherproof type. Multiple controls when provided shall be arranged to permit operation from only one control station at a time. An emergency stop device shall be provided on each end of a powered carriage for interrupting power to the carriage drive motors;

(vi) The operating control(s) shall be so connected that in the case of suspended equipment, traversing of a carriage is not possible until the suspended portion of the equipment is located at its uppermost designed position for traversing; and is free of contact with the face of the building or building guides. In addition, all protective devices and interlocks are to be in the proper position to allow traversing of the carriage;

(vii) Stability for underfoot supported carriages shall be obtained by gravity, by an attachment to a structural support, or by a combination of gravity and a structural support. The use of flowing counterweights to achieve stability is prohibited.

(A) The stability factor against overturning shall not be less than 2 for horizontal traversing of the carriage, including the effects of impact and wind.

(B) The carriages and their anchorages shall be capable of resisting accidental over-tensioning of the wire ropes suspending the working platform, and this calculated value shall include the effect of one and one-half times the stall capacity of the hoist motor. All parts of the installation shall be capable of withstanding without damage to any part of the installation the forces resulting from the stall load of the hoist and one-half the wind load.

(C) Roof carriages which rely on having tie-down devices secured to the building to develop the required stability against overturning shall be provided with an interlock which will prevent vertical platform movement unless the tie-down is engaged;

(viii) An automatically applied braking or locking system, or equivalent, shall be provided that will prevent unintentional traversing of power-traversed or power assisted carriages;

(ix) A manual or automatic braking or locking system or equivalent, shall be provided that will prevent unintentional traversing of manually propelled carriages;

(x) A means to lock out the power supply for the carriage shall be provided;

(xi) Safe access to and egress from the carriage shall be provided from a safe surface. If the carriage traverses an elevated area, any operating area on the carriage shall be protected by a guardrail system in compliance with the provisions of subsection (5)(a)(vi) of this section. Any access gate shall be self-closing and self-latching, or provided with an interlock;

(xii) Each carriage work station position shall be identified by location markings and/or position indicators; and

(xiii) The motors shall stall if the load on the hoist motors is at any time in excess of three times that necessary for lifting the working platform with its rated load.

(b) Transportable outriggers.

(i) Transportable outriggers may be used as a method of suspension for ground rigged working platforms where the point of suspension does not exceed 300 feet (91.5 m) above a safe surface. Tie-in guide system(s) shall be provided which meet the requirements of WAC 296-24-87011(2).

(ii) Transportable outriggers shall be used only with self-powered, ground rigged working platforms.

(iii) Each transportable outrigger shall be secured with a tie-down to a verified anchorage on the building during the entire period of its use. The anchorage shall be designed to have a stability factor of not less than 4 against overturning or upsetting of the outrigger.

(iv) Access to and egress from the working platform shall be from and to a safe surface below the point of suspension.

(v) Each transportable outrigger shall be designed for lateral stability to prevent roll-over in the event an accidental lateral load is applied to the outrigger. The accidental lateral load to be considered in this design shall be not less than 70 percent of the rated load of the hoist.

(vi) Each transportable outrigger shall be designed to support an ultimate load of not less than 4 times the rated load of the hoist.

(vii) Each transportable outrigger shall be so located that the suspension wire ropes for two point suspended working platforms are hung parallel.

(viii) A transportable outrigger shall be tied-back to a verified anchorage on the building with a rope equivalent in strength to the suspension rope.

(ix) The tie-back rope shall be installed parallel to the centerline of the outrigger.

(c) Davits.

(i) Every davit installation, fixed or transportable, rotatable or nonrotatable shall be designed and installed to insure that it has a stability factor against overturning of not less than 4.

(ii) The following requirements apply to roof rigged davit systems:

(A) Access to and egress from the working platform shall be from a safe surface. Access or egress shall not require persons to climb over a building's parapet or guard railing; and

(B) The working platform shall be provided with wheels, casters or a carriage for traversing horizontally.

(iii) The following requirements apply to ground rigged davit systems:

(A) The point of suspension shall not exceed 300 feet (91.5 m) above a safe surface. Guide system(s) shall be provided which meet the requirements of WAC 296-24-87011(2);

(B) Access and egress to and from the working platform shall only be from a safe surface below the point of suspension.

(iv) A rotating davit shall not require a horizontal force in excess of 40 pounds (177.9 n) per person to initiate a rotating movement.

(v) The following requirements shall apply to transportable davits:

(A) A davit or part of a davit weighing more than 80 pounds (36 kg) shall be provided with a means for its transport, which shall keep the center of gravity of the davit at or below 36 inches (914 mm) above the safe surface during transport;

(B) A davit shall be provided with a pivoting socket or with a base that will allow the insertion or removal of a davit at a position of not more than 35 degrees above the horizontal, with the complete davit inboard of the building face being serviced; and

(C) Means shall be provided to lock the davit to its socket or base before it is used to suspend the platform.

(4) Hoisting machines.

(a) Raising and lowering of suspended or supported equipment shall be performed only by a hoisting machine.

(b) Each hoisting machine shall be capable of arresting any overspeed descent of the load.

(c) Each hoisting machine shall be powered only by air, electric or hydraulic sources.

(d) Flammable liquids shall not be carried on the working platform.

(e) Each hoisting machine shall be capable of raising or lowering 125 percent of the rated load of the hoist.

(f) Moving parts of a hoisting machine shall be enclosed or guarded in compliance with Part C of chapter 296-24 WAC.

(g) Winding drums, traction drums and sheaves and directional sheaves used in conjunction with hoisting machines shall be compatible with, and sized for, the wire rope used.

(h) Each winding drum shall be provided with a positive means of attaching the wire rope to the drum. The attachment shall be capable of developing at least 4 times the rated load of the hoist.

(i) Each hoisting machine shall be provided with a primary brake and at least one independent secondary brake, each capable of stopping and holding not less than 125 percent of the lifting capacity of the hoist.

(i) The primary brake shall be directly connected to the drive train of the hoisting machine, and shall not be connected through belts, chains, clutches, or set screw type devices. The brake shall automatically set when power to the prime mover is interrupted.

(ii) The secondary brake shall be an automatic emergency type of brake that, if actuated during each stopping cycle, shall not engage before the hoist is stopped by the primary brake.

(iii) When a secondary brake is actuated, it shall stop and hold the platform within a vertical distance of 24 inches (609.6 mm).

(j) Any component of a hoisting machine which requires lubrication for its protection and proper functioning shall be provided with a means for that lubrication to be applied.

(5) Suspended equipment.

(a) General requirements.

(i) Each suspended unit component, except suspension ropes and guardrail systems, shall be capable of supporting, without failure, at least 4 times the maximum intended live load applied or transmitted to that component.

(ii) Each suspended unit component shall be constructed of materials that will withstand anticipated weather conditions.

(iii) Each suspended unit shall be provided with a load rating plate, conspicuously located, stating the unit weight and rated load of the suspended unit.

(iv) When the suspension points on a suspended unit are not at the unit ends, the unit shall be capable of remaining continuously stable under all conditions of use and position of the live load, and shall maintain at least a 1.5 to 1 stability factor against unit upset.

(v) Guide rollers, guide shoes or building face rollers shall be provided, and shall compensate for variations in building dimensions and for minor horizontal out-of-level variations of each suspended unit.

(vi) Each working platform of a suspended unit shall be secured to the building facade by one or more of the following methods, or by an equivalent method:

(A) Continuous engagement to building anchors as provided in WAC 296-24-87011 (2)(a);

(B) Intermittent engagement to building anchors as provided in WAC 296-24-87011 (2)(c)(i);

(C) Button guide engagement as provided in WAC 296-24-87011 (2)(c)(ii);

(D) Angulated roping and building face rollers as provided in WAC 296-24-87011 (2)(c)(iii).

(vii) Each working platform of a suspended unit shall be provided with a guardrail system on all sides which shall meet the following requirements:

(A) The system shall consist of a top guardrail, midrail, and a toeboard;

(B) The top guardrail shall not be less than 36 inches (914 mm) high and shall be able to withstand at least a 200-pound (890 n) force in any downward or outward direction;

(C) The midrail shall be able to withstand at least a 75-pound (333 n) force in any downward or outward direction; and

(D) The areas between the guardrail and toeboard on the ends and outboard side, and the area between the midrail and toeboard on the inboard side, shall be closed with a material that is capable of withstanding a load of 100 pounds (45.4 KG.) applied horizontally over any area of one square foot (.09 m^2). The material shall have all openings small enough

to reject passage of life lines and potential falling objects which may be hazardous to persons below.

(E) Toeboards shall be capable of withstanding, without failure, a force of at least 50 pounds (222 n) applied in any downward or horizontal direction at any point along the toeboard.

(F) Toeboards shall be 4 inches (9 cm) minimum in length from their top edge to the level of the platform floor.

(G) Toeboards shall be securely fastened in place at the outermost edge of the platform and have no more than one-half inch (1.3 cm) clearance above the platform floor.

(H) Toeboards shall be solid or with an opening not over one inch (2.5 cm) in the greatest dimension.

(b) Two and four-point suspended working platforms.

(i) The working platform shall be not less than 24 inches (610 mm) wide and shall be provided with a minimum of a 12 inch (305 mm) wide passage at or past any obstruction on the platform.

(ii) The flooring shall be of a slip-resistant type and shall contain no opening that would allow the passage of life lines, cables and other potential falling objects. If a larger opening is provided, it shall be protected by placing a material under the opening which shall prevent the passage of life lines, cables and potential falling objects.

(iii) The working platform shall be provided with a means of suspension that will restrict the platform's inboard to outboard roll about its longitudinal axis to a maximum of 15 degrees from a horizontal plane when moving the live load from the inboard to the outboard side of the platform.

(iv) Any cable suspended from above the platform shall be provided with a means for storage to prevent accumulation of the cable on the floor of the platform.

(v) All operating controls for the vertical travel of the platform shall be of the continuous-pressure type, and shall be located on the platform.

(vi) Each operating station of every working platform shall be provided with a means of interrupting the power supply to all hoist motors to stop any further powered ascent or descent of the platform.

(vii) The maximum rated speed of the platform shall not exceed 50 feet per minute (0.3 ms) with single speed hoists, nor 75 feet per minute (0.4 ms) with multispeed hoists.

(viii) Provisions shall be made for securing all tools, water tanks, and other accessories to prevent their movement or accumulation on the floor of the platform.

(ix) Portable fire extinguishers conforming to the provisions of WAC 296-24-585 and 296-24-592 shall be provided and securely attached on all working platforms.

(x) Access to and egress from a working platform, except for those that land directly on a safe surface, shall be provided by stairs, ladders, platforms and runways conforming to the provisions of Part J-1 of chapter 296-24 WAC. Access gates shall be self-closing and self-latching.

(xi) Means of access to or egress from a working platform which is 48 inches (1.2 m) or more above a safe surface shall be provided with a guardrail system or ladder handrails that conform to the provisions of Part J-1 of chapter 296-24 WAC.

(xii) The platform shall be provided with a secondary wire rope suspension system if the platform contains overhead structures which restrict the emergency egress of employees. A horizontal lifeline or a direct connection anchorage shall be provided, as part of a fall arrest system which meets the requirements of Appendix C, for each employee on such a platform.

(xiii) A vertical lifeline shall be provided as part of a fall arrest system which meets the requirements of Appendix C, for each employee on a working platform suspended by 2 or more wire ropes, if the failure of one wire rope or suspension attachment will cause the platform to upset. If a secondary wire rope suspension is used, vertical lifelines are not required for the fall arrest system, provided that each employee is attached to a horizontal lifeline anchored to the platform.

(xiv) An emergency electric operating device shall be provided on roof powered platforms near the hoisting machine for use in the event of failure of the normal operating device located on the working platform, or failure of the cable connected to the platform. The emergency electric operating device shall be mounted in a secured compartment, and the compartment shall be labeled with instructions for use. A means for opening the compartment shall be mounted in a break-glass receptacle located near the emergency electric operating device or in an equipment secure and accessible location.

(c) Single point suspended working platforms.

(i) The requirements of (b)(i) through (xi) of this subsection shall also apply to a single point working platform.

(ii) Each single point suspended working platform shall be provided with a secondary wire rope suspension system, which will prevent the working platform from falling should there be a failure of the primary means of support, or if the platform contains overhead structures which restrict the egress of the employees. A horizontal life line or a direct connection anchorage shall be provided, as part of a fall arrest system which meets the requirements of Appendix C, for each employee on the platform.

(d) Ground-rigged working platforms.

(i) Ground-rigged working platforms shall comply with all the requirements of (b)(i) through (xiii) of this subsection.

(ii) After each day's use, the power supply within the building shall be disconnected from a ground-rigged working platform, and the platform shall be either disengaged from its suspension points or secured and stored at grade.

(e) Intermittently stabilized platforms.

(i) The platform shall comply with (b)(i) through (xiii) of this subsection.

(ii) Each stabilizer tie shall be equipped with a "quick connect-quick disconnect" device which cannot be accidently disengaged, for attachment to the building anchor, and shall be resistant to adverse environmental conditions.

(iii) The platform shall be provided with a stopping device that will interrupt the hoist power supply in the event the platform contacts a stabilizer tie during its ascent.

(iv) Building face rollers shall not be placed at the anchor setting if exterior anchors are used on the building face.

(v) Stabilizer ties used on intermittently stabilized platforms shall allow for the specific attachment length needed to effect the predetermined angulation of the suspended wire rope. The specific attachment length shall be maintained at all building anchor locations.

(vi) The platform shall be in continuous contact with the face of the building during ascent and descent.

(vii) The attachment and removal of stabilizer ties shall not require the horizontal movement of the platform.

(viii) The platform-mounted equipment and its suspension wire ropes shall not be physically damaged by the loads from the stabilizer tie or its building anchor. The platform, platform-mounted equipment and wire ropes shall be able to withstand a load that is at least twice the ultimate strength of the stabilizer tie.

Note: See Figure 2 in Appendix B of this section for a description of a typical intermittent stabilization system.

(f) Button-guide stabilized platforms.

(i) The platform shall comply with (b)(i) through (xiii) of this subsection.

(ii) Each guide track on the platform shall engage a minimum of two guide buttons during any vertical travel of the platform following the initial button engagement.

(iii) Each guide track on a platform that is part of a roof rigged system shall be provided with a storage position on the platform.

(iv) Each guide track on the platform shall be sufficiently maneuverable by platform occupants to permit easy engagement of the guide buttons, and easy movement into and out of its storage position on the platform.

(v) Two guide tracks shall be mounted on the platform and shall provide continuous contact with the building face.

(vi) The load carrying components of the button guide stabilization system which transmit the load into the platform shall be capable of supporting the weight of the platform, or provision shall be made in the guide track connectors or platform attachments to prevent the weight of the platform from being transmitted to the platform attachments.

Note: See Figure 3 in Appendix B of this section for a description of a typical button guide stabilization system.

(6) Supported equipment.

(a) Supported equipment shall maintain a vertical position in respect to the face of the building by means other than friction.

(b) Cog wheels or equivalent means shall be incorporated to provide climbing traction between the supported equipment and the building guides. Additional guide wheels or shoes shall be incorporated as may be necessary to ensure that the drive wheels are continuously held in positive engagement with the building guides.

(c) Launch guide mullions indexed to the building guides and retained in alignment with the building guides shall be used to align drive wheels entering the building guides.

(d) Manned platforms used on supported equipment shall comply with the requirements of (b)(i), (ii), and (iv) through (xi) of this subsection, covering suspended equipment.

(7) Suspension wire ropes and rope connections.

(a) Each specific installation shall use suspension wire ropes or combination cable and connections meeting the specification recommended by the manufacturer of the hoisting machine used. Connections shall be capable of developing at least 80 percent of the rated breaking strength of the wire rope.

(b) Each suspension rope shall have a "Design Factor" of at least 10. The "Design Factor" is the ratio of the rated strength of the suspension wire rope to the rated working load, and shall be calculated using the following formula:

$$F = \frac{S(N)}{W}$$

Where:
F = Design factor
S = Manufacturer's rated strength of one suspension rope
N = Number of suspension ropes under load
W = Rated working load on all ropes at any point of travel

(c) Suspension wire rope grade shall be at least improved plow steel or equivalent.

(d) Suspension wire ropes shall be sized to conform with the required design factor, but shall not be less than 5/16 inch (7.94 mm) in diameter.

(e) No more than one reverse bend in 6 wire rope lays shall be permitted.

(f) A corrosion-resistant tag shall be securely attached to one of the wire rope fastenings when a suspension wire rope is to be used at a specific location and will remain in that location. This tag shall bear the following wire rope data:

(i) The diameter (inches and/or mm);

(ii) Construction classification;

(iii) Whether nonpreformed or preformed;

(iv) The grade of material;

(v) The manufacturer's rated strength;

(vi) The manufacturer's name;

(vii) The month and year the ropes were installed; and

(viii) The name of the person or company which installed the ropes.

(g) A new tag shall be installed at each rope renewal.

(h) The original tag shall be stamped with the date of the resocketing, or the original tag shall be retained and a supplemental tag shall be provided when ropes are resocketed. The supplemental tag shall show the date of resocketing and the name of the person or company that resocketed the rope.

(i) Winding drum type hoists shall contain at least 3 wraps of the suspension wire rope on the drum when the suspended unit has reached the lowest possible point of its vertical travel.

(j) Traction drum and sheave type hoists shall be provided with a wire rope of sufficient length to reach the lowest possible point of vertical travel of the suspended unit, and an additional length of the wire rope of at least 4 feet (1.2 m).

(k) The lengthening or repairing of suspension wire ropes is prohibited.

(l) Babbitted fastenings for suspension wire rope are prohibited.

(8) Control circuits, power circuits and their components.

(a) Electrical wiring and equipment shall comply with Part L of chapter 296-24 WAC, except as otherwise required by this section.

(b) Electrical runway conductor systems shall be of a type designed for use in exterior locations, and shall be

located so that they do not come into contact with accumulated snow or water.

(c) Cables shall be protected against damage resulting from overtensioning or from other causes.

(d) Devices shall be included in the control system for the equipment which will provide protection against electrical overloads, three phase reversal and phase failure. The control system shall have a separate method, independent of the direction control circuit, for breaking the power circuit in case of an emergency or malfunction.

(e) Suspended or supported equipment shall have a control system which will require the operator of the equipment to follow predetermined procedures.

(f) The following requirements shall apply to electrical protection devices:

(i) On installations where the carriage does not have a stability factor of at least 4 against overturning, electrical contract(s) shall be provided and so connected that the operating devices for the suspended or supported equipment shall be operative only when the carriage is located and mechanically retained at an established operating point.

(ii) Overload protection shall be provided in the hoisting or suspension system to protect against the equipment operating in the "up" direction with a load in excess of 125 percent of the rated load of the platform; and

(iii) An automatic detector shall be provided for each suspension point that will interrupt power to all hoisting motors for travel in the "down" direction, and apply the primary brakes if any suspension wire rope becomes slack. A continuous-pressure rigging-bypass switch designed for use during rigging is permitted. This switch shall only be used during rigging.

(g) Upper and lower directional switches designed to prevent the travel of suspended units beyond safe upward and downward levels shall be provided.

(h) Emergency stop switches shall be provided on remote controlled, roof-powered manned platforms adjacent to each control station on the platform.

(i) Cables which are in constant tension shall have overload devices which will prevent the tension in the cable from interfering with the load limiting device required in (f)(ii) of this subsection, or with the platform roll limiting device required in subsection (5)(b)(iii) of this section. The setting of these devices shall be coordinated with other overload settings at the time of design of the system, and shall be clearly indicated on or near the device. The device shall interrupt the equipment travel in the "down" direction.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-87013, filed 7/20/94, effective 9/20/94; 90-09-026 (Order 90-01), § 296-24-87013, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87015 Maintenance. (1) General maintenance. All parts of the equipment affecting safe operation shall be maintained in proper working order so that they may perform the functions for which they were intended. The equipment shall be taken out of service when it is not in proper working order.

(2) Cleaning.

(a) Control or power contactors and relays shall be kept clean.

(b) All other parts shall be kept clean if their proper functioning would be affected by the presence of dirt or other contaminants.

(3) Periodic resocketing of wire rope fastenings.

(a) Hoisting ropes utilizing poured socket fastenings shall be resocketed at the nondrum ends at intervals not exceeding 24 months. In resocketing the ropes, a sufficient length shall be cut from the end of the rope to remove damaged or fatigued portions.

(b) Resocketed ropes shall conform to the requirements of WAC 296-24-87013(7).

(c) Limit switches affected by the resocketed ropes shall be reset, if necessary.

(4) Periodic reshackling of suspension wire ropes. The hoisting ropes shall be reshackled at the nondrum ends at intervals not exceeding 24 months. When reshackling the ropes, a sufficient length shall be cut from the end of the rope to remove damaged or fatigued portions.

(5) Roof systems. Roof track systems, tie-downs, or similar equipment shall be maintained in proper working order so that they perform the function for which they were intended.

(6) Building face guiding members. T-rails, indented mullions, or equivalent guides located in the face of a building shall be maintained in proper working order so that they perform the functions for which they were intended. Brackets for cable stabilizers shall similarly be maintained in proper working order.

(7) Inoperative safety devices. No person shall render a required safety device or electrical protective device inoperative, except as necessary for tests, inspections, and maintenance. Immediately upon completion of such tests, inspections, and maintenance, the device shall be restored to its normal operating condition.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-87015, filed 7/20/94, effective 9/20/94; 90-09-026 (Order 90-01), § 296-24-87015, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87017 Operations. (1) Training.

(a) Working platforms shall be operated only by persons who are proficient in the operation, safe use and inspection of the particular working platform to be operated.

(b) All employees who operate working platforms shall be trained in the following:

(i) Recognition of, and preventive measures for, the safety hazards associated with their individual work tasks.

(ii) General recognition and prevention of safety hazards associated with the use of working platforms, including the provisions in the section relating to the particular working platform to be operated.

(iii) Emergency action plan procedures required in WAC 296-24-87011(9).

(iv) Work procedures required in (d) of this subsection.

(v) Personal fall arrest system inspection, care, use and system performance.

(c) Training of employees in the operation and inspection of working platforms shall be done by a competent person.

(d) Written work procedures for the operation, safe use and inspection of working platforms shall be provided for employee training. Pictorial methods of instruction, may be

used, in lieu of written work procedures, if employee communication is improved using this method. The operating manuals supplied by manufacturers for platform system components can serve as the basis for these procedures.

(e) The employer shall certify that employees have been trained in operating and inspecting a working platform by preparing a certification record which includes the identity of the person trained, the signature of the employer or the person who conducted the training and the date that training was completed. The certification record shall be prepared at the completion of the training required in (b) of this subsection, and shall be maintained in a file for the duration of the employee's employment. The certification record shall be kept readily available for review by the director or an authorized representative.

(2) Use.

(a) Working platforms shall not be loaded in excess of the rated load, as stated on the platform load rating plate.

(b) Employees shall be prohibited from working on snow, ice, or other slippery material covering platforms, except for the removal of such materials.

(c) Adequate precautions shall be taken to protect the platform, wire ropes and life lines from damage due to acids or other corrosive substances, in accordance with the recommendations of the corrosive substance producer, supplier, platform manufacturer or other equivalent information sources. Platform members which have been exposed to acids or other corrosive substances shall be washed down with a neutralizing solution, at a frequency recommended by the corrosive substance producer or supplier.

(d) Platform members, wire ropes and life lines shall be protected when using a heat producing process. Wire ropes and life lines which have been contacted by the heat producing process shall be considered to be permanently damaged and shall not be used.

(e) The platform shall not be operated in winds in excess of 25 miles per hour (40.2 km/hr) except to move it from an operating to a storage position. Wind speed shall be determined based on the best available information, which includes on-site anemometer readings and local weather forecasts which predict wind velocities for the area.

(f) On exterior installations, an anemometer shall be mounted on the platform to provide information of on-site wind velocities prior to and during the use of the platform. The anemometer may be a portable (hand held) unit which is temporarily mounted during platform use.

(g) Tools, materials and debris not related to the work in progress shall not be allowed to accumulate on platforms. Stabilizer ties shall be located so as to allow unencumbered passage along the full length of the platform and shall be of such length so as not to become entangled in rollers, hoists or other machinery.

[Statutory Authority: Chapter 49.17 RCW. 90-09-026 (Order 90-01), § 296-24-87017, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87019 Personal fall protection. Employees on working platforms shall be protected by a personal fall arrest system meeting the requirements of Appendix C, Part I, WAC 296-24-87035 of this standard, and as otherwise provided by this standard.

[Statutory Authority: Chapter 49.17 RCW. 90-09-026 (Order 90-01), § 296-24-87019, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87031 Appendix A—Guidelines (advisory). (1) Use of the appendix. Appendix A provides examples of equipment and methods to assist the employer in meeting the requirements of the indicated provision of the standard. Employers may use other equipment or procedures which conform to the requirements of the standard. This appendix neither adds to nor detracts from the mandatory requirements set forth in WAC 296-24-870 through 296-24-87037.

(2) Assurance. WAC 296-24-870(3) requires the building owner to inform the employer in writing that the powered platform installation complies with certain requirements of the standard, since the employer may not have the necessary information to make these determinations. The employer, however, remains responsible for meeting these requirements which have not been set off in WAC 296-24-870 (3)(a).

(3) Design requirements. The design requirements for each installation should be based on the limitations (stresses, deflections, etc.), established by nationally recognized standards as promulgated by the following organizations, or to equivalent standards:

AA—The Aluminum Association, 900 19th Street Northwest, Suite 300, Washington, D.C. 20006

Aluminum Construction Manual
Specifications for Aluminum Structures
Aluminum Standards and Data

AGMA—American Gear Manufacturers Association, 1500 King Street, Suite 201, Alexandria, VA 22314

AISC—American Institute of Steel Construction, 1 East Wacker Drive, Suite 3100, Chicago, IL 60601-2001

ANSI—American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036

ASCE—American Society of Civil Engineers, 345 East 47th Street, New York, NY 10017

ASME—American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017

ASTM—American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187

AWS—American Welding Society, Inc., Box 351040, 550 N.W. LeJeunne Road, Miami, FL 33126

NEMA—National Electric Manufacturers Association, 2101 L Street N.W., Washington, D.C. 20037

(4) Tie-in guides. Indented mullions, T-rails or other equivalent guides are acceptable as tie-in guides in a building face for a continuous stabilization system. Internal guides are embedded in other building members with only the opening exposed (see Figure 1 of Appendix B). External guides, however, are installed external to the other building members and so are fully exposed. The minimum opening for tie-in guides is three-quarters of an inch (19 mm), and the minimum inside dimensions are one-inch (25 mm) deep and two inches (50 mm) wide.

Employers should be aware of the hazards associated with tie-in guides in a continuous stabilization system which was not designed properly. For example, joints in these track systems may become extended or discontinuous due to installation or building settlement. If this alignment problem is not corrected, the system could jam when a guide roller or guide shoe strikes a joint and this would cause a hazardous situation for employees. In another instance, faulty design will result in guide rollers being mounted in a line so they will jam in the track at the slightest misalignment.

(5) Building anchors (intermittent stabilization system). In the selection of the vertical distance between building anchors, certain factors should be given consideration. These factors include building height and architectural design, platform length and weight, wire rope angulation, and the wind velocities in the building area. Another factor to consider is the material of the building face, since this material may be adversely affected by the building rollers.

External or indented type building anchors are acceptable. Receptacles in the building facade used for the indented type should be kept clear of extraneous materials which will hinder their use. During the inspection of the platform installation, evidence of a failure or abuse of the anchors should be brought to the attention of the employer.

(6) Stabilizer tie length. A stabilizer tie should be long enough to provide for the planned angulation of the suspension cables. However, the length of the tie should not be excessive and become a problem by possibly becoming entangled in the building face rollers or parts of the platform machinery.

The attachment length may vary due to material elongation and this should be considered when selecting the material to be used. Consideration should also be given to the use of ties which are easily installed by employees, since this will encourage their use.

(7) Intermittent stabilization system. Intermittent stabilization systems may use different equipment, tie-in devices and methods to restrict the horizontal movement of a powered platform with respect to the face of the building. One acceptable method employs corrosion-resistant building anchors secured in the face of the building in vertical rows every third floor or 50 feet (15.3 m), whichever is less. The anchors are spaced horizontally to allow a stabilization attachment (stabilizer tie) for each of the two platform suspension wire ropes. The stabilizer tie consists of two parts. One part is a quick connect-quick disconnect device which utilizes a corrosion-resistant yoke and retainer spring that is designed to fit over the building anchors. The second part of the stabilizer tie is a lanyard which is used to maintain a fixed distance between the suspension wire rope and the face of the building.

In this method, as the suspended powered platform descends past the elevation of each anchor, the descent is halted and each of the platform occupants secures a stabilizer tie between a suspension wire rope and a building anchor. The procedure is repeated as each elevation of a building anchor is reached during the descent of the powered platform.

As the platform ascends, the procedure is reversed; that is, the stabilizer ties are removed as each elevation of a building anchor is reached. The removal of each stabilizer tie is assured since the platform is provided with stopping devices which will interrupt power to its hoist(s) in the event either stopping device contacts a stabilizer during the ascent of the platform.

Figure 2 of Appendix B illustrates another type of acceptable intermittent stabilization system which utilizes retaining pins as the quick connect-quick disconnect device in the stabilizer tie.

(8) Wire rope inspection. The inspection of the suspension wire rope is important since the rope gradually loses strength during its useful life. The purpose of the inspection is to determine whether the wire rope has sufficient integrity to support a platform with the required design factor.

If there is any doubt concerning the condition of a wire rope or its ability to perform the required work, the rope should be replaced. The cost of wire rope replacement is quite small if compared to the cost in terms of human injuries, equipment down time and replacement.

No listing of critical inspection factors, which serve as a basis for wire rope replacement in the standard, can be a substitute for an experienced inspector of wire rope. The listing serves as a user's guide to the accepted standards by which ropes must be judged.

Rope life can be prolonged if preventive maintenance is performed regularly. Cutting off an appropriate length of rope at the end termination before the core degrades and valley brakes appear minimizes degradation at these sections.

(9) General maintenance. In meeting the general maintenance requirement in WAC 296-24-87015(1), the employer should undertake the prompt replacement of broken, worn and damaged parts, switch contacts, brushes, and short flexible conductors of electrical devices. The components of the electrical service system and traveling cables should be replaced when damaged or significantly abraded. In addition, gears, shafts, bearings, brakes and hoisting drums should be kept in proper alignment.

(10) Training. In meeting the training requirement of WAC 296-24-87017(1), employers should use both on the job training and formal classroom training. The written work procedures used for this training should be obtained from the manufacturer, if possible, or prepared as necessary for the employee's information and use.

Employees who will operate powered platforms with intermittent stabilization systems should receive instruction in the specific ascent and descent procedures involving the assembly and disassembly of the stabilizer ties.

An acceptable training program should also include employee instruction in basic inspection procedures for the purpose of determining the need for repair and replacement of platform equipment. In addition, the program should cover the inspection, care and use of the personal fall protection equipment required in Appendix C, Part I, subsections (5) and (6).

In addition, the training program should also include emergency action plan elements. OSHA brochure #3088 (Rev.) 1985, "How to Prepare for Workplace Emergencies," details the basic steps needed to prepare to handle emergencies in the workplace.

Following the completion of a training program, the employee should be required to demonstrate competency in operating the equipment safely. Supplemental training of the employee should be provided by the employer, as necessary,

if the equipment used or other working conditions should change.

An employee who is required to work with chemical products on a platform should receive training in proper cleaning procedures, and in the hazards, care and handling of these products. In addition, the employee should be supplied with the appropriate personal protective equipment, such as gloves and eye and face protection.

(11) Suspension and securing of powered platforms (equivalency). One acceptable method of demonstrating the equivalency of a method of suspending or securing a powered platform, as required in WAC 296-24-87011 (2)(c), 296-24-87013(3), and (5)(a)(vi), is to provide an engineering analysis by a registered professional engineer. The analysis should demonstrate that the proposed method will provide an equal or greater degree of safety for employees than any one of the methods specified in the standard.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-87031, filed 7/20/94, effective 9/20/94; 90-09-026 (Order 90-01), § 296-24-87031, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87033 Appendix B—Exhibits (advisory). The three drawings in Appendix B illustrate typical platform stabilization systems which are addressed in the standard. The drawings are to be used for reference purposes only, and do not illustrate all the mandatory requirements for each system.

Figure 1. Typical Self-Powered Platform—Continuous External or Indented Mullion Guide System

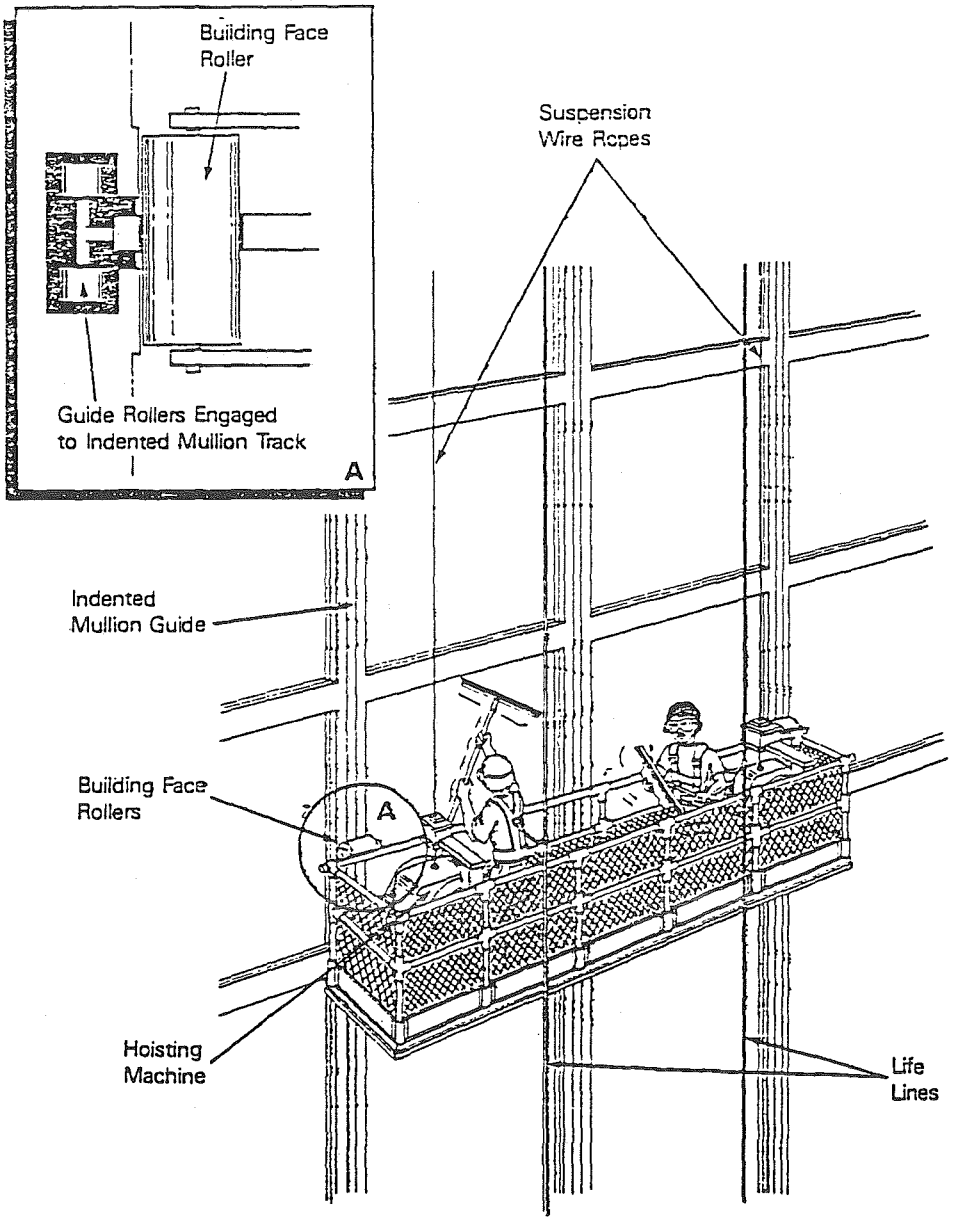


Figure 2. Typical Self-Powered Platform--
Intermittent Tie-In System

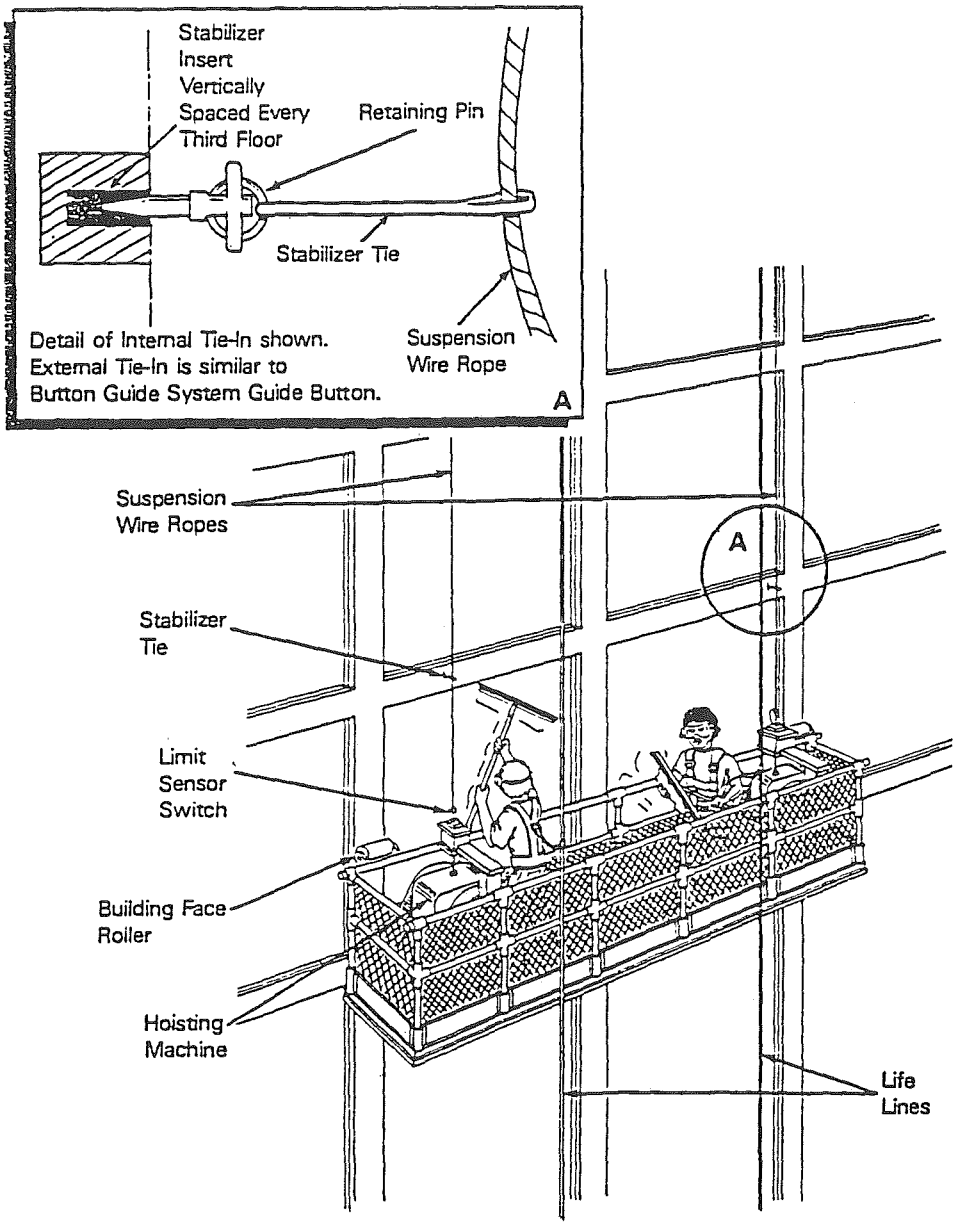
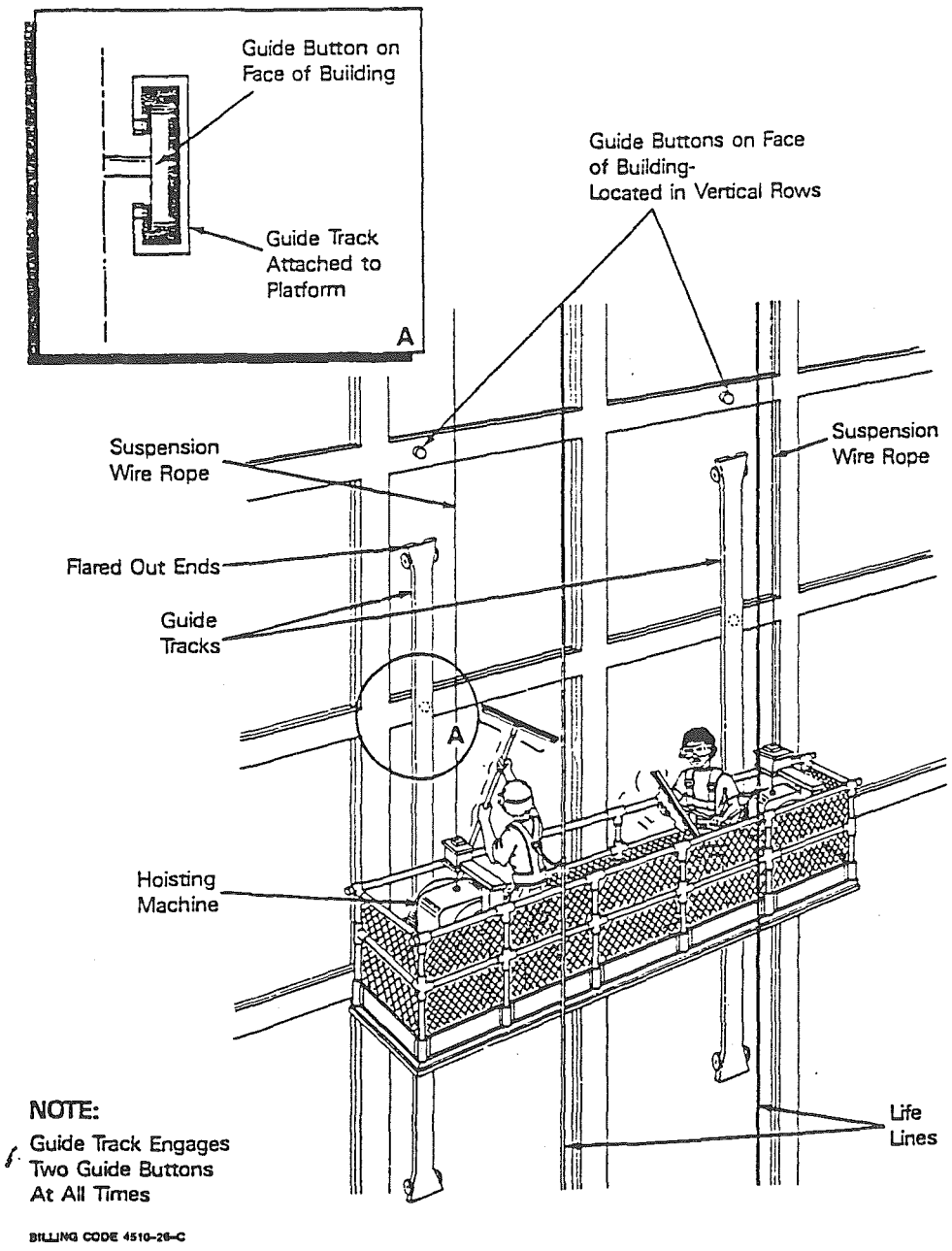


Figure 3. Typical Self-Powered Platform–
Button Guide System



[Statutory Authority: Chapter 49.17 RCW. 90-09-026 (Order 90-01), § 296-24-87033, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87035 Appendix C—Personal fall arrest system (Part I—Mandatory; Parts II and III—Nonmandatory). (1) Use of the appendix.

Part I of Appendix C sets out the mandatory criteria for personal fall arrest systems used by all employees using powered platforms. Part II sets out nonmandatory test procedures which may be used to determine compliance with applicable requirements contained in Part I of this appendix. Part III provides nonmandatory guidelines which are intended to assist employers in complying with these provisions.

PART I

Personal fall arrest systems (mandatory)—(1) Scope and application. This section establishes the application of and performance criteria for personal fall arrest systems which are required for use by all employees using powered platforms under WAC 296-24-87019.

(2) Definitions.

(a) Anchorage. A secure point of attachment for lifelines, lanyards or deceleration devices, and which is

independent of the means of supporting or suspending the employee.

(b) Body harness. A design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

(c) Buckle. Any device for holding the body harness closed around the employee's body.

(d) Competent person. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as in their application and use with related equipment.

(e) Connector. A device which is used to couple (connect) parts of the system together. It may be an independent component of the system (such as a carabiner), or an integral component of part of the system (such as a buckle or dee-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

(f) Deceleration device. Any mechanism, such as a rope grab, ripstitch lanyard, specially woven lanyard, tearing or deforming lanyard, or automatic self retracting-lifeline/lanyard, which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limits the energy imposed on an employee during fall arrest.

(g) Deceleration distance. The additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

(h) Equivalent. Alternative designs, materials or methods which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

(i) Free fall. The act of falling before the personal fall arrest system begins to apply force to arrest the fall.

(j) Free fall distance. The vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, lifeline and lanyard elongation but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

(k) Lanyard. A flexible line of rope, wire rope, or strap which is used to secure the body harness to a deceleration device, lifeline, or anchorage.

(l) Lifeline. A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

(m) Personal fall arrest system. A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

(n) Qualified person. A person with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project, or product.

(o) Rope grab. A deceleration device which travels on a lifeline and automatically frictionally engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/lever locking, or both.

(p) Self-retracting lifeline/lanyard. A deceleration device which contains a drum-wound line which may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

(q) Snap-hook. A connector comprised of a hookshaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snap-hooks are generally one of two types:

(i) The locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection, or

(ii) The nonlocking type with a self-closing keeper which remains closed until pressed open for connection or disconnection.

(r) Tie-off. The act of an employee, wearing personal fall protection equipment, connecting directly or indirectly to an anchorage. It also means the condition of an employee being connected to an anchorage.

(3) Design for system components.

(a) Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.

(b) Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

(c) Lanyards and vertical lifelines which tie-off one employee shall have a minimum breaking strength of 5,000 pounds (22.2 kN).

(d) Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet (0.61 m) or less shall have components capable of sustaining a minimum static tensile load of 3,000 pounds (13.3 kN) applied to the device with the lifeline or lanyard in the fully extended position.

(e) Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet (0.61 m) or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,400 pounds (23.9 kN) applied to the device with the lifeline or lanyard in the fully extended position.

(f) Dee-rings and snap-hooks shall be capable of sustaining a minimum tensile load of 5000 pounds (22.2 N).

(g) Dee-rings and snap-hooks shall be 100 percent proof-tested to a minimum tensile load of 3600 pounds (16 kN) without cracking, breaking, or taking permanent deformation.

(h) Snap-hooks shall be sized to be compatible with the member to which they are connected so as to prevent unintentional disengagement of the snap-hook by depression

of the snap-hook keeper by the connected member, or shall be a locking type snap-hook designed and used to prevent disengagement of the snap-hook by the contact of the snap-hook keeper by the connected member.

(i) Horizontal lifelines, where used, shall be designed, and installed as part of a complete personal fall arrest system, which maintains a safety factor of at least 2, under the supervision of a qualified person.

(j) Anchorages to which personal fall arrest equipment is attached shall be capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two, under the supervision of a qualified person.

(k) Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body harnesses, shall be made from synthetic fibers or wire rope.

(4) System performance criteria.

(a) Personal fall arrest systems shall, when stopping a fall:

(i) Limit maximum arresting force on an employee to 1,800 pounds (8 kN) when used with a body harness;

(ii) Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m); and

(iii) Shall have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1.8 m), or the free fall distance permitted by the system, whichever is less.

(b) (i) When used by employees having a combined person and tool weight of less than 310 pounds (140 kg), personal fall arrest systems which meet the criteria and protocols contained in subsections (2), (3), and (4) in Part II of this appendix shall be considered as complying with the provisions of (a) of this subsection.

(ii) When used by employees having a combined tool and body weight of 310 pounds (140 kg) or more, personal fall arrest systems which meet the criteria and protocols contained in subsections (2), (3), and (4) of Part II may be considered as complying with the provisions of (a) of this subsection provided that the criteria and protocols are modified appropriately to provide proper protection for such heavier weights.

(5) Care and use.

(a) Snap-hooks, unless of a locking type designed and used to prevent disengagement from the following connections, shall not be engaged:

(i) Directly to webbing, rope or wire rope;

(ii) To each other;

(iii) To a dee-ring to which another snap-hook or other connector is attached;

(iv) To a horizontal lifeline; or

(v) To any object which is incompatibly shaped or dimensioned in relation to the snap-hook such that the connected object could depress the snap-hook keeper a sufficient amount to release itself.

(b) Devices used to connect to a horizontal lifeline which may become a vertical lifeline shall be capable of locking in either direction on the lifeline.

(c) Personal fall arrest systems shall be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level.

(d) The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.

(e) When vertical lifelines are used, each employee shall be provided with a separate lifeline.

(f) Personal fall arrest systems or components shall be used only for employee fall protection.

(g) Personal fall arrest systems or components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.

(h) The employer shall provide for prompt rescue of employees in the event of a fall or shall assure the self-rescue capability of employees.

(i) Before using a personal fall arrest system, and after any component or system is changed, employees shall be trained in accordance with the requirements of WAC 296-24-87017(1), in the safe use of the system.

(6) Inspections. Personal fall arrest systems shall be inspected prior to each use for mildew, wear, damage and other deterioration, and defective components shall be removed from service if their strength or function may be adversely affected.

PART II

Test methods for personal fall arrest systems (nonmandatory)

(1) General. Subsections (2), (3), (4) and (5) of this Part II set forth test procedures which may be used to determine compliance with the requirements in subsection (4) of Part I of this appendix.

(2) General conditions for all tests in Part II.

(a) Lifelines, lanyards and deceleration devices should be attached to an anchorage and connected to the body harness in the same manner as they would be when used to protect employees.

(b) The anchorage should be rigid, and should not have a deflection greater than .04 inches (1 mm) when a force of 2,250 pounds (10 kN) is applied.

(c) The frequency response of the load measuring instrumentation should be 120 Hz.

(d) The test weight used in the strength and force tests should be a rigid, metal, cylindrical or torso-shaped object with a girth of 38 inches plus or minus 4 inches (96 cm plus or minus 10 cm).

(e) The lanyard or lifeline used to create the free fall distance should be supplied with the system, or in its absence, the least elastic lanyard or lifeline available to be used with the system.

(f) The test weight for each test should be hoisted to the required level and should be quickly released without having any appreciable motion imparted to it.

(g) The system's performance should be evaluated taking into account the range of environmental conditions for which it is designed to be used.

(h) Following the test, the system need not be capable of further operation.

(3) Strength test.

(a) During the testing of all systems, a test weight of 300 pounds plus or minus 5 pounds (135 kg plus or minus 2.5 kg) should be used. (See subsection (2)(d) of this part.)

(b) The test consists of dropping the test weight once. A new unused system should be used for each test.

(c) For lanyard systems, the lanyard length should be 6 feet plus or minus 2 inches (1.83 m plus or minus 5 cm) as measured from the fixed anchorage to the attachment on the body belt or body harness.

(d) For rope-grab-type deceleration systems, the length of the lifeline above the centerline of the grabbing mechanism to the lifeline's anchorage point should not exceed 2 feet (0.61 m).

(e) For lanyard systems, for systems with deceleration devices which do not automatically limit free fall distance to 2 feet (0.61 m) or less, and for systems with deceleration devices which have a connection distance in excess of one foot (0.3 m) (measured between the centerline of the lifeline and the attachment point to the body harness), the test weight should be rigged to free fall a distance of 7.5 feet (2.3 m) from a point that is 1.5 feet (46 cm) above the anchorage point, to its hanging location (6 feet below the anchorage). The test weight should fall without interference, obstruction, or hitting the floor or ground during the test. In some cases a nonelastic wire lanyard of sufficient length may need to be added to the system (for test purposes) to create the necessary free fall distance.

(f) For deceleration device systems with integral lifelines or lanyards which automatically limit free fall distance to 2 feet (0.61 m) or less, the test weight should be rigged to free fall a distance of 4 feet (1.22 m).

(g) Any weight which detaches from the harness should constitute failure for the strength test.

(4) Force test.

(a) General. The test consists of dropping the respective test weight specified in (b)(i) or (c)(i) of this subsection once. A new, unused system should be used for each test.

(b) For lanyard systems.

(i) A test weight of 220 pounds plus or minus three pounds (100 kg plus or minus 1.6 kg) should be used. (See subsection (2)(d) above.)

(ii) Lanyard length should be 6 feet plus or minus 2 inches (1.83 m plus or minus 5 cm) as measured from the fixed anchorage to the attachment on the body harness.

(iii) The test weight should fall free from the anchorage level to its hanging location (a total of 6 feet (1.83 m) free fall distance) without interference, obstruction, or hitting the floor or ground during the test.

(c) For all other systems.

(i) A test weight of 220 pounds plus or minus 3 pounds (100 kg plus or minus 1.6 kg) should be used. (See subsection (2)(d) above.)

(ii) The free fall distance to be used in the test should be the maximum fall distance physically permitted by the system during normal use conditions, up to a maximum free fall distance for the test weight of 6 feet (1.83 m), except as follows:

(A) For deceleration systems which have a connection link or lanyard, the test weight should free fall a distance equal to the connection distance (measured between the centerline of the lifeline and the attachment point to the body harness).

(B) For deceleration device systems with integral lifelines or lanyards which automatically limit free fall distance to 2 feet (0.61 m) or less, the test weight should free fall a distance equal to that permitted by the system in normal use. (For example, to test a system with a self-retracting lifeline or lanyard, the test weight should be supported and the system allowed to retract the lifeline or lanyard as it would in normal use. The test weight would then be released and the force and deceleration distance measured).

(d) A system fails the force test if the recorded maximum arresting force exceeds 2,520 pounds (11.2 kN) when using a body harness.

(e) The maximum elongation and deceleration distance should be recorded during the force test.

(5) Deceleration device tests.

(a) General. The device should be evaluated or tested under the environmental conditions, (such as rain, ice, grease, dirt, type of lifeline, etc.), for which the device is designed.

(b) Rope-grab-type deceleration devices.

(i) Devices should be moved on a lifeline 1,000 times over the same length of line a distance of not less than one foot (30.5 cm), and the mechanism should lock each time.

(ii) Unless the device is permanently marked to indicate the type(s) of lifeline which must be used, several types (different diameters and different materials), of lifelines should be used to test the device.

(c) Other self-activating-type deceleration devices. The locking mechanisms of other self-activating-type deceleration devices designed for more than one arrest should lock each of 1,000 times as they would in normal service.

PART III

Additional nonmandatory guidelines for personal fall arrest systems. The following information constitutes additional guidelines for use in complying with requirements for a personal fall arrest system.

(1) Selection and use considerations. The kind of personal fall arrest system selected should match the particular work situation, and any possible free fall distance should be kept to a minimum. Consideration should be given to the particular work environment. For example, the presence of acids, dirt, moisture, oil, grease, etc., and their effect on the system, should be evaluated. Hot or cold environments may also have an adverse affect on the system. Wire rope should not be used where an electrical hazard is anticipated. As required by the standard, the employer must plan to have means available to promptly rescue an employee should a fall occur, since the suspended employee may not be able to reach a work level independently.

Where lanyards, connectors, and lifelines are subject to damage by work operations such as welding, chemical cleaning, and sandblasting, the component should be protected, or other securing systems should be used. The employer should fully evaluate the work conditions and environment (including seasonal weather changes) before selecting the appropriate personal fall protection system. Once in use, the system's effectiveness should be monitored. In some cases, a program for cleaning and maintenance of the system may be necessary.

(2) Testing considerations. Before purchasing or putting into use a personal fall arrest system, an employer should obtain from the supplier information about the system based on its performance during testing so that the employer can

know if the system meets this standard. Testing should be done using recognized test methods. Part II of this Appendix C contains test methods recognized for evaluating the performance of fall arrest systems. Not all systems may need to be individually tested; the performance of some systems may be based on data and calculations derived from testing of similar systems, provided that enough information is available to demonstrate similarity of function and design.

(3) Component compatibility considerations. Ideally, a personal fall arrest system is designed, tested, and supplied as a complete system. However, it is common practice for lanyards, connectors, lifelines, deceleration devices, and body harnesses to be interchanged since some components wear out before others. The employer and employee should realize that not all components are interchangeable. For instance, a lanyard should not be connected between a body harness and a deceleration device of the self-retracting type since this can result in additional free fall for which the system was not designed. Any substitution or change to a personal fall arrest system should be fully evaluated or tested by a competent person to determine that it meets the standard, before the modified system is put in use.

(4) Employee training considerations. Thorough employee training in the selection and use of personal fall arrest systems is imperative. As stated in the standard, before the equipment is used, employees must be trained in the safe use of the system. This should include the following: Application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and total fall distance to prevent striking a lower level; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death. Employers and employees should become familiar with the material in this Appendix, as well as manufacturer's recommendations, before a system is used. Of uppermost importance is the reduction in strength caused by certain tie-offs (such as using knots, tying around sharp edges, etc.) and maximum permitted free fall distance. Also, to be stressed are the importance of inspections prior to use, the limitations of the equipment, and unique conditions at the worksite which may be important in determining the type of system to use.

(5) Instruction considerations. Employers should obtain comprehensive instructions from the supplier as to the system's proper use and application, including, where applicable:

(a) The force measured during the sample force test;

(b) The maximum elongation measured for lanyards during the force test;

(c) The deceleration distance measured for deceleration devices during the force test;

(d) Caution statements on critical use limitations;

(e) Application limits;

(f) Proper hook-up, anchoring and tie-off techniques, including the proper dee-ring or other attachment point to use on the body harness for fall arrest;

(g) Proper climbing techniques;

(h) Methods of inspection, use, cleaning, and storage; and

(i) Specific lifelines which may be used. This information should be provided to employees during training.

(6) Inspection considerations. As stated in WAC 296-24-87035(6), personal fall arrest systems must be regularly inspected. Any component with any significant defect, such as cuts, tears, abrasions, mold, or undue stretching; alterations or additions which might affect its efficiency; damage due to deterioration; contact with fire, acids, or other corrosives; distorted hooks or faulty hook springs; tongues unfitted to the shoulder of buckles; loose or damaged mountings; nonfunctioning parts; or wearing or internal deterioration in the ropes must be withdrawn from service immediately, and should be tagged or marked as unusable, or destroyed.

(7) Rescue considerations. As required by WAC 296-24-87035 (5)(h) when personal fall arrest systems are used, the employer must assure that employees can be promptly rescued or can rescue themselves should a fall occur. The availability of rescue personnel, ladders or other rescue equipment should be evaluated. In some situations, equipment which allows employees to rescue themselves after the fall has been arrested may be desirable, such as devices which have descent capability.

(8) Tie-off considerations.

(a) One of the most important aspects of personal fall protection systems is fully planning the system before it is put into use. Probably the most overlooked component is planning for suitable anchorage points. Such planning should ideally be done before the structure or building is constructed so that anchorage points can be incorporated during construction for use later for window cleaning or other building maintenance. If properly planned, these anchorage points may be used during construction, as well as afterwards.

(b) Employers and employees should at all times be aware that the strength of a personal fall arrest system is based on its being attached to an anchoring system which does not significantly reduce the strength of the system (such as a properly dimensioned eye-bolt/snap-hook anchorage). Therefore, if a means of attachment is used that will reduce the strength of the system, that component should be replaced by a stronger one, but one that will also maintain the appropriate maximum arrest force characteristics.

(c) Tie-off using a knot in a rope lanyard or lifeline (at any location) can reduce the lifeline or lanyard strength by 50 percent or more. Therefore, a stronger lanyard or lifeline should be used to compensate for the weakening effect of the knot, or the lanyard length should be reduced (or the tie-off location raised) to minimize free fall distance, or the lanyard or lifeline should be replaced by one which has an appropriately incorporated connector to eliminate the need for a knot.

(d) Tie-off of a rope lanyard or lifeline around an "H" or "I" beam or similar support can reduce its strength as much as 70 percent due to the cutting action of the beam edges. Therefore, use should be made of a webbing lanyard or wire core lifeline around the beam; or the lanyard or lifeline should be protected from the edge; or free fall distance should be greatly minimized.

(e) Tie-off where the line passes over or around rough or sharp surfaces reduces strength drastically. Such a tie-off should be avoided or an alternative tie-off rigging should be used. Such alternatives may include use of a snap-hook/dee-ring connection, wire rope tie-off, an effective padding of the

surfaces, or an abrasion-resistance strap around or over the problem surface.

(f) Horizontal lifelines may, depending on their geometry and angle of sag, be subjected to greater loads than the impact load imposed by an attached component. When the angle of horizontal lifeline sag is less than 30 degrees, the impact force imparted to the lifeline by an attached lanyard is greatly amplified. For example, with a sag angle of 15 degrees, the force amplification is about 2:1 and at 5 degrees sag, it is about 6:1. Depending on the angle of sag, and the line's elasticity, the strength of the horizontal lifeline and the anchorages to which it is attached should be increased a number of times over that of the lanyard. Extreme care should be taken in considering a horizontal lifeline for multiple tie-offs. The reason for this is that in multiple tie-offs to a horizontal lifeline, if one employee falls, the movement of the falling employee and the horizontal lifeline during arrest of the fall may cause other employees to also fall. Horizontal lifeline and anchorage strength should be increased for each additional employee to be tied-off. For these and other reasons, the design of systems using horizontal lifelines must only be done by qualified persons. Testing of installed lifelines and anchors prior to use is recommended.

(g) The strength of an eye-bolt is rated along the axis of the bolt and its strength is greatly reduced if the force is applied at an angle to this axis (in the direction of shear). Also, care should be exercised in selecting the proper diameter of the eye to avoid accidental disengagement of snap-hooks not designed to be compatible for the connection.

(h) Due to the significant reduction in the strength of the lifeline/lanyard (in some cases, as much as a 70 percent reduction), the sliding hitch knot should not be used for lifeline/lanyard connections except in emergency situations where no other available system is practical. The "one-and-one" sliding hitch knot should never be used because it is unreliable in stopping a fall. The "two-and-two," or "three-and-three" knot (preferable), may be used in emergency situations; however, care should be taken to limit free fall distance to a minimum because of reduced lifeline/lanyard strength.

(9) Vertical lifeline considerations. As required by the standard, each employee must have a separate lifeline when the lifeline is vertical. The reason for this is that in multiple tie-offs to a single lifeline, if one employee falls, the movement of the lifeline during the arrest of the fall may pull other employees' lanyards, causing them to fall as well.

(10) Snap-hook considerations.

(a) Although not required by this standard for all connections, locking snap-hooks designed for connection to suitable objects (of sufficient strength) are highly recommended in lieu of the nonlocking type. Locking snap-hooks incorporate a positive locking mechanism in addition to the spring loaded keeper, which will not allow the keeper to open under moderate pressure without someone first releasing the mechanism. Such a feature, properly designed, effectively prevents roll-out from occurring.

(b) As required by the standard WAC 296-24-87035 (5)(a) the following connections must be avoided (unless properly designed locking snap-hooks are used) because they are conditions which can result in roll-out when a nonlocking snap-hook is used:

- Direct connection of a snap-hook to a horizontal lifeline.
- Two (or more) snap-hooks connected to one dee-ring.
- Two snap-hooks connected to each other.
- A snap-hook connected back on its integral lanyard.
- A snap-hook connected to a webbing loop or webbing lanyard.
- Improper dimensions of the dee-ring, rebar, or other connection point in relation to the snap-hook dimensions which would allow the snap-hook keeper to be depressed by a turning motion of the snap-hook.

(11) Free fall considerations. The employer and employee should at all times be aware that a system's maximum arresting force is evaluated under normal use conditions established by the manufacturer, and in no case using a free fall distance in excess of 6 feet (1.8 m). A few extra feet of free fall can significantly increase the arresting force on the employee, possibly to the point of causing injury. Because of this, the free fall distance should be kept at a minimum, and, as required by the standard, in no case greater than 6 feet (1.8 m). To help assure this, the tie-off attachment point to the lifeline or anchor should be located at or above the connection point of the fall arrest equipment to harness. (Since otherwise additional free fall distance is added to the length of the connecting means (i.e. lanyard).) Attaching to the working surface will often result in a free fall greater than 6 feet (1.8 m). For instance, if a 6 foot (1.8 m) lanyard is used, the total free fall distance will be the distance from the working level to the body harness attachment point plus the 6 feet (1.8 m) of lanyard length. Another important consideration is that the arresting force which the fall system must withstand also goes up with greater distances of free fall, possibly exceeding the strength of the system.

(12) Elongation and deceleration distance considerations. Other factors involved in a proper tie-off are elongation and deceleration distance. During the arresting of a fall, a lanyard will experience a length of stretching or elongation, whereas activation of a deceleration device will result in a certain stopping distance. These distances should be available with the lanyard or device's instructions and must be added to the free fall distance to arrive at the total fall distance before an employee is fully stopped. The additional stopping distance may be very significant if the lanyard or deceleration device is attached near or at the end of a long lifeline, which may itself add considerable distance due to its own elongation. As required by the standard, sufficient distance to allow for all of these factors must also be maintained between the employee and obstructions below, to prevent an injury due to impact before the system fully arrests the fall. In addition, a minimum of 12 feet (3.7 m) of lifeline should be allowed below the securing point of a rope grab type deceleration device, and the end terminated to prevent the device from sliding off the lifeline. Alternatively, the lifeline should extend to the ground or the next working level below. These measures are suggested to prevent the worker from inadvertently moving past the end of the lifeline and having the rope grab become disengaged from the lifeline.

(13) Obstruction considerations. The location of the tie-off should also consider the hazard of obstructions in the potential fall path of the employee. Tie-offs which minimize the possibilities of exaggerated swinging should be considered.

(14) Other considerations. Because of the design of some personal fall arrest systems, additional considerations may be required for proper tie-off. For example, heavy deceleration devices of the self-retracting type should be secured overhead in order to avoid the weight of the device having to be supported by the employee. Also, if self-retracting equipment is connected to a horizontal lifeline, the sag in the lifeline should be minimized to prevent the device from sliding down the lifeline to a position which creates a swing hazard during fall arrest. In all cases, manufacturer's instructions should be followed.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-87035, filed 1/10/91, effective 2/12/91; 90-09-026 (Order 90-01), § 296-24-87035, filed 4/10/90, effective 5/25/90.]

WAC 296-24-87037 Appendix D—Existing installations (mandatory). (1) Use of the appendix.

Appendix D sets out the mandatory building and equipment requirements for applicable permanent installations completed after August 27, 1971, and no later than July 23, 1990 which are exempt from WAC 296-24-870 through 296-24-87013.

Note: All existing installations subject to this Appendix shall also comply with WAC 296-24-87009, 296-24-87015, 296-24-87017, 296-24-87019, and Appendix C.

(2) Definitions applicable to this appendix.

(a) Angulated roping. A system of platform suspension in which the upper wire rope sheaves or suspension points are closer to the plane of the building face than the corresponding attachment points on the platform, thus causing the platform to press against the face of the building during its vertical travel.

(b) ANSI. American National Standards Institute.

(c) Babbitted fastenings. The method of providing wire rope attachments in which the ends of the wire strands are bent back and are held in a tapered socket by means of poured molten babbitt metal.

(d) Brake—disc type. A brake in which the holding effect is obtained by frictional resistance between one or more faces of discs keyed to the rotating member to be held and fixed discs keyed to the stationary or housing member (pressure between the discs being applied axially).

(e) Brake—self-energizing band type. An essentially undirectional brake in which the holding effect is obtained by the snubbing action of a flexible band wrapped about a cylindrical wheel or drum affixed to the rotating member to be held, the connections and linkages being so arranged that the motion of the brake wheel or drum will act to increase the tension or holding force of the band.

(f) Brake—shoe type. A brake in which the holding effect is obtained by applying the direct pressure of two or more segmental friction elements held to a stationary member against a cylindrical wheel or drum affixed to the rotating member to be held.

(g) Building face rollers. A specialized form of guide roller designed to contact a portion of the outer face or wall structure of the building, and to assist in stabilizing the operators' platform during vertical travel.

(h) Continuous pressure. Operation by means of buttons or switches, any one of which may be used to control the movement of the working platform or roof car, only as long as the button or switch is manually maintained in the actuating position.

(i) Control. A system governing starting, stopping, direction, acceleration, speed, and retardation of moving members.

(j) Controller. A device or group of devices, usually contained in a single enclosure, which serves to control in some predetermined manner the apparatus to which it is connected.

(k) Electrical ground. A conducting connection between an electrical circuit or equipment and the earth, or some conducting body which serves in place of the earth.

(l) Guide roller. A rotating, bearing-mounted, generally cylindrical member, operating separately or as part of a guide shoe assembly, attached to the platform, and providing rolling contact with building guideways, or other building contact members.

(m) Guide shoe. An assembly of rollers, slide members, or the equivalent, attached as a unit to the operators' platform, and designed to engage with the building members provided for the vertical guidance of the operators' platform.

(n) Interlock. A device actuated by the operation of some other device with which it is directly associated, to govern succeeding operations of the same or allied devices.

(o) Operating device. A pushbutton, lever, or other manual device used to actuate a control.

(p) Powered platform. Equipment to provide access to the exterior of a building for maintenance, consisting of a suspended power-operated working platform, a roof car, or other suspension means, and the requisite operating and control devices.

(q) Rated load. The combined weight of employees, tools, equipment, and other material which the working platform is designed and installed to lift.

(r) Relay, direction. An electrically energized contactor responsive to an initiating control circuit, which in turn causes a moving member to travel in a particular direction.

(s) Relay, potential for vertical travel. An electrically energized contactor responsive to initiating control circuit, which in turn controls the operation of a moving member in both directions. This relay usually operates in conjunction with direction relays, as covered under the definition, "relay, direction."

(t) Roof car. A structure for the suspension of a working platform, providing for its horizontal movement to working positions.

(u) Roof-powered platform. A powered platform having the raising and lowering mechanism located on a roof car.

(v) Self-powered platform. A powered platform having the raising and lowering mechanism located on the working platform.

(w) Traveling cable. A cable made up of electrical or communication conductors or both, and providing electrical connection between the working platform and the roof car or other fixed point.

(x) Weatherproof. Equipment so constructed or protected that exposure to the weather will not interfere with its proper operation.

(y) Working platform. The suspended structure arranged for vertical travel which provides access to the exterior of the building or structure.

(z) Yield point. The stress at which the material exhibits a permanent set of 0.2 percent.

(aa) Zinced fastenings. The method of providing wire rope attachments in which the splayed or fanned wire ends are held in a tapered socket by means of poured molten zinc.

(3) General requirements.

(a) Design requirements. All powered platform installations for exterior building maintenance completed as of August 27, 1971, but no later than January 25, 1990, shall meet all of the design, construction and installation requirements of Part II and III of the "American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance ANSI A120.1-1970" and of this appendix. References shall be made to appropriate parts of ANSI A120.1-1970 for detail specifications for equipment and special installations.

(b) Limitation. The requirements of this appendix apply only to electric-powered platforms. It is not the intent of this appendix to prohibit the use of other types of power. Installation of powered platforms using other types of power is permitted, provided such platforms have adequate protective devices for the type of power used, and otherwise provide for reasonable safety of life and limb to users of equipment and to others who may be exposed.

(c) Types of powered platforms.

(i) For the purpose of applying this appendix, powered platforms are divided into two basic types, Type F and Type T.

(ii) Powered platforms designated as Type F shall meet all the requirements in Part II of ANSI A120.1-1970, American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance. A basic requirement of Type F equipment is that the work platform is suspended by at least 4 wire ropes and designed so that failure of any one wire rope will not substantially alter the normal position of the working platform. Another basic requirement of Type F equipment is that only one layer of hoisting rope is permitted on winding drums. Type F powered platforms may be either roof-powered or self-powered.

(iii) Powered platforms designated as Type T shall meet all the requirements in Part III of ANSI A120.1-1970 American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance, except for section 28, Safety Belts and Life Lines. A basic requirement of Type T equipment is that the working platform is suspended by at least 2 wire ropes. Failure of one wire rope would not permit the working platform to fall to the ground, but would upset its normal position. Type T powered platforms may be either roof-powered or self-powered.

(iv) The requirements of this section apply to powered platforms with winding drum type hoisting machines. It is not the intent of this section to prohibit powered platforms using other types of hoisting machines such as, but not limited to, traction drum hoisting machines, air powered machines, hydraulic powered machines, and internal combustion machines. Installation of powered platforms with other types of hoisting machines is permitted, provided adequate protective devices are used, and provided reasonable safety of life and limb to users of the equipment and to others who may be exposed is assured.

(v) Both Type F and Type T powered platforms shall comply with the requirements of Appendix C of this standard.

(4) Type F powered platforms.

(a) Roof car, general.

(i) A roof car shall be provided whenever it is necessary to move the working platform horizontally to working or storage positions.

(ii) The maximum rated speed at which a power traversed roof car may be moved in a horizontal direction shall be 50 feet per minute.

(b) Movement and positioning of roof car.

(i) Provision shall be made to protect against having the roof car leave the roof or enter roof areas not designed for travel.

(ii) The horizontal motion of the roof cars shall be positively controlled so as to insure proper movement and positioning of the roof car.

(iii) Roof car positioning devices shall be provided to insure that the working platform is placed and retained in proper position for vertical travel and during storage.

(iv) Mechanical stops shall be provided to prevent the traversing of the roof car beyond its normal limits of travel. Such stops shall be capable of withstanding a force equal to 100 percent of the inertial effect of the roof car in motion with traversing power applied.

(v) The operating device of a power-operated roof car for traversing shall be located on the roof car, the working platform, or both, and shall be of the continuous pressure weather-proof electric type. If more than one operating device is provided, they shall be so arranged that traversing is possible only from one operating device at a time.

(vi) The operating device shall be so connected that it is not operable until:

(A) The working platform is located at its uppermost position of travel and is not in contact with the building face or fixed vertical guides in the face of the building; and

(B) All protective devices and interlocks are in a position for traversing.

(c) Roof car stability. Roof car stability shall be determined by either items (i) or (ii), whichever is greater.

(i) The roof car shall be continuously stable, considering overturning moment as determined by 125 percent rated load, plus maximum dead load and the prescribed wind loading.

(ii) The roof car and its anchorages shall be capable of resisting accidental over-tensioning of the wire ropes suspending the working platform and this calculated value shall include the effect of one and one-half times the value. For this calculation, the simultaneous effect of one-half wind load shall be included, and the design stresses shall not exceed those referred to in subsection (3)(a) of this Appendix.

(iii) If the load on the motors is at any time in excess of three times that required for lifting the working platform with its rated load the motor shall stall.

(d) Access to the roof car. Safe access to the roof car and from the roof car to the working platform shall be provided. If the access to the roof car at any point of its travel is not over the roof area or where otherwise necessary for safety, self-closing, self-locking gates shall be provided. Applicable provisions WAC 296-24-735 through 296-24-810 shall apply.

(e) Means for maintenance, repair, and storage. Means shall be provided to run the roof car away from the roof perimeter, where necessary, and to provide a safe area for maintenance, repairs, and storage. Provisions shall be made to secure the machine in the stored position. For stored machines subject to wind forces, see special design and anchorage requirements for "wind forces" in Part II, section 10.5.1.1 of ANSI A120.1-1970 American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance.

(f) General requirements for working platforms. The working platform shall be of girder or truss construction and shall be adequate to support its rated load under any position of loading, and comply with the provisions set forth in section 10 of ANSI A120.1-1970, American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance.

(g) Load rating plate. Each working platform shall bear a manufacturer's load rating plate, conspicuously posted; stating the maximum permissible rated load. Load rating plates shall be made of noncorrosive material and shall have letters and figures stamped, etched, or cast on the surface. The minimum height of the letters and figures shall be one-fourth inch.

(h) Minimum size. The working platform shall have a minimum net width of 24 inches.

(i) Guardrails. Working platforms shall be furnished with permanent guard rails not less than 36 inches high, and not more than 42 inches high at the front (building side). At the rear, and on the sides, the rail shall not be less than 42 inches high. An intermediate guardrail shall be provided around the entire platform between the top guardrail and the toeboard. The top rail shall withstand a minimum of 200 pounds pressure.

(j) Toeboards. A four-inch toeboard shall be provided along all sides of the working platform.

(k) Open spaces between guardrails and toeboards. The spaces between the intermediate guardrail and platform toeboard on the building side of the working platform, and between the top guardrail and the toeboard on other sides of the platform, shall be filled with metallic mesh or similar material that will reject a ball one inch in diameter. The installed mesh shall be capable of withstanding a load of 100 pounds applied horizontally over any area of 144 square inches. If the space between the platform and the building face does not exceed eight inches, and the platform is restrained by guides, the mesh may be omitted on the front side.

(l) Flooring. The platform flooring shall be of the nonskid type, and if of open construction, shall reject a 9/16-inch diameter ball, or be provided with a screen below the floor to reject a 9/16-inch diameter ball.

(m) Access gates. Where access gates are provided, they shall be self-closing and self-locking.

(n) Operating device for vertical movement of the working platform.

(i) The normal operating device for the working platform shall be located on the working platform and shall be of the continuous pressure weatherproof electric type.

(ii) The operating device shall be operable only when all electrical protective devices and interlocks on the working platform are in position for normal service and, the roof car, if provided, is at an established operating point.

(o) Emergency electric operative device.

(i) In addition, on roof-powered platforms, an emergency electric operating device shall be provided near the hoisting machine for use in the event of failure of the normal operating device for the working platform, or failure of the traveling cable system. The emergency operating device shall be mounted in a locked compartment and shall have a legend mounted thereon reading: "For Emergency Operation Only. Establish Communication With Personnel on Working Platform Before Use."

(ii) A key for unlocking the compartment housing the emergency operating device shall be mounted in a break-glass receptacle located near the emergency operating device.

(p) Manual cranking for emergency operation. Emergency operation of the main drive machine may be provided to allow manual cranking. This provision for manual operation shall be designed so that not more than two persons will be required to perform this operation. The access to this provision shall include a means to automatically make the machine inoperative electrically while under the emergency manual operation. The design shall be such that the emergency brake is operative at or below governor tripping speed during manual operation.

(q) Arrangement and guarding of hoisting equipment.

(i) Hoisting equipment shall consist of a power-driven drum or drum contained in the roof car (roof-powered platforms) or contained on the working platform (self-powered platform).

(ii) The hoisting equipment shall be power-operated in both up and down directions.

(iii) Guard or other protective devices shall be installed wherever rotating shafts or other mechanisms or gears may expose personnel to a hazard.

(iv) Friction devices or clutches shall not be used for connecting the main driving mechanism to the drum or drums. Belt or chain-driven machines are prohibited.

(r) Hoisting motors.

(i) Hoisting motors shall be electric and of weather-proof construction.

(ii) Hoisting motors shall be in conformance with applicable provisions of subdivision (v) of this subsection, Electric Wiring and Equipment.

(iii) Hoisting motors shall be directly connected to the hoisting machinery. Motor couplings, if used, shall be of steel construction.

(s) Brakes. The hoisting machine(s) shall have two independent braking means, each designed to stop and hold the working platform with 125 percent of rated load.

(t) Hoisting ropes and rope connections.

(i) Working platforms shall be suspended by wire ropes of either 6 x 19 or 6 x 37 classification, preformed or nonpreformed.

(ii) (Reserved)

(iii) The minimum factor of safety shall be 10, and shall be calculated by the following formula:

F = SxN/W
Where
S = Manufacturer's rated breaking strength of one rope.
N = Number of ropes under load.
W = Maximum static load on all ropes with the platform and its rated load at any point of its travel.

(iv) Hoisting ropes shall be sized to conform with the required factor of safety, but in no case shall the size be less than 5/16 inch diameter.

(v) Winding drums shall have at least three turns of rope remaining when the platform has landed at the lowest possible point of its travel.

(vi) The lengthening or repairing of wire rope by the joining of two or more lengths is prohibited.

(vii) The nondrum ends of the hoisting ropes shall be provided with individual shackle rods which will permit individual adjustment of rope lengths, if required.

(viii) More than two reverse bends in each rope is prohibited.

(u) Rope tag data. A metal data tag shall be securely attached to one of the wire rope fastenings. This data tag shall bear the following wire rope data:

(i) The diameter in inches.

(ii) Construction classification.

(iii) Whether nonpreformed or preformed.

(iv) The grade of material used.

(v) The manufacturer's rated breaking strength.

(vi) Name of the manufacturer of the rope.

(vii) The month and year the ropes were installed.

(v) Electrical wiring and equipment.

(i) All electrical equipment and wiring shall conform to the requirements of the National Electrical Code, NFPA 70-1987; ANSI C1-1987, except as modified by ANSI A120.1-1970 "American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance." For detail design specifications for electrical equipment, see Part 2, ANSI A120.1-1970.

(ii) All motors and operation and control equipment shall be supplied from a single power source.

(iii) The power supply for the powered platform shall be an independent circuit supplied through a fused disconnect switch.

(iv) Electrical conductor parts of the power supply system shall be protected against accidental contact.

(v) Electrical grounding shall be provided.

(A) Provisions for electrical grounding shall be included with the power-supply system.

(B) Controller cabinets, motor frames, hoisting machines, the working platform, roof car and roof car track system, and noncurrent carrying parts of electrical equipment, where provided, shall be grounded.

(C) The controller, where used, shall be so designed and installed that a single ground or short circuit will not prevent both the normal and final stopping device from stopping the working platform.

(D) Means shall be provided on the roof car and working platform for grounding portable electric tools.

(E) The working platform shall be grounded through a grounding connection in a traveling cable. Electrically powered tools utilized on the working platform shall be grounded.

(vi) Electrical receptacles located on the roof or other exterior location shall be of a weatherproof type and shall be located so as not to be subject to contact with water or accumulated snow. The receptacles shall be grounded and the electric cable shall include a grounding conductor. The receptacle and plug shall be a type designed to avoid hazard to persons inserting or withdrawing the plug. Provision shall be made to prevent application of cable strain directly to the plug and receptacle.

(vii) Electric runway conductor systems shall be of the type designed for use in exterior locations and shall be located so as not to be subject to contact with water or accumulated snow. The conductors, collectors, and disconnecting means shall conform to the same requirements as those for cranes and hoists in Article 610 of the National Electrical Code, NFPA 70-1987; ANSI C1-1987. A grounded conductor shall parallel the power conductors and be so connected that it cannot be opened by the disconnecting means. The system shall be designed to avoid hazard to persons in the area.

(viii) Electrical protective devices and interlocks of the weatherproof type shall be provided.

(ix) Where the installation includes a roof car, electric contact(s) shall be provided and so connected that the operating devices for the working platform shall be operative only when the roof car is located and mechanically retained at an established operating point.

(x) Where the powered platform includes a power-operated roof car, the operating device for the roof car shall be inoperative when the roof car is mechanically retained at an established operating point.

(xi) An electric contact shall be provided and so connected that it will cause the down direction relay for vertical travel to open if the tension in the traveling cable exceeds safe limits.

(xii) An automatic overload device shall be provided to cut off the electrical power to the circuit in all hoisting motors for travel in the up direction, should the load applied to the hoisting ropes at either end of the working platform exceed 125 percent of its normal tension with rated load, as shown on the manufacturer's data plate on the working platform.

(xiii) An automatic device shall be provided for each hoisting rope which will cut off the electrical power to the hoisting motor or motors in the down direction and apply the brakes if any hoisting rope becomes slack.

(xiv) Upper and lower directional limit devices shall be provided to prevent the travel of the working platform beyond the normal upper and lower limits of travel.

(xv) Operation of a directional limit device shall prevent further motion in the appropriate direction, if the normal limit of travel has been reached.

(xvi) Directional limit devices, if driven from the hoisting machine by chains, tapes, or cables, shall incorporate a device to disconnect the electric power from the hoisting machine and apply both the primary and secondary brakes in the event of failure of the driving means.

(xvii) Final terminal stopping devices of the working platform:

(A) Final terminal stopping devices for the working platform shall be provided as a secondary means of preventing the working platform from over-traveling at the terminals.

(B) The device shall be set to function as close to each terminal landing as practical, but in such a way that under normal operating conditions it will not function when the working platform is stopped by the normal terminal stopping device.

(C) Operation of the final terminal stopping device shall open the potential relay for vertical travel, thereby disconnecting the electric power from the hoisting machine, and applying both the primary and secondary brakes.

(D) The final terminal stopping device for the upper limit of travel shall be mounted so that it is operated directly by the motion of the working platform itself.

(xviii) Emergency stop switches shall be provided in or adjacent to each operating device.

(xix) Emergency stop switches shall:

(A) Have red operating buttons or handles.

(B) Be conspicuously and permanently marked "Stop."

(C) Be the manually opened and manually closed type.

(D) Be positively opened with the opening not solely dependent on springs.

(xx) The manual operation of an emergency stop switch associated with an operating device for the working platform shall open the potential relay for vertical travel, thereby disconnecting the electric power from the hoisting machine and applying both the primary and secondary brakes.

(xxi) The manual operation of the emergency stop switch associated with the operating device for a power-driven roof car shall cause the electrical power to the traverse machine to be interrupted, and the traverse machine brake to apply.

(w) Requirements for emergency communications.

(i) Communication equipment shall be provided for each powered platform for use in an emergency.

(ii) Two-way communication shall be established between personnel on the roof and personnel on the stalled working platform before any emergency operation of the working platform is undertaken by personnel on the roof.

(iii) The equipment shall permit two-way voice communication between the working platform; and

(A) Designated personnel continuously available while the powered platform is in use; and

(B) Designated personnel on roof-powered platforms, undertaking emergency operation of the working platform by means of the emergency operating device located near the hoisting machine.

(iv) The emergency communication equipment shall be one of the following types:

(A) Telephone connected to the central telephone exchange system; or

(B) Telephones on a limited system or an approved two-way radio system, provided designated personnel are available to receive a message during the time the powered platform is in use.

(5) Type T powered platforms.

(a) Roof car. The requirements of subsection (4)(a) through (4)(e) of this Appendix shall apply to Type T powered platforms.

(b) Working platform. The requirements of subsection (4)(f) through (4)(p) of this Appendix apply to Type T powered platforms.

(i) The working platform shall be suspended by at least two wire ropes.

(ii) The maximum rated speed at which the working platform of self-powered platforms may be moved in a vertical direction shall not exceed 35 feet per minute.

(c) Hoisting equipment. The requirements of subsection (4)(q) and (r) of this Appendix shall apply to Type T powered platforms.

(d) Brakes. Brakes requirements of subsection (4)(s) of this Appendix shall apply.

(e) Hoisting ropes and rope connections.

(i) Subsection (4)(t)(i) through (vi) and (viii) of this Appendix shall apply to Type T powered platforms.

(ii) Adjustable shackle rods in subsection (4)(t)(vii) of this Appendix shall apply to Type T powered platforms, if the working platform is suspended by more than two wire ropes.

(f) Electrical wiring and equipment.

(i) The requirements of subsection (4)(v)(i) through (vi) of this Appendix shall apply to Type T powered platforms. "Circuit protection limitation," "powered platform electrical service system," all operating services and control equipment shall comply with the specifications contained in Part 2, section 26, ANSI A120.1-1970.

(ii) For electrical protective devices the requirements of subsection (4)(v)(i) through (viii) of this Appendix shall apply to Type T powered platforms. Requirements for the "circuit potential limitation" shall be in accordance with specifications contained in Part 2, section 26, of ANSI A120.1-1970.

(g) Emergency communications. All the requirements of subsection (4)(w) of this Appendix shall apply to Type T powered platforms.

[Statutory Authority: Chapter 49.17 RCW. 90-09-026 (Order 90-01), § 296-24-87037, filed 4/10/90, effective 5/25/90.]

WAC 296-24-885 Vehicle-mounted elevating and rotating work platforms.

[Order 76-6, § 296-24-885, filed 3/1/76; Order 73-5, § 296-24-885, filed 5/9/73 and Order 73-4, § 296-24-885, filed 5/7/73.]

WAC 296-24-88501 Definitions. (1) Aerial device. Any vehicle-mounted device, telescoping or articulating or both, which is used to position workers and/or materials.

(2) Aerial ladder. An aerial device consisting of a single- or multiple-section extensible ladder.

(3) Articulating boom platform. An aerial device with two or more hinged boom sections.

(4) Extensible boom platform. An aerial device (except ladders) with a telescopic or extensible boom. Telescopic derricks with personnel platform attachments shall be considered to be extensible boom platforms when used with a personnel platform.

(5) Electric line truck. A truck used to transport people, tools and material, and to serve as a traveling workshop for electric power line construction and maintenance work. It is sometimes equipped with a boom and auxiliary equipment

for setting poles, digging holes and elevating material and/or people.

(6) Mobile unit. A combination of an aerial device, its vehicle, and related equipment.

(7) Platform. Any personnel-carrying device (basket or bucket) which is a component of an aerial device.

(8) Vehicle. Any carrier that is not manually propelled.

(9) Vertical tower. An aerial device designed to elevate a platform in a substantially vertical axis.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-88501, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-88501, filed 3/1/76; Order 73-5, § 296-24-88501, filed 5/9/73 and Order 73-4, § 296-24-88501, filed 5/7/73.]

WAC 296-24-88503 General requirements. (1) Unless otherwise provided in this section, aerial devices (aerial lifts) acquired on or after July 1, 1975, shall be designed and constructed in conformance with the applicable requirements of the American National Standard for "Vehicle Mounted Elevating and Rotating Work Platforms," ANSI A92.2-1969, including appendix. Aerial lifts acquired for use before July 1, 1975 which do not meet the requirements of ANSI A92.2-1969, may not be used after July 1, 1976, unless they shall have been modified so as to conform with the applicable design and construction requirements of ANSI A92.2-1969. Aerial devices include the following types of vehicle-mounted aerial devices used to elevate personnel and/or material to jobsites above ground:

(a) Extensible boom platforms;

(b) Aerial ladders;

(c) Articulating boom platforms;

(d) Vertical towers, and

(e) A combination of any of the above.

(f) Aerial equipment may be made of metal, wood, fiberglass reinforced plastic (FRP), or other material; may be powered or manually operated; and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.

(2) Aerial lifts may be "field modified" for uses other than those intended by the manufacturer, provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2-1969 and this section, and to be at least as safe as the equipment was before modification.

(3) The requirements of this section do not apply to firefighting equipment or electric line trucks used in the construction and maintenance of power distribution lines by telecommunications employees, line clearance tree trimming employees, electric contractor employees and electric utility employees, except with the requirement that a vehicle be a stable support for the aerial device.

(4) For operations near overhead electrical lines see chapter 296-24 WAC Part L.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-88503, filed 11/22/91, effective 12/24/91; Order 76-6, § 296-24-88503, filed 3/1/76; Order 73-5, § 296-24-88503, filed 5/9/73 and Order 73-4, § 296-24-88503, filed 5/7/73.]

WAC 296-24-88505 Specific requirements. (1) Ladder trucks and tower trucks. Before the truck is moved for highway travel, aerial ladders shall be secured in the lower traveling position by the locking device above the truck cab, and the manually operated device at the base of the ladder, or by other equally effective means (e.g., cradles which prevent rotation of the ladder in combination with positive acting linear actuators).

(2) Extensible and articulating boom platforms.

(a) Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.

(b) Only trained persons shall operate an aerial lift.

(c) Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.

(d) Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

(e) A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.

(f) Boom and basket load limits specified by the manufacturer shall not be exceeded.

(g) The brakes shall be set and outriggers, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline.

(h) An aerial lift truck may not be moved when the boom is elevated in a working position with workers in the basket, except for equipment which is specifically designed for this type of operation in accordance with the provisions of WAC 296-24-88503 (1)(2).

(i) Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

(j) Climbers shall not be worn while performing work from an aerial lift.

(k) Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position, except as provided in subdivision (h).

(3) Bursting safety factor. All critical hydraulic and pneumatic components shall comply with the provisions of the American National Standards Institute Standard, ANSI A92.2-1969, Section 4.9 Bursting Safety Factor. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical components shall have a bursting safety factor of at least two to one.

(4) Welding standards. All welding shall conform to the following American Welding Society (AWS) Standards, as applicable:

(a) Standard Qualification Procedure, AWS B3.0-41.

(b) Recommended Practices for Automotive Welding Design, AWS D8.4-61.

(c) Standard Qualification of Welding Procedures and Welders for Piping and Tubing, AWS D10.9-69.

(d) Specifications for Welding Highway and Railway Bridges, AWS D2.0-69. (Rev. 2-5-76.)

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-88505, filed 7/20/94, effective 9/20/94; Order 76-6, § 296-24-88505, filed 3/1/76.]

WAC 296-24-900 Manlifts.

[Order 73-5, § 296-24-900, filed 5/9/73 and Order 73-4, § 296-24-900, filed 5/7/73.]

WAC 296-24-90001 Definitions. (1) Handhold (handgrip). A handhold is a device attached to the belt which can be grasped by the passenger to provide a means of maintaining balance.

(2) Open type. One which has a handgrip surface fully exposed and capable of being encircled by the passenger's fingers.

(3) Closed type. A cup-shaped device, open at the top in the direction of travel of the step for which it is to be used, and closed at the bottom into which the passenger may place fingers.

(4) Limit switch. A device, the purpose of which is to cut off the power to the motor and apply the brakes to stop the carrier in the event that a loaded step passes the terminal landing.

(5) Manlift. A device consisting of a power-driven endless belt moving in one direction only, and provided with steps or platforms and handholds attached to it for the transportation of personnel from floor to floor.

(6) Rated speed. Rated speed is the speed for which the device is designed and installed.

(7) Split-rail switch. An electric limit switch operated mechanically by the rollers on the manlift steps. It consists of an additional hinged or "split" rail, mounted on the regular guiderail, over which the step rollers pass. It is spring-loaded in the "split" position. If the step supports no load, the rollers will "bump" over the switch; if a loaded step should pass over the section, the split rail will be forced straight, tripping the switch and opening the electrical circuit.

(8) Step (platform). A step is a passenger carrying unit.

(9) Travel. The travel is the distance between the centers of the top and bottom pulleys.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-90001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-90001, filed 5/9/73 and Order 73-4, § 296-24-90001, filed 5/7/73.]

WAC 296-24-90003 General requirements. (1) Application. These standards apply to the construction, maintenance, inspection, and operation of manlifts in relation to accident causing hazards. Manlifts covered by these standards consist of platforms or brackets and accompanying handholds mounted on, or attached to an endless belt, operating vertically in one direction only and being supported by, and driven through pulleys, at the top and bottom. These manlifts are intended for conveyance of persons only. It is not intended that these standards cover moving stairways, elevators with enclosed platforms ("Paternoster" elevators), gravity lifts, nor conveyors used only for conveying material. These standards apply to manlifts used to carry only personnel trained and authorized by the employer in their use.

(2) Exceptions for new and existing equipment. The purpose of these standards is to provide reasonable safety for life and limb.

(3) Design requirements. All new manlift installations and equipment installed after the effective date of these standards shall meet the design requirements of the "American National Safety Standard for Manlifts ANSI A90.1-1969," and the requirements of this section.

(4) Reference to other codes. The following codes are applicable to this section. Safety Code for Mechanical Power Transmission Apparatus ANSI B15.1-1953 (R 1958) and chapter 296-24 WAC Part C; chapter 296-24 WAC Part L; Safety Code for Fixed Ladders, ANSI A14.3-1956 and Safety Requirements for Floor and Wall Openings, Railings and Toeboards, ANSI A12.1-1967 and chapter 296-24 WAC Part J-1.

(5) Floor openings.

(a) Allowable size. Floor openings for both the "up" and "down" runs shall be not less than 28 inches nor more than 36 inches in width for a 12-inch belt not less than 34 inches nor more than 38 inches for a 14-inch belt; and not less than 36 inches nor more than 40 inches for a 16-inch belt and shall extend not less than 24 inches, nor more than 28 inches from the face of the belt.

(b) Uniformity. All floor openings for a given manlift shall be uniform in size and shall be approximately circular, and each shall be located vertically above the opening below it.

(6) Landing.

(a) Vertical clearance. The clearance between the floor or mounting platform and the lower edge for the conical guard above it required by WAC 296-24-90003(7) shall not be less than 7 feet 6 inches. Where this clearance cannot be obtained no access to the manlift shall be provided and the manlift runway shall be enclosed where it passes through such floor.

(b) Clear landing space. The landing space adjacent to the floor openings shall be free from obstruction and kept clear at all times. This landing space shall be at least 2 feet in width from the edge of the floor opening used for mounting and dismounting.

(c) Lighting and landing. Adequate lighting not less than 5-foot candles, shall be provided at each floor landing at all times when the lift is in operation.

(d) Landing surface. The landing surfaces at the entrances and exits to the manlift shall be constructed and maintained as to provide safe footing at all times.

(e) Emergency landings. Where there is a travel of 50 feet or more between floor landings, one or more emergency landings shall be provided so that there will be a landing (either floor or emergency) for every 25 feet or less of manlift travel.

(i) Emergency landings shall be accessible from both the "up" and "down" rungs of the manlift and shall give access to the ladder required in WAC 296-24-90003(12).

(ii) Emergency landings shall be completely enclosed with a standard railing and toeboard.

(iii) Platforms constructed to give access to bucket elevators or other equipment for the purpose of inspection, lubrication, and repair may also serve as emergency landings under this rule. All such platforms will then be considered part of the emergency landing and shall be provided with standard railings and toeboards.

(7) Guards on underside of floor openings.

(a) Fixed type. On the ascending side of the manlift floor openings shall be provided with a bevel guard or cone meeting the following requirements:

(i) The cone shall make an angle of not less than 45° with the horizontal. An angle of 60° or greater shall be used where ceiling heights permit.

(ii) The lower edge of this guard shall extend at least 42 inches outward from any handhold on the belt. It shall not extend beyond the upper surface of the floor above.

(iii) The cone shall be made of not less than No. 18 U.S. gauge sheet steel or material of equivalent strength or stiffness. The lower edge shall be rolled to a minimum diameter of one-half inch and the interior shall be smooth with no rivets, bolts or screws protruding.

(b) Floating type. In lieu of the fixed guards specified in WAC 296-24-90003 (7)(a) a floating type safety cone may be used, such floating cones to be mounted on hinges at least 6 inches below the under side of the floor and so constructed as to actuate a limit switch should a force of 2 pounds be applied on the edge of the cone closest to the hinge. The depth of this floating cone need not exceed 12 inches.

(8) Protection of entrances and exits.

(a) Guardrail requirement. The entrances and exits at all floor landings affording access to the manlift shall be guarded by a maze (staggered railing) or a handrail equipped with self-closing gates.

(b) Construction. The rails shall be standard guardrails with toeboards meeting the provisions of the Safety Requirements for Floor and Wall Openings, Railings and Toeboards, ANSI A12.1-1967 and WAC 296-24-750 through 296-24-75011.

(c) Gates. Gates, if used, shall open outward and shall be self-closing. Corners of gates shall be rounded.

(d) Maze. Maze or staggered openings shall offer no direct passage between enclosure and outer floor space.

(e) Except where building layout prevents, entrances at all landings shall be in the same relative position.

(f) If located in buildings to which the public has access, such manlift or manlifts shall be located in an enclosure protected by self-closing spring-locked doors. Keys to such doors shall be limited to authorized personnel.

(9) Guards for openings.

(a) Construction. The floor opening at each landing shall be guarded on sides not used for entrance or exit by a standard railing and toeboard or by panels or wire mesh of not less than Number 10 U.S. gage, expanded metal of not less than Number 13 U.S. gage or sheet metal of equivalent strength.

(b) Guardrails in stairwells. When belt manlift is installed in a stairwell a standard guardrail shall be placed between the floor openings of the manlift and the stairways.

(c) Height and location. Such rails or guards shall be at least forty-two inches in height on the "up" running side and sixty-six inches on the "down" running side. If a guardrail is used the section of the guard above the rail may be of the construction specified in WAC 296-24-90003 (9)(a) or may consist of vertical or horizontal bars which will reject a ball six inches in diameter. Rails or guards shall be located not more than one foot from the edge of the floor opening.

(d) Safeguards required. Expanded metal, sheet metal or wood guards must be installed to cover the area from the floor to seven feet above the floor on each exposed side of the belt manlift at each floor landing, so persons cannot place their hands in the area where the step rollers travel.

(10) Bottom arrangement.

(a) Bottom landing. At the bottom landing the clear area shall be not smaller than the area enclosed by the guardrails on the floors above, and any wall in front of the down-running side of the belt shall be not less than 48 inches from the face of the belt. This space shall not be encroached upon by stairs or ladders.

(b) Location of lower pulley. The lower (boot) pulley shall be installed so that it is supported by the lowest landing served. The sides of the pulley support shall be guarded to prevent contact with the pulley or the steps.

(c) Mounting platform. A mounting platform shall be provided in front or to one side of the uprun at the lowest landing, unless the floor level is such that the following requirement can be met: The floor or platform shall be at or above the point at which the upper surface of the ascending step completes its turn and assumes a horizontal position.

(d) Guardrails. To guard against persons walking under a descending step, the area on the downside of the manlift shall be guarded in accordance with WAC 296-24-90003(8). To guard against a person getting between the mounting platform and an ascending step, the area between the belt and the platform shall be protected by a guardrail.

(11) Top arrangements.

(a) Clearance from floor. A top clearance shall be provided of at least 11 feet above the top terminal landing. This clearance shall be maintained from a plane through each face of the belt to a vertical cylindrical plane having a diameter 2 feet greater than the diameter of the floor opening, extending upward from the top floor to the ceiling on the up-running side of the belt. No encroachment of structural or machine supporting members within this space will be permitted.

(b) Pulley clearance.

(i) There shall be a clearance of at least 5 feet between the center of the head pulley shaft and any ceiling obstruction.

(ii) The center of the head pulley shaft shall be not less than 6 feet above the top terminal landing.

(c) Emergency grab rail. An emergency grab bar or rail and platform shall be provided at the head pulley when the distance to the head pulley is over 6 feet above the top landing, otherwise only a grab bar or rail is to be provided to permit the rider to swing free should the emergency stops become inoperative.

(12) Emergency exit ladder. A fixed metal ladder accessible from both the "up" and "down" run of the manlift shall be provided for the entire travel of the manlift. Such ladder shall be in accordance with ANSI A14.3-1956, Safety Code for Fixed Ladders and WAC 296-24-810 through 296-24-81013.

(13) Superstructure bracing. Manlift rails shall be secured in such a manner as to avoid spreading, vibration, and misalignment.

(14) Illumination.

(a) General. Both runs of the manlift shall be illuminated at all times when the lift is in operation. An intensity of

not less than 1-foot candle shall be maintained at all points. (However, see WAC 296-24-90003 (6)(c) for illumination requirements at landings.)

(b) Control of illumination. Lighting of manlift runways shall be by means of circuits permanently tied into the building circuits (no switches), or shall be controlled by switches at each landing. Where separate switches are provided at each landing, any switch shall turn on all lights necessary to illuminate the entire runway.

(15) Weather protection. The entire manlift and its driving mechanism shall be protected from the weather at all times.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-90003, filed 11/22/91, effective 12/24/91; Order 76-6, § 296-24-90003, filed 3/1/76; Order 73-5, § 296-24-90003, filed 5/9/73 and Order 73-4, § 296-24-90003, filed 5/7/73.]

WAC 296-24-90005 Mechanical requirements. (1) Machines, general.

(a) Brakes. Brakes provided for stopping and holding a manlift shall be inherently self-engaging, by requiring power or force from an external source to cause disengagement. The brake shall be electrically released, and shall be applied to the motor shaft for direct-connected units or to the input shaft for belt-driven units. The brake shall be capable of stopping and holding the manlift when the descending side is loaded with 250 lb on each step.

(b) Belt.

(i) The belts shall be of hard-woven canvas, rubber-coated canvas, leather, or other material meeting the strength requirements of WAC 296-24-90003(3) and having a coefficient of friction such that when used in conjunction with an adequate tension device it will meet the brake test specified in WAC 296-24-90005 (1)(a).

(ii) The width of the belt shall be not less than 12 inches for a travel not exceeding 100 feet, not less than 14 inches for a travel greater than 100 feet but not exceeding 150 feet and 16 inches for a travel exceeding 150 feet.

(iii) A belt that has become torn while in use on a manlift shall not be spliced and put back in service.

(iv) Belt fastenings. Belts shall be fastened by a lapped splice or shall be butt spliced with a strap on the side of the belt away from the pulley. For lapped splices, the overlap of the belt at the splice shall be not less than three feet where the total travel of the manlift does not exceed one hundred feet and not less than four feet, if the travel exceeds one hundred feet.

Where butt splices are used the straps shall extend not less than three feet on one side of the butt for a travel not in excess of one hundred feet, and four feet for a travel in excess of one hundred feet.

For twelve inch belts, the joint shall be fastened with not less than twenty special elevator bolts, each of a minimum diameter of one-quarter inch. These bolts shall be arranged symmetrically in five rows so arranged as to cover the area of the joint effectively. The minimum number of bolts for a belt width of fourteen inches shall be not less than twenty-three and for belt widths of sixteen inches, the number of bolts shall be not less than twenty-seven.

(v) Pulleys. Drive pulleys and idler (boot) pulleys shall have a diameter not less than given in Table 1.

TABLE 1

Belt Construction	Minimum Strength (lb. per inch of width)	Minimum Pulley (diameter inches)
5 ply	1500	20
6 ply	1800	20
7 ply	2100	22

Note: Table No. 1 is included solely for the purpose of determining the minimum diameter of pulley required for the listed number of plys of belt construction.

(vi) Pulley protection. The machine shall be so designed and constructed as to catch and hold the driving pulley in event of shaft failure.

(2) Speed. Maximum speed. No manlift designed for a speed in excess of 80 feet per minute shall be installed.

(3) Platforms or steps.

(a) Minimum depth. Steps or platforms shall be not less than 12 inches nor more than 14 inches deep, measured from the belt to the edge of the step or platform.

(b) Width. The width of the step or platform shall be not less than the width of the belt to which it is attached.

(c) Distance between steps. The distance between steps shall be equally spaced and not less than 16 feet measured from the upper surface of one step to the upper surface of the next step above it.

(d) Angle of step. The surface of the step shall make approximately a right angle with the "up" and "down" run of the belt, and shall travel in the approximate horizontal position with the "up" and "down" run of the belt.

(e) Surfaces. The upper or working surfaces of the step shall be of a material having inherent nonslip characteristics (coefficient of friction not less than 0.5) or shall be covered completely by a nonslip tread securely fastened to it.

(f) Strength of step supports. When subjected to a load of 400 pounds applied at the approximate center of the step, step frames, or supports and their guides shall be of adequate strength to:

(i) Prevent the disengagement of any step roller.

(ii) Prevent any appreciable misalignment.

(iii) Prevent any visible deformation of the steps or its support.

(g) Prohibition of steps without handholds. No steps shall be provided unless there is a corresponding handhold above or below it meeting the requirements of WAC 296-24-90005(4). If a step is removed for repairs or permanently, the handholds immediately above and below it shall be removed before the lift is again placed in service.

(4) Handholds.

(a) Location. Handholds attached to the belt shall be provided and installed so that they are not less than 4 feet nor more than 4 feet 8 inches above the step tread. These shall be so located as to be available on the both "up" and "down" run of the belt.

(b) Size. The grab surface of the handhold shall be not less than 4 1/2 inches in width, not less than 3 inches in depth, and shall provide 2 inches of clearance from the belt. Fastenings for handholds shall be located not less than 1 inch from the edge of the belt.

(c) Strength. The handhold shall be capable of withstanding, without damage, a load of 300 pounds applied parallel to the run of the belt.

(d) Prohibition of handhold without steps. No handhold shall be provided without a corresponding step. If a handhold is removed permanently or temporarily, the corresponding step and handhold for the opposite direction of travel shall also be removed before the lift is again placed in service.

(e) Type. All handholds shall be of the closed type.

(5) Up limit stops.

(a) Requirements. Two separate automatic stop devices shall be provided to cut off the power and apply the brake when a loaded step passes the upper terminal landing. One of these shall consist of a split-rail switch mechanically operated by the step roller and located not more than 6 inches above the top terminal landing. The second automatic stop device may consist of any of the following:

(i) Any split-rail switch placed 6 inches above and on the side opposite the first limit switch.

(ii) An electronic device.

(iii) A switch actuated by a lever, rod, or plate, the latter to be placed on the "up" side of the head pulley so as to just clear a passing step.

(b) Emergency stop switch, treadle type in pit on down side. An emergency stop treadle switch shall be placed in the area below the lowest landing on the "down" side. This switch must stop the mechanism if a person should fail to get off at the lowest landing and be ejected from the step as it approaches its position to travel around the boot pulley.

(c) Manual reset location. After the manlift has been stopped by a stop device it shall be necessary to reset the automatic stop manually. The device shall be so located that a person resetting it shall have a clear view of both the "up" and "down" runs of the manlift. It shall not be possible to reset the device from any step or platform.

(d) Cut-off point. The initial limit stop device shall function so that the manlift will be stopped before the loaded step has reached a point of 24 inches above the top terminal landing.

(e) Electrical requirements.

(i) Where such switches open the main motor circuit directly they shall be of the multipole type.

(ii) Where electronic devices are used they shall be so designed and installed that failure will result in shutting off the power to the driving motor.

(iii) Where flammable vapors or dusts may be present all electrical installations shall be according to chapter 296-24 WAC Part L.

(iv) Unless of the oil-immersed type controller contacts carrying the main motor current shall be copper to carbon or equal, except where the circuit is broken at two or more points simultaneously.

(6) Emergency stop.

(a) General. An emergency stop means shall be provided.

(b) Location. This stop means shall be within easy reach of the ascending and descending runs of the belt.

(c) Operation. This stop means shall be so connected with the control lever or operating mechanism that it will cut off the power and apply the brake when pulled in the direction of travel.

(d) Rope. If rope is used, it shall be not less than three-eighths inch in diameter. Wire rope, unless marlin-covered, shall not be used.

(7) Instruction and warning signs.

(a) Instruction signs at landings or belts. Signs of conspicuous and easily read style giving instructions for the use of the manlift shall be posted at each landing or stenciled on the belt.

(i) Such signs shall be of letters not less than 1 inch in height and of a color having high contrast with the surface on which it is stenciled or painted (white or yellow on black or black on white or gray).

(ii) The instructions shall read approximately as follows:

Face the belt.
Use the handholds.
To stop-pull rope.

(b) Top floor warning sign and light.

(i) At the top floor an illuminated sign shall be displayed bearing the following wording:

"TOP FLOOR-GET OFF"

Signs shall be in block letters not less than 2 inches in height. This sign shall be located within easy view of an ascending passenger and not more than 2 feet above the top terminal landing.

(ii) In addition to the sign required by WAC 296-24-90005(7), a red warning light of not less than 40-watt rating shall be provided immediately below the upper landing terminal and so located as to shine in the passenger's face.

(c) Bottom of manlift warning signs, light and buzzer.

(i) Sign or light. A sign or light warning any passengers they are approaching the bottom landing shall be posted above bottom landing in a conspicuous place. Sign or light to be similar in size to top warning light and sign noted above.

(ii) An electric buzzer. An electric buzzer shall be installed five feet above the bottom landing on the down side to warn any riders they are approaching the bottom landing and the buzzer shall be activated automatically by the weight of a load on a step.

(d) Visitor warning. A conspicuous sign having the following legend-AUTHORIZED PERSONNEL ONLY-shall be displayed at each landing. The sign shall be of block letters not less than 2 inches in height and shall be of a color offering high contrast with the background color.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-90005, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-90005, filed 11/22/91, effective 12/24/91; Order 74-27, § 296-24-90005, filed 5/7/74; Order 73-5, § 296-24-90005, filed 5/9/73 and Order 73-4, § 296-24-90005, filed 5/7/73.]

WAC 296-24-90007 Operating rules. (1) Proper use of manlifts. No freight, packaged goods, pipe, lumber, or construction materials of any kind shall be handled on any manlift.

[Order 73-5, § 296-24-90007, filed 5/9/73 and Order 73-4, § 296-24-90007, filed 5/7/73.]

WAC 296-24-90009 Periodic inspection. (1) Frequency. All manlifts shall be inspected by a competent designated person at intervals of not more than 30 days.

Limit switches shall be checked weekly. Manlifts found to be unsafe shall not be operated until properly repaired.

(2) Items covered. This periodic inspection shall cover but is not limited to the following items:

Steps.
Step fastenings.
Rails.
Rail supports and fastenings.
Rollers and slides.
Belt and belt tension.
Handholds and fastenings.
Floor landings.
Guardrails.
Lubrication.
Limit switches.
Warning signs and lights.
Illumination.
Drive pulley.
Bottom (boot) pulley and clearance.
Pulley supports.
Motor.
Driving mechanism.
Brake.
Electrical switches.
Vibration and misalignment.
"Skip" on up or down run when mounting step (indicating worn gears).

(3) Inspection log. A written record shall be kept of findings at each inspection. Records of inspection shall be made available to the director of labor and industries or his/her duly authorized representative.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-90009, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-90009, filed 5/9/73 and Order 73-4, § 296-24-90009, filed 5/7/73.]

PART K
COMPRESSED GAS AND COMPRESSED GAS EQUIPMENT

WAC 296-24-920 Inspection of compressed gas cylinders.

[Order 73-5, § 296-24-920, filed 5/9/73 and Order 73-4, § 296-24-920, filed 5/7/73.]

WAC 296-24-92001 Definitions. (1) High- and low-pressure cylinders. High-pressure cylinders means those cylinders with a marked service pressure of 900 p.s.i. or greater; low-pressure cylinders are those with a marked service pressure less than 900 p.s.i.

(2) Minimum allowable wall thickness. The minimum allowable wall thickness means the minimum wall thickness required by the specification under which the cylinder was manufactured.

(3) Dents. Dents (in cylinders) means deformations caused by the cylinder coming in contact with a blunt object in such a way that the thickness of metal is not materially impaired.

(4) Cuts, gouges, or digs. Cuts, gouges, or digs (in cylinders) means deformations caused by contact with a sharp object in such a way as to cut into or upset the metal of the cylinder, decreasing the wall thickness at that point.

(5) Corrosion or pitting. Means corrosion or pitting in cylinders involving the loss of wall thickness by corrosive media.

Note: There are several kinds of pitting or corrosion to be considered.

(6) Isolated pitting. Means isolated pits of small cross-section which do not effectively weaken the cylinder wall but are indicative of possible complete penetration and leakage.

Note: Since the pitting is isolated the original wall is essentially intact.

(7) Line corrosion. Means pits which are not isolated but are connected or nearly connected to others in a narrow band or line.

Note: This condition is more serious than isolated pitting. Line corrosion frequently occurs in the area of intersection of the footring and bottom of a cylinder. This is sometimes referred to as "crevice corrosion."

(8) General corrosion. Means corrosion which covers considerable surface areas of the cylinder.

Note: It reduces the structural strength. It is often difficult to measure or estimate the depth of general corrosion because direct comparison with the original wall cannot always be made. General corrosion is often accompanied by pitting.

(9) "DOT" means the U.S. Department of Transportation.

[Order 73-5, § 296-24-92001, filed 5/9/73 and Order 73-4, § 296-24-92001, filed 5/7/73.]

WAC 296-24-92003 General requirements. (1) Application.

(a) Each employer shall determine that compressed gas cylinders under the employers control are in a safe condition to the extent that this can be determined by visual, and other inspection required by WAC 296-24-920 through 296-24-92011.

(b) The requirements contained in these standards are not intended to apply to cylinders manufactured under specification DOT (ICC)-3HT (49 CFR Ch.1). Separate requirements covering service life and standards for visual inspection of these cylinders are contained in Compressed Gas Association Pamphlet C-8, "Standard for Requalification of ICC-3HT Cylinders."

(2) Quality of inspection. Experience in the inspection of cylinders is an important factor in determining the acceptability of a given cylinder for continued service.

Note: Users lacking this experience and having doubtful cylinders should return them to a manufacturer of the same type of cylinders for reinspection.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-92003, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-92003, filed 5/9/73 and Order 73-4, § 296-24-92003, filed 5/7/73.]

WAC 296-24-92005 Inspection of low-pressure cylinders exempt from the hydrostatic test including acetylene cylinders. (1) Application. This section covers cylinders of the type that are exempt from the hydrostatic retest requirements of the DOT by virtue of their exclusive use in certain noncorrosive gas service. They are not subject

to internal corrosion and do not require internal shell inspection.

(2) Preparation for inspection. Rust, scale, caked paint, etc., shall be removed from the exterior surface so that the surface can be adequately observed. Facilities shall be provided for inverting the cylinder to facilitate inspection of the bottom. This is important because experience has shown this area to be the most susceptible to corrosion.

(3) Exterior inspection. Cylinders shall be checked as outlined below for corrosion, general distortion, or any other defect that might indicate a weakness which would render it unfit for service.

(a) To fix corrosion limits for all types, designs, and sizes of cylinders, and include them in this section is not practicable. Cylinders categorized by this section and subsection (1) of this section shall meet the following requirements. Failure to meet any of these requirements is of itself cause for rejection of a cylinder. Rejected cylinders shall be removed from the work place. Rejected cylinders may be returned to the manufacturer for reinspection.

(i) A cylinder shall be rejected when the tare weight is less than ninety-five percent of the original tare weight marked on the cylinder. When determining tare weight, be sure that the cylinder is empty.

(ii) A cylinder shall be rejected when the remaining wall in an area having isolated pitting only is less than one-third of the minimum allowable wall thickness as determined under (b) and (d) of this subsection.

(iii) A cylinder shall be rejected when line corrosion on the cylinder is three inches in length or over and the remaining wall is less than three-fourths of the minimum allowable wall thickness or when line corrosion is less than three inches in length and the remaining wall thickness is less than one-half the minimum allowable wall thickness as determined under (b) through (d) of this subsection.

(iv) A cylinder shall be rejected when the remaining wall in an area of general corrosion is less than one-half of the minimum allowable wall thickness as determined under (b) through (d) of this subsection.

(b) To use the criteria in (a) of this subsection, it is necessary to know the original wall thickness of the cylinder or the minimum allowable wall thickness. Table M-1 lists the minimum allowable wall thickness under DOT specifications (49 CFR Ch. 1) for a number of common size low-pressure cylinders.

TABLE M-1

Cylinder size O.D. x length (inches)	DOT Specification marking	Nominal water capacity (pounds)	Minimum allowable wall thickness (inches)
15 x 46	4B240[1]	239	0.128
14 13/16 x 47	4E240	239	.140
14 15/16 x 46	4BA240	239	.086
14 11/16 x 28 3/8	4BA240	143	.086
11 29/32 x 32 11/16	4BA240	95	.078
11 29/32 x 18 11/32	4BA240	48	.078

[1] Without longitudinal seam.

(c) When the wall thickness of the cylinder at manufacture is not known, and the actual wall thickness cannot be measured, this cylinder shall be rejected when the inspection reveals that the deepest pit in a general corrosion area exceeds three sixty-fourths inch. This is arrived at by considering that in no case shall the pitting exceed one-half the minimum allowable wall thickness which is 0.064 inch. When a pit measures 0.043 inch (approximately three sixty-fourths inch) in a corrosion area, general corrosion will already have removed 0.021 inch of the original wall and the total pit depth as compared to the initial wall will be 0.064 inch.

(d) When the original wall thickness at manufacture is known, or the actual wall thickness is measured, this thickness less one and one-half times the maximum measured pit depth shall be 0.064 inch or greater. If it is less, the cylinder shall be rejected.

(e) Dents are of concern where the metal deformation is sharp and confined, or where they are near a weld. Where metal deformation is not sharp, dents of larger magnitude can be tolerated.

(f) Where denting occurs so that any part of the deformation includes a weld, the maximum allowable dent depth shall be one-fourth inch.

(g) When denting occurs so that no part of the deformation includes a weld, the cylinder shall be rejected if the depth of the dent is greater than one-tenth of the mean diameter of the dent.

(h) Cuts, gouges, or digs reduce the wall thickness of the cylinder and in addition are considered to be stress raisers. Depth limits are set in these standards; however, cylinders shall be rejected at one-half of the limit set whenever the length of the defect is three inches or more.

(i) When the original wall thickness at manufacture is not known, and the actual wall thickness cannot be measured a cylinder shall be rejected if the cut, gouge, or dig exceeds one-half of the minimum allowable wall thickness as determined under (b) through (d) of this subsection.

(ii) When the original wall thickness at manufacture is known, or the actual wall thickness is measured, a cylinder shall be rejected if the original wall thickness minus the depth of the defect is less than one-half of the minimum allowable wall thickness as determined under (b) through (d) of this subsection.

(i) Leaks can originate from a number of sources, such as defects in a welded or brazed seam, defects at the threaded opening, or from sharp dents, digs, gouges, or pits.

(i) To check for leaks, the cylinder shall be charged and carefully examined. All seams and pressure openings shall be coated with a soap or other suitable solution to detect the escape of gas. Any leakage is cause for rejection.

(ii) Safety relief devices as defined in WAC 296-24-93001(1) shall be tested for leaks before a charged cylinder is shipped from the cylinder filling plant.

(j) After fire damage, cylinders shall be carefully inspected for evidence of exposure to fire.

(i) Common evidences of exposure to fire are:

(A) Charring or burning of the paint or other protective coat.

(B) Burning or sintering of the metal.

(C) Distortion of the cylinder.

(D) Melted out fuse plugs.

(E) Burning or melting of valve.

(ii) The evaluation of fire damage by DOT regulations state that, "a cylinder which has been subjected to the action of fire must not again be placed in service until it has been properly reconditioned," in accordance with 49 CFR 173.34(f). The general intent of this requirement is to remove from service cylinders which have been subject to the action of fire which has changed the metallurgical structure or the strength properties of the steel, or in the case of acetylene cylinders caused breakdown of porous filler. This is normally determined by visual examination as covered above with particular emphasis to the condition of the protective coating. If the protective coating has been burnt off or if the cylinder body is burnt, warped, or distorted, it is assumed that the cylinder has been overheated and 49 CFR 173.34(f) shall be complied with. If, however, the protective coating is only dirtied from smoke or other debris, and is found by examination to be intact underneath, the cylinder shall not be considered affected within the scope of this requirement.

(k) Cylinders are manufactured with a reasonably symmetrical shape. Cylinders which have definite visible bulges shall be removed from service and evaluated. Cylinders shall be rejected when a variation of one percent or more is found in the measured circumferences or in peripheral distances measured from the valve spud to the center seam (of equivalent fixed point).

(l) Cylinder necks shall be examined for serious cracks, folds, and flaws. Neck cracks are normally detected by testing the neck during charging operations with a soap solution.

(m) Cylinder neck threads shall be examined whenever the valve is removed from the cylinder. Cylinders shall be rejected if the required number of effective threads are materially reduced, or if a gas tight seal cannot be obtained by reasonable valving methods. Gages shall be used to measure the number of effective threads.

(n) If the valve is noticeably tilted the cylinder shall be rejected.

(o) The footring and headring of cylinders may become so distorted through service abuse that they no longer perform their functions:

(i) To cause the cylinder to remain stable and upright.

(ii) To protect the valve. Rings shall be examined for distortion; for looseness, and for failure of welds. Appearances may often warrant rejection of the cylinder.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-92005, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-92005, filed 5/9/73 and Order 73-4, § 296-24-92005, filed 5/7/73.]

WAC 296-24-92007 Low-pressure cylinders subject to hydrostatic testing. (1) Application. Cylinders covered in this section are low-pressure cylinders other than those covered in WAC 296-24-92005 through 296-24-92005 (3)(o)(ii). They differ essentially from such cylinders in that they require a periodic hydrostatic retest which includes an internal and external examination. Defect limits for the external examination are prescribed in WAC 296-24-92005 through 296-24-92005 (3)(o)(ii), with exceptions for aluminum cylinders shown in WAC 296-24-92007(4).

(2) Preparation for inspection. Flammable gas cylinders shall be purged before being examined with a light. Lamps used for flammable gas cylinder inspection shall be explosion proof.

(3) Internal inspection. Cylinders shall be inspected internally at least every time the cylinder is periodically retested. The examination shall be made with a light of sufficient intensity to clearly illuminate the interior walls.

(4) External inspection of aluminum cylinders. The inspection requirements of WAC 296-24-92005 through 296-24-92005 (3)(o)(ii) shall be met, except as follows:

(a) Aluminum cylinders shall be rejected when impairment to the surface (corrosion or mechanical defect) exceeds a depth where the remaining wall is less than three-fourths of the minimum allowable wall thickness required by the specification under which the cylinder was manufactured.

(b) Aluminum cylinders subjected to the action of fire shall be removed from service.

[Order 73-5, § 296-24-92007, filed 5/9/73 and Order 73-4, § 296-24-92007, filed 5/7/73.]

WAC 296-24-92009 High-pressure cylinders. (1) Application. High-pressure cylinders are those with a marked service pressure of 900 p.s.i. or higher. They are seamless; no welding is permitted. The great bulk of such cylinders are of the 3A or 3AA types under DOT specifications (49 CFR Ch. 1).

(2) Preparation for inspection.

(a) Cylinders shall be cleaned for inspection so that the inside and outside surfaces and all conditions can be observed. This shall include removal of scale and caked paint from the exterior and the thorough removal of internal scale. Cylinders with interior coating shall be examined for defects in the coating. If the coating is defective, it shall be removed.

(b) A good inspection light of sufficient intensity to clearly illuminate the interior wall is mandatory for internal inspection. Flammable gas cylinders shall be purged before being examined with a light. Lamps for flammable gas cylinder inspection shall be explosion proof.

(3) Exterior inspection.

(a) To fix corrosion limits for all types, designs, and sizes of cylinders, and include them in this section, is not practicable. Considerable judgment is required in evaluating cylinders fit for service. Experience is a major factor, aside from strength considerations for high pressure cylinders.

(b) When the original wall thickness of the cylinder is not known, and the actual wall thickness cannot be measured, the cylinder shall be rejected if corrosion exceeds one thirty-second inch in depth. This is arrived at by subtracting from the minimum allowable wall at manufacture (0.221 inch), the limiting wall in service (0.195 inch), to give the maximum allowable corrosion limit of 0.026 inch, the equivalent of one thirty-second inch.

(c) When the wall thickness is known, or the actual wall thickness is measured, the difference between this known wall and the limiting value establishes the maximum corrosion figure. The normal hot forged cylinder of this size will have a measured wall of about 0.250 inch. Comparison of this with the limiting wall thickness shows that defects up

to about one-sixteenth inch are allowable provided, of course, that the actual wall is measured or is known.

(d) Cylinders with general corrosion are evaluated by subjecting them to a hydrostatic test. Thus, a cylinder with an elastic expansion of 227 cc. or greater shall be rejected. If areas of pronounced pitting are included within the general corrosion, the depth of such pitting should also be measured (with the high spots of the actual surface as a reference plane) and the criteria established in the first example apply. Thus, the maximum corrosion limit would be one thirty-second inch when the wall was not known.

(e) Any defect of appreciable depth having a sharp bottom is a stress raiser and even though a cylinder may be acceptable from a stress standpoint, it is common practice to remove such defects. After any such repair operation, verification of the cylinder strength and structure shall be made by a hydrostatic test of other suitable means.

(f) Dents can be tolerated when the cylinder wall is not deformed excessively or abruptly. Generally speaking, dents are accepted up to a depth of about one-sixteenth inch when the major diameter of the dent is equal to or greater than 32 times the depth of the dent. Sharper dents than this are considered too abrupt and shall require rejection of the cylinder. On small diameter cylinders these general rules may have to be adjusted. Considerations of appearance play a major factor in the evaluation of dents.

(g) Cylinders with arc or torch burns shall be removed from service. Defects of this nature may be recognized by one of the following conditions:

(i) Removal of metal by scarfing or cratering.

(ii) A sentering or burning of the base metal.

(iii) A hardened heat affected zone. A simple method for verifying the presence of small arc burns is to file the suspected area. The hardened zone will resist filing as compared to the softer base metal.

(h) Cylinders are normally produced with a symmetrical shape. Cylinders with distinct visual bulges shall be removed from service until the nature of the defect is determined. Some cylinders may have small discontinuities related to the manufacturing process - mushroomed bottoms, offset shoulders, etc. These usually can be identified and are not normally cause for concern.

(i) Cylinders shall be carefully inspected for evidences of exposure to fire. (See WAC 296-24-92005 (3)(j).)

(j) Cylinder necks shall be examined for serious cracks, folds, and flaws. (See WAC 296-24-92005 (3)(l) and (m).)

[Order 73-5, § 296-24-92009, filed 5/9/73 and Order 73-4, § 296-24-92009, filed 5/7/73.]

WAC 296-24-92011 Internal inspection. (1) Cylinders shall be inspected internally at least every time the cylinder is periodically retested. This examination shall be made with a light of sufficient intensity to clearly illuminate the interior walls.

(2) A hammer test consists of tapping a cylinder a light blow with a suitably sized hammer. A cylinder, emptied of liquid content, with a clean internal surface, standing free, will have a clear ring. Cylinders with internal corrosion will give a duller ring dependent upon the amount of corrosion and accumulation of foreign material. Such cylinders shall be investigated. The hammer test is very sensitive and is an easy, quick, and convenient test that can be made without removing the valve before each charging. It is an invaluable indicator of internal corrosion.

[Order 73-5, § 296-24-92011, filed 5/9/73 and Order 73-4, § 296-24-92011, filed 5/7/73.]

WAC 296-24-930 Safety relief devices for compressed gas cylinders.

[Order 73-5, § 296-24-930, filed 5/9/73 and Order 73-4, § 296-24-930, filed 5/7/73.]

WAC 296-24-93001 Definitions. (1) Safety relief device. A "safety relief device" is a device intended to prevent rupture of a cylinder under certain conditions of exposures. (The term as used herein shall include the approach channel, the operating parts, and the discharge channel.)

(2) Approach channel. An "approach channel" is the passage or passages through which gas must pass from the cylinder to reach the operating parts of the safety relief device.

(3) Discharge channel. A "discharge channel" is the passage or passages beyond the operating parts through which gas must pass to reach the atmosphere exclusive of any piping attached to the outlet of the device.

(4) Safety relief device channel. A "safety relief device channel" is the channel through which gas released by operation of the device must pass from the cylinder to the atmosphere exclusive of any piping attached to the inlet or outlet of the device.

(5) Operating part. The "operating part" of a safety relief device is the part of a safety relief device that normally closes the safety discharge channel but when moved from this position as a result of the action of heat or pressure, or a combination of the two, permits escape of gas from the cylinder.

(6) Frangible disc. A "frangible disc" is an operating part in the form of a disc, usually of metal and which is so held as to close the safety relief device channel under normal conditions. The disc is intended to burst at a predetermined pressure to permit the escape of gas.

(7) Pressure opening. A "pressure opening" is the orifice against which the frangible disc functions.

(8) Rated bursting pressure. A "rated bursting pressure" of a frangible disc is the maximum pressure for which the disc is designed to burst when in contact with the pressure opening for which it was designed when tested.

(9) Fusible plug. A "fusible plug" is an operating part in the form of a plug of suitable low melting material, usually a metal alloy, which closes the safety relief device channel under normal conditions and is intended to yield or melt at a predetermined temperature to permit the escape of gas.

(10) Yield temperature. The "yield temperature" of a fusible plug is the temperature at which the fusible metal or alloy will yield when tested.

(11) Reinforced fusible plug. A "reinforced fusible plug" is a fusible plug consisting of a core of suitable material having a comparatively high yield temperature surrounded by a low-melting point fusible metal of the required yield temperature.

(12) Combination frangible disc-fusible plug. A "combination frangible disc-fusible plug" is a frangible disc in combination with a low melting point fusible metal, intended to prevent its bursting at its predetermined bursting pressure unless the temperature also is high enough to cause yielding or melting of the fusible metal

(13) Safety relief valve. A "safety relief valve" is a safety relief device containing an operating part that is held normally in a position closing the safety relief device channel by spring force and is intended to open and to close at predetermined pressures.

(14) Combination safety relief valve and fusible plug. A "combination safety relief valve and fusible plug" is a safety relief device utilizing a safety relief valve in combination with a fusible plug. This combination device may be an integral unit or separate units and is intended to open and to close at predetermined pressures or to open at a predetermined temperature.

(15) Set pressure. The "set pressure" of a safety relief valve is the pressure marked on the valve and at which it is set to start-to-discharge.

(16) Start-to-discharge pressure. The "start-to-discharge pressure" of a safety relief valve is the pressure at which the first bubble appears through a water seal of not over 4 inches in the outlet of the safety relief valve.

(17) Flow capacity. The "flow capacity" of a safety relief device is the capacity in cubic feet per minute of free air discharged at the required flow rating pressure.

(18) Flow rating pressure. The "flow rating pressure" is the pressure at which a safety relief device is rated for capacity.

(19) Nonliquefied compressed gas. A "nonliquefied compressed gas" is a gas, other than a gas in solution which under the charging pressure, is entirely gaseous at a temperature of 70°F.

(20) Liquefied compressed gas. A "liquefied compressed gas" is a gas which, under the charging pressure, is partially liquid at a temperature of 70°F. A flammable compressed gas which is normally nonliquefied at 70°F but which is partially liquid under the charging pressure and temperature, shall follow the requirements for liquefied compressed gases.

(21) Compressed gas in solution. A "compressed gas in solution" (Acetylene) is a nonliquefied gas which is dissolved in a solvent.

(22) Pressurized liquid compressed gas. A "pressurized liquid compressed gas" is a compressed gas other than a compressed gas in solution, which cannot be liquefied at a temperature of 70°F, and which is maintained in the liquid state at a pressure not less than 40 p.s.i.a. by maintaining the gas at a temperature less than 70°F.

(23) Test pressure of the cylinder. The "test pressure of the cylinder" is the minimum pressure at which a cylinder must be tested as prescribed in DOT specifications for compressed gas cylinders 41 CFR Ch. 1.

(24) Free air or free gas. "Free air" or "free gas" is air or gas measured at a pressure of 14.7 pounds per square inch absolute and a temperature of 60°F.

(25) DOT regulations. As used in these standards "DOT regulations" refers to the U.S. Department of Transportation Regulations for Transportation of Explosives and Other Dangerous Articles by Land and Water in Rail Freight, Express and Baggage Services and by Motor Vehicle (Highway) and Water, including Specifications for Shipping Containers, Code of Federal Regulations, Title 49, Parts 171 to 178.

[Order 73-5, § 296-24-93001, filed 5/9/73 and Order 73-4, § 296-24-93001, filed 5/7/73.]

WAC 296-24-93003 General requirements. (1) Application. Compressed gas cylinder, portable tanks, and cargo tanks shall have pressure relief devices installed and maintained in accordance with Compressed Gas Association Pamphlets S-1.1-1963 and 1965 addenda and S-1.2-1963.

(2) Types of safety relief devices. Types of safety relief devices as covered by this section are designated as follows:

(a) Type CG-1: Frangible disc.

(b) Type CG-2: Fusible plug or reinforced fusible plug utilizing a fusible alloy with yield temperature not over 170°F, nor less than 157°F (165°F nominal).

(c) Type CG-3: Fusible plug or reinforced fusible plug utilizing a fusible alloy with yield temperature not over 220°F, nor less than 208°F (212°F nominal).

(d) Type CG-4: Combination frangible disc-fusible plug, utilizing a fusible alloy with yield temperature not over 170°F, nor less than 157°F (165°F nominal).

(e) Type CG-5: Combination frangible disc-fusible plug, utilizing a fusible alloy with yield temperature not over 220°F, nor less than 208°F (212°F nominal).

(f) Type CG-7: Safety relief valve.

(g) Type CG-8: Combination safety relief valve and fusible plug.

(3) Specifications and tests. All safety relief devices covered by this section shall meet the design, construction, marking and test specification of the "Compressed Gas Association Safety Relief Device Standards Part 1-Cylinders for Compressed Gases: S1.1-1963."

(4) Specific requirements for safety relief devices.

(a) Compressed gas cylinders, which under the regulations of the department of transportation must be equipped with safety relief devices, shall be considered acceptable when equipped with devices of proper construction, location, and discharge capacity under the conditions prescribed in Table 1 of the Compressed Gas Associations Standard S-1.1-1963.

(b) Only replacement parts or assemblies provided by the manufacturer shall be used unless the advisability of interchange is proved by adequate tests.

(c) When a frangible disc is used with a compressed gas cylinder, the rated bursting pressure of the disc shall not exceed the minimum required test pressure of the cylinder with which the device is used, except for DOT-3E cylinders (49 CFR Ch. 1) the rated bursting pressure of the device shall not exceed 4,500 pounds per square inch gage (p.s.i.g.).

(d) When a safety relief valve is used on a compressed gas cylinder, the flow rating pressure shall not exceed the minimum required test pressure of the cylinder on which the safety relief valve is installed and the reseating pressure shall not be less than the pressure in a normally charged cylinder at 130°F.

(e) When fittings and piping are used on either the upstream or downstream side or both of a safety relief device or devices, the passages shall be so designed that the

flow capacity of the safety relief device will not be reduced below the capacity required for the container on which the safety relief device assembly is installed, nor to the extent that the operation of the device could be impaired. Fittings, piping, and method of attachment shall be designed to withstand normal handling and the pressures developed when the device or devices function.

(f) No shutoff valve shall be installed between the safety relief devices and the cylinder.

(5) Maintenance requirements for safety relief devices.

(a) As a precaution to keep cylinder safety relief devices in reliable operating condition, care shall be taken in the handling or storing of compressed gas cylinders to avoid damage. Care shall also be exercised to avoid plugging by paint or other dirt accumulation of safety relief device channels or other parts which could interfere with the functioning of the device. Only qualified personnel shall be allowed to service safety relief devices.

(b) Each time a compressed gas cylinder is received at a point for refilling, all safety relief devices shall be examined externally for corrosion, damage, plugging of external safety relief device channels, and mechanical defects such as leakage or extrusion of fusible metal. If there is any doubt regarding the suitability of the safety relief device for service the cylinder shall not be filled until it is equipped with a suitable device.

[Order 73-5, § 296-24-93003, filed 5/9/73 and Order 73-4, § 296-24-93003, filed 5/7/73.]

WAC 296-24-935 Safety relief devices for cargo and portable tanks storing compressed gases.

[Order 73-5, § 296-24-935, filed 5/9/73 and Order 73-4, § 296-24-935, filed 5/7/73.]

WAC 296-24-93501 Definitions. (1) Cargo tank. A "cargo tank" means any container designed to be permanently attached to any motor vehicle or other highway vehicle and in which is to be transported any compressed gas. The term "cargo tank" shall not be construed to include any tank used solely for the purpose of supplying fuel for the propulsion of the vehicle or containers fabricated under specifications for cylinders.

(2) Portable tank. A "portable tank" means any container designed primarily to be temporarily attached to a motor vehicle, other vehicle, railroad car other than tank car, or marine vessel, and equipped with skids, mountings, or accessories to facilitate handling of the container by mechanical means, in which is to be transported any compressed gas. The term "portable tank" shall not be construed to include any cargo tank, any tank car tank or any tank of the DOT-106A and DOT-110A-W type.

(3) Safety relief device. A "safety relief device" means a device intended to prevent rupture of a container under certain conditions of exposure.

(4) Safety relief valve. A "safety relief valve" means a safety relief device containing an operating part that is held normally in a position closing the safety relief device channel by spring force and is intended to open and to close at predetermined pressures.

(5) Set pressure. The "set pressure" of a safety relief valve is the pressure marked on the valve and at which the valve is set to start-to-discharge.

(6) Start-to-discharge pressure. The "start-to-discharge pressure" of a safety relief valve is the pressure at which the first bubble appears through a water seal of not over 4 inches on the outlet of the valve.

Note: When the nature of the service requires the use of a metal-to-metal seat safety relief, valve, with or without secondary sealing means, the start-to-discharge pressure may be considered the pressure at which an audible discharge occurs.

(7) Resealing pressure. The "resealing pressure" of a safety relief valve is the pressure at which leakage ceases through a water seal of not over 4 inches on the outlet of the valve.

(8) Flow capacity. The "flow capacity" of a safety relief device is the capacity in cubic feet per minute of free air discharged at the required flow rating pressure.

(9) Flow rating pressure. The "flow rating pressure" means the pressure at which a safety relief device is rated for capacity.

(10) Free air or free gas. "Free air" or "free gas" means air or gas measured at a pressure of 14.7 pounds per square inch absolute and a temperature of 60°F.

(11) Frangible disc. A "frangible disc" means a safety relief device in the form of a disc, usually of metal, which is so held as to close the safety relief device channel under normal conditions. The disc is intended to burst at a predetermined pressure to permit the escape of gas.

(12) Fusible plug. A "fusible plug" means a safety relief device in the form of a plug of suitable low-melting material, usually a metal alloy, which closes the safety relief device channel under normal conditions and is intended to yield or melt at a predetermined temperature to permit the escape of gas.

(13) DOT design pressure. The "DOT design pressure" is identical to the term "maximum allowable working pressure" as used in the "code" and is the maximum gage pressure at the top of the tank in its operating position. To determine the minimum permissible thickness of physical characteristics of the different parts of the vessel, the static head of the lading shall be added to the DOT design pressure to determine the thickness of any specific part of the vessel. If vacuum insulation is used, the liquid container shall be designed for a pressure of 15 p.s.i. more than DOT design pressure, plus static head of the lading.

EXCEPTION: For containers constructed in accordance with paragraph U-68 or U-69 of section VIII of the ASME Boiler and Pressure Vessel Code, 1949 Edition, the maximum allowable working pressure for the purpose of these standards is considered to be 125 percent of the design pressure as provided in 49 CFR 173.315 of DOT regulations.

(14) Code. "Code" is defined as paragraph U-68, U-69, U-200, or U-201 of section VIII of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers, 1949 Edition, or section VIII of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers, 1950, 1952, 1956, 1959, and 1962 Editions; or the Code for Unfired Pressure Vessels for Petroleum Liquids and Gases of the American Petroleum Institute and

the American Society of Mechanical Engineers (API-ASME), 1951 Edition.

(15) DOT regulations. The "DOT regulations" refers to department of transportation regulations for transportation of explosives and other dangerous articles by land and water in rail freight, express and baggage services and by motor vehicle (highway) and water, including specifications for shipping containers, Code of Federal Regulations, Title 49, Parts 171 to 178.

[Order 73-5, § 296-24-93501, filed 5/9/73 and Order 73-4, § 296-24-93501, filed 5/7/73.]

WAC 296-24-93503 General requirements. (1) Application. See WAC 296-24-93003(1).

(2) Specifications and tests. All safety relief devices covered by these standards shall meet the design, construction, marking, and test specifications of the "Compressed Gas Association Safety Relief Device Standards Part 2-Cargo and Portable Tanks for Compressed Gases: S-1.2-1963."

(3) Specific requirements for safety relief devices.

(a) Each container shall be provided with one or more safety relief devices which, unless otherwise specified, shall be safety relief valves of the spring-loaded type.

(b) Safety relief valves shall be set to start-to-discharge at a pressure not in excess of 110 percent of the DOT design pressure of the container nor less than the DOT design pressure of the container except as follows:

(i) If an overdesigned container is used, the set pressure of the safety relief valve may be between the minimum required DOT design pressure for the lading and 110 percent of the DOT design pressure of the container used.

(ii) For sulfur dioxide containers, a minimum set pressure of 120 and 110 p.s.i.g. is permitted for the 150 and 125 p.s.i.g. DOT design pressure containers, respectively.

(iii) For carbon dioxide (refrigerated), nitrous oxide (refrigerated), and pressurized liquid argon, nitrogen and oxygen, there shall be no minimum set pressure.

(iv) For butadiene, inhibited, and liquefied petroleum gas containers, a minimum set pressure of 90 percent of the minimum design pressure permitted for these ladings may be used.

(v) For containers constructed in accord with paragraph U-68 or U-69 of the Code 1949 Edition, the set pressure marked on the safety relief valve may be 125 percent of the original DOT design pressure of the container.

(c) Only replacement parts or assemblies provided by the manufacturer of the device shall be used unless the suitability of interchange is proved by adequate tests.

(d) Safety relief valves shall have direct communication with the vapor space of the container.

(e) Any portion of liquid piping or hose which at any time may be closed at each end must be provided with a safety relief device to prevent excessive pressure.

(f) The additional restrictions of this subdivision apply to safety relief devices on containers for carbon dioxide or nitrous oxide which are shipped in refrigerated and insulated containers. The maximum operating pressure in the container may be regulated by the use of one or more pressure controlling devices, which devices shall not be in lieu of the safety relief valve required in WAC 296-24-93503 (3)(a).

(g) All safety relief devices shall be so installed and located that the cooling effect of the contents will not prevent the effective operation of the device.

(h) In addition to the safety relief valves required by WAC 296-24-93503 (3)(a) each container for carbon dioxide may be equipped with one or more frangible disc safety relief devices of suitable design set to function at a pressure not exceeding two times the DOT design pressure of the container.

(i) Subject to conditions of 49 CFR 173.315(a)(1) (DOT regulations) for methyl chloride and sulfur dioxide optional portable tanks of 225 p.s.i.g. minimum DOT design pressure, one or more fusible plugs approved by the Bureau of Explosives, 50 "F" Street Northwest, Washington, D.C. 20001, may be used in lieu of safety relief valves of the spring-loaded type. If the container is over 30 inches long a safety relief device having the total required flow capacity must be at both ends.

(j) When storage containers for liquefied petroleum gas are permitted to be shipped in accordance with 49 CFR 173.315(j) (DOT regulations), they must be equipped with safety relief devices in compliance with the requirements for safety relief devices on above-ground containers as specified in the National Fire Protection Association Pamphlet No. 58-1969 "Standard for the Storage and Handling of Liquefied Petroleum Gases."

(k) When containers are filled by pumping equipment which has a discharge capacity in excess of the capacity of the container safety relief devices, and which is capable of producing pressures in excess of DOT design pressure of the container, precautions should be taken to prevent the development of pressures in the container in excess of 120 percent of its DOT design pressure. This may be done by providing additional capacity of the safety relief valves on the container, by providing a bypass on the pump discharge, or by any other suitable method.

(l) This additional requirement applies to safety relief devices on containers for liquefied hydrogen and pressurized liquid argon, nitrogen, and oxygen. The liquid container shall be protected by one or more safety relief valves and one or more frangible discs.

(m) Safety relief devices shall be arranged to discharge unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container. Safety relief devices shall be arranged to discharge upward except this is not required for carbon dioxide, nitrous oxide and pressurized liquid argon, nitrogen, and oxygen.

(n) No shutoff valves shall be installed between the safety relief devices and the container except, in cases where two or more safety relief devices are installed on the same container, a shutoff valve may be used where the arrangement of the shutoff valve or valves is such as always to insure full required capacity flow through at least one safety relief device.

(4) Maintenance requirements for safety relief devices. (a) Care shall be exercised to avoid damage to safety relief devices. Care shall also be exercised to avoid plugging by paint or other dirt accumulation of safety relief device channels or other parts which could interfere with the functioning of the device.

(b) Only qualified personnel shall be allowed to service safety relief devices. Any servicing or repairs which require

resetting of safety relief valves shall be done only by or after consultation with the valve manufacturer.

(c) Safety relief devices periodically shall be examined externally for corrosion damage, plugging of external safety relief device channels, and mechanical defects such as leakage or extrusion of fusible metal. Valves equipped with secondary resilient seals shall have the seals inspected periodically. If there is any doubt regarding the suitability of the safety relief device for service the container shall not be filled until it is equipped with a suitable safety relief device.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-93503, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-93503, filed 5/9/73 and Order 73-4, § 296-24-93503, filed 5/7/73.]

WAC 296-24-940 Air receivers.

[Order 73-5, § 296-24-940, filed 5/9/73 and Order 73-4, § 296-24-940, filed 5/7/73.]

WAC 296-24-94001 General requirements. (1) Application. These standards apply to compressed air receivers, and other equipment used in providing and utilizing compressed air for performing operations such as cleaning, drilling, hoisting, and chipping. On the other hand, however, this section does not deal with the special problems created by using compressed air to convey materials nor the problems created when working in compressed air as in tunnels and caissons. These standards are not intended to apply to compressed air machinery and equipment used on transportation vehicles such as steam railroad cars, electric railway cars, and automotive equipment.

(2) New and existing equipment.

(a) All new air receivers installed after the effective date of these standards shall be constructed in accordance with the 1968 Edition of the A.S.M.E. Boiler and Pressure Vessel Code, section VIII.

(b) All safety valves used shall be constructed, installed, and maintained in accordance with the A.S.M.E. Boiler and Pressure Vessel Code, section VIII edition 1968.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-94001, filed 7/20/94, effective 9/20/94; Order 73-5, § 296-24-94001, filed 5/9/73 and Order 73-4, § 296-24-94001, filed 5/7/73.]

WAC 296-24-94003 Installation and equipment requirements. (1) Installation. Air receivers shall be so installed that all drains, handholes, and manholes therein are easily accessible. Air receivers should be supported with sufficient clearance to permit a complete external inspection and to avoid corrosion of external surfaces. Under no circumstances shall an air receiver be buried underground or located in an inaccessible place. The receiver should be located as close to the compressor or after-cooler as is possible in order to keep the discharge pipe short.

(2) Drains and traps. All air receivers having an internal and external operating pressure exceeding 15 psi with no limitation on size, and air receivers having an inside diameter exceeding six inches, with no limitation on pressure, if subject to corrosion, shall be supplied with a drain pipe and valve at the lowest point in the vessel; or a pipe may be used extending inward from any other location to within one-quarter inch of the lowest point. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of oil and water in the receiver.

(3) Gages and valves.

(a) Every air receiver shall be equipped with an indicating pressure gage (so located as to be readily visible) and with one or more spring-loaded safety valves. The total relieving capacity of such safety valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.

(b) No valve of any type shall be placed between the air receiver and its safety valve or valves.

(c) Safety appliances, such as safety valves, indicating devices and controlling devices, shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means, including the elements.

(d) All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.

[Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-24-94003, filed 5/15/89, effective 6/30/89; Order 73-5, § 296-24-94003, filed 5/9/73 and Order 73-4, § 296-24-94003, filed 5/7/73.]

PART L
ELECTRICAL

WAC 296-24-956 Electrical. This section addresses electrical safety requirements that are necessary for the practical safeguarding of employees in their workplaces.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-956, filed 3/30/82.]

WAC 296-24-95601 Definitions applicable to WAC 296-24-956 through 296-24-985. Unless the context indicates otherwise, words used in this section shall have the meaning given.

(1) **Acceptable.** An installation or equipment is acceptable to the director of labor and industries, and approved within the meaning of this section:

(a) If it is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory; or

(b) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency, or by a state, municipal, or other local authority responsible for enforcing occupational safety provisions of the National Electrical Code, and found in compliance with the provisions of the National Electrical Code as applied in this section; or

(c) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by a particular customer, if it is determined to be safe for its intended use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director and his/her authorized representatives. Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(2) **Accepted.** An installation is "accepted" if it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes.

(3) **Accessible.** (As applied to wiring methods.) Capable of being removed or exposed without damaging the building structure of finish, or not permanently closed in by the structure or finish of the building. (See "concealed" and "exposed.")

(4) **Accessible.** (As applied to equipment.) Admitting close approach; not guarded by locked doors, elevation, or other effective means. (See "readily accessible.")

(5) **Ampacity.** Current-carrying capacity of electric conductors expressed in amperes.

(6) **Appliances.** Utilization equipment, generally other than industrial, normally built in standardized sizes or types, which is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc.

(7) **Approved.** Acceptable to the authority enforcing this section. The authority enforcing this section is the director of labor and industries. The definition of "acceptable" indicates what is acceptable to the director and therefore approved within the meaning of this section.

(8) **Approved for the purpose.** Approved for a specific purpose, environment, or application described in a particular standard requirement.

Suitability of equipment or materials for a specific purpose, environment or application may be determined by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation as part of its listing and labeling program. (See "labeled" or "listed.")

(9) **Armored cable.** Type AC armored cable is a fabricated assembly of insulated conductors in a flexible metallic enclosure.

(10) **Askarel.** A generic term for a group of nonflammable synthetic chlorinated hydrocarbons used as electrical insulating media. Askarels of various compositional types are used. Under arcing conditions the gases produced, while consisting predominantly of noncombustible hydrogen chloride, can include varying amounts of combustible gases depending upon the askarel type.

(11) **Attachment plug (plug cap) (cap).** A device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

(12) **Automatic.** Self-acting, operating by its own mechanism when actuated by some impersonal influence, as, for example, a change in current strength, pressure, temperature, or mechanical configuration.

(13) **Bare conductor, see "conductor."**

(14) **Bonding.** The permanent joining of metallic parts to form an electrically conductive path which will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

(15) **Bonding jumper.** A reliable conductor to assure the required electrical conductivity between metal parts required to be electrically connected.

(16) **Branch circuit.** The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s).

(17) **Building.** A structure which stands alone or which is cut off from adjoining structures by fire walls with all openings therein protected by approved fire doors.

(18) **Cabinet.** An enclosure designed either for surface or flush mounting, and provided with a frame, mat, or trim in which a swinging door or doors are or may be hung.

(19) **Cable tray system.** A cable tray system is a unit or assembly of units or sections, and associated fittings, made of metal or other noncombustible materials forming a rigid structural system used to support cables. Cable tray systems include ladders, troughs, channels, solid bottom trays, and other similar structures.

(20) **Cablebus.** Cablebus is an approved assembly of insulated conductors with fittings and conductor terminations in a completely enclosed, ventilated, protective metal housing.

(21) **Center pivot irrigation machine.** A center pivot irrigation machine is a multimotored irrigation machine which revolves around a central pivot and employs alignment switches or similar devices to control individual motors.

(22) **Certified.** Equipment is "certified" if it (a) has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or (b) is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and (c) it bears a label, tag, or other record of certification.

(23) **Circuit breaker.**

(a) **(600 volts nominal, or less.)** A device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without injury to itself when properly applied within its rating.

(b) **(Over 600 volts, nominal.)** A switching device capable of making, carrying, and breaking currents under normal circuit conditions, and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions, such as those of short circuit.

(24) **Class I locations.** Class I locations are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitible mixtures. Class I locations include the following:

(a) **Class I, Division 1.** A Class I, Division 1 location is a location:

(i) In which hazardous concentrations of flammable gases or vapors may exist under normal operating conditions; or

(ii) In which hazardous concentrations of such gases or vapors may exist frequently because of repair or maintenance operations or because of leakage; or

(iii) In which breakdown or faulty operation of equipment or processes might release hazardous concentrations of flammable gases or vapors, and might also cause simultaneous failure of electric equipment.

Note: This classification usually includes locations where volatile flammable liquids or liquefied flammable gases are transferred from one container to another; interiors of spray booths and areas in the vicinity of spraying and painting operations where volatile flammable solvents are used; locations containing open tanks or vats of volatile flammable liquids; drying rooms or compartments for the evaporation of flammable solvents; locations containing fat and oil extraction equipment using

volatile flammable solvents; portions of cleaning and dyeing plants where flammable liquids are used; gas generator rooms and other portions of gas manufacturing plants where flammable gas may escape; inadequately ventilated pump rooms for flammable gas or for volatile flammable liquids; the interiors of refrigerators and freezers in which volatile flammable materials are stored in open, lightly stoppered, or easily ruptured containers; and all other locations where ignitible concentrations of flammable vapors or gases are likely to occur in the course of normal operations.

(b) **Class I, Division 2.** A Class I, Division 2 location is a location:

(i) In which volatile flammable liquids or flammable gases are handled, processed, or used, but in which the hazardous liquids, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in case of abnormal operation of equipment; or

(ii) In which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operations of the ventilating equipment; or

(iii) That is adjacent to a Class I, Division 1 location, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

Note: This classification usually includes locations where volatile flammable liquids or flammable gases or vapors are used, but which would become hazardous only in case of an accident or of some unusual operating condition. The quantity of flammable material that might escape in case of accident, the adequacy of ventilating equipment, the total area involved, and the record of the industry or business with respect to explosions or fires are all factors that merit consideration in determining the classification and extent of each location.

Piping without valves, checks, meters, and similar devices would not ordinarily introduce a hazardous condition even though used for flammable liquids or gases. Locations used for the storage of flammable liquids or a liquefied or compressed gases in sealed containers would not normally be considered hazardous unless also subject to other hazardous conditions.

Electrical conduits and their associated enclosures separated from process fluids by a single seal or barrier are classed as a Division 2 location if the outside of the conduit and enclosures is a nonhazardous location.

(25) **Class II locations.** Class II locations are those that are hazardous because of the presence of combustible dust. Class II locations include the following:

(a) **Class II, Division 1.** A Class II, Division 1 location is a location:

(i) In which combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosives or ignitible mixtures; or

(ii) Where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitible mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, operation of protection devices, or from other causes; or

(iii) In which combustible dusts of an electrically conductive nature may be present.

Note: This classification may include areas of grain handling and processing plants, starch plants, sugar-pulverizing plants, malting plants, hay-grinding plants, coal pulverizing plants, areas where metal dusts and powders are produced or processed, and other similar locations which contain dust producing machinery and equipment (except where the equipment is dust-tight or vented to the outside). These areas would have combustible dust in the air, under normal operating conditions, in quantities sufficient to produce explosive or ignitible mixtures. Combustible dusts which are electrically nonconductive include dusts produced in the handling and processing of grain and grain products, pulverized sugar and cocoa, dried egg and milk powders, pulverized spices, starch and pastes, potato and woodflour, oil meal from beans and seed, dried hay, and other organic materials which may produce combustible dusts when processed or handled. Dusts containing magnesium or aluminum are particularly hazardous and the use of extreme caution is necessary to avoid ignition and explosion.

(b) **Class II, Division 2.** A Class II, Division 2 location is a location in which:

(i) Combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitible mixtures; and dust accumulations are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus; or

(ii) Dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment, and dust accumulations resulting therefrom may be ignitible by abnormal operation or failure of electrical equipment or other apparatus.

Note: This classification includes locations where dangerous concentrations of suspended dust would not be likely but where dust accumulations might form on or in the vicinity of electric equipment. These areas may contain equipment from which appreciable quantities of dust would escape under abnormal operating conditions or be adjacent to a Class II Division 1 location, as described above, into which an explosive or ignitible concentration of dust may be put into suspension under abnormal operating conditions.

(26) **Class III locations.** Class III locations are those that are hazardous because of the presence of easily ignitible fibers or flyings but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. Class III locations include the following:

(a) **Class III, Division 1.** A Class III, Division 1 location is a location in which easily ignitible fibers or materials producing combustible flyings are handled, manufactured, or used.

Note: Such locations usually include some parts of rayon, cotton, and other textile mills; combustible fiber manufacturing and processing plants; cotton gins and cottonseed mills; flax-processing plants; clothing manufacturing plants; woodworking plants, and establishments; and industries involving similar hazardous processes or conditions.

Easily ignitible fibers and flyings include rayon, cotton (including cotton linters and cotton waste), sisal or henequen, istle, jute, hemp, tow, cocoa fiber, oakum, baled waste kapok, Spanish moss, excelsior, and other materials of similar nature.

(b) **Class III, Division 2.** A Class III, Division 2 location is a location in which easily ignitible fibers are stored or handled, except in process of manufacture.

(27) **Collector ring.** A collector ring is an assembly of slip rings for transferring electrical energy from a stationary to a rotating member.

(28) **Concealed.** Rendered inaccessible by the structure or finish of the building. Wires in concealed raceways are considered concealed, even though they may become accessible by withdrawing them. (See "accessible. (As applied to wiring methods.")

(29) **Conductor.**

(a) **Bare.** A conductor having no covering or electrical insulation whatsoever.

(b) **Covered.** A conductor encased within material of composition or thickness that is not recognized as electrical insulation.

(c) **Insulated.** A conductor encased within material of composition and thickness that is recognized as electrical insulation.

(30) **Conduit body.** A separate portion of a conduit or tubing system that provides access through a removable cover(s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system. Boxes such as FS and FD or larger cast or sheet metal boxes are not classified as conduit bodies.

(31) **Controller.** A device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

(32) **Cooking unit, counter-mounted.** A cooking appliance designed for mounting in or on a counter and consisting of one or more heating elements, internal wiring, and built-in or separately mountable controls. (See "oven, wall-mounted.")

(33) **Covered conductor.** See "conductor."

(34) **Cutout.** (Over 600 volts, nominal.) An assembly of a fuse support with either a fuseholder, fuse carrier, or disconnecting blade. The fuseholder or fuse carrier may include a conducting element (fuse link), or may act as the disconnecting blade by the inclusion of an nonfusible member.

(35) **Cutout box.** An enclosure designed for surface mounting and having swinging doors or covers secured directly to and telescoping with the walls of the box proper. (See "cabinet.")

(36) **Damp location.** See "location."

(37) **Dead front.** Without live parts exposed to a person on the operating side of the equipment.

(38) **Device.** A unit of an electrical system which is intended to carry but not utilize electric energy.

(39) **Dielectric heating.** Dielectric heating is the heating of a nominally insulating material due to its own dielectric losses when the materials is placed in a varying electric filed.

(40) **Disconnecting means.** A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

(41) **Disconnecting (or isolating) switch.** (Over 600 volts, nominal.) A mechanical switching device used for isolating a circuit or equipment from a source of power.

(42) **Dry location.** See "location."

(43) **Electric sign.** A fixed, stationary, or portable self-contained, electrically illuminated utilization equipment with words or symbols designed to convey information or attract attention.

(44) **Enclosed.** Surrounded by a case, housing, fence or walls which will prevent persons from accidentally contacting energized parts.

(45) **Enclosure.** The case or housing of apparatus, or the fence or walls surrounding an installation to prevent personnel from accidentally contacting energized parts, or to protect the equipment from physical damage.

(46) **Equipment.** A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electrical installation.

(47) **Equipment grounding conductor.** See "grounding conductor, equipment."

(48) **Explosion-proof apparatus.** Apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such an external temperature that it will not ignite a surrounding flammable atmosphere.

(49) **Exposed.** (As applied to live parts.) Capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated. (See "accessible" and "concealed.")

(50) **Exposed.** (As applied to wiring methods.) On or attached to the surface or behind panels designed to allow access. (See "accessible. (As applied to wiring methods.")

(51) **Exposed.** (For the purpose of WAC 296-24-95615(5), communications systems.) Where the circuit is in such a position that in case of failure of supports or insulation, contact with another circuit may result.

(52) **Externally operable.** Capable of being operated without exposing the operator to contact with live parts.

(53) **Feeder.** All circuit conductors between the service equipment, or the generator switchboard of an isolated plant, and the final branch-circuit overcurrent device.

(54) **Fitting.** An accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

(55) **Fuse.** (Over 600 volts, nominal.) An overcurrent protective device with a circuit opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit.

(56) **Ground.** A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

(57) **Grounded.** Connected to earth or to some conducting body that serves in place of the earth.

(58) **Grounded, effectively.** (Over 600 volts, nominal.) Permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient ampacity that ground fault current which may occur cannot build up to voltages dangerous to personnel.

(59) **Grounded conductor.** A system or circuit conductor that is intentionally grounded.

(60) **Grounding conductor.** A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

(61) **Grounding conductor, equipment.** The conductor used to connect the noncurrent-carrying metal parts of equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or at the source of a separately derived system.

(62) **Grounding electrode conductor.** The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or at the source of a separately derived system.

(63) **Ground-fault circuit-interrupter.** A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

(64) **Guarded.** Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.

(65) **Health care facilities.** Buildings or portions of buildings and mobile homes that contain, but are not limited to, hospitals, nursing homes, extended care facilities, clinics, and medical and dental offices, whether fixed or mobile.

(66) **Heating equipment.** For the purposes of WAC 296-24-95611(7), the term "heating equipment" includes any equipment used for heating purposes if heat is generated by induction or dielectric methods.

(67) **Hoistway.** Any shaftway, hatchway, well hole, or other vertical opening or space in which an elevator or dumbwaiter is designed to operate.

(68) **Identified.** Identified, as used in reference to a conductor or its terminal, means that such conductor or terminal can be readily recognized as grounded.

(69) **Induction heating.** Induction heating is the heating of a nominally conductive material due to its own I^2R losses when the material is placed in a varying electromagnetic field.

(70) **Insulated conductor.** See "conductor."

(71) **Interrupter switch.** (Over 600 volts, nominal.) A switch capable of making, carrying, and interrupting specified currents.

(72) **Irrigation machine.** An irrigation machine is an electrically driven or controlled machine, with one or more motors, not hand portable, and used primarily to transport and distribute water for agricultural purposes.

(73) **Isolated.** Not readily accessible to persons unless special means for access are used.

(74) **Isolated power system.** A system comprising an isolating transformer or its equivalent, a line isolation monitor, and its ungrounded circuit conductors.

(75) **Labeled.** Equipment is "labeled" if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which, (a) makes periodic inspections of the production of such equipment, and (b) whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.

(76) **Lighting outlet.** An outlet intended for the direct connection of a lampholder, a lighting fixture, or a pendant cord terminating in a lampholder.

(77) **Line-clearance tree trimming.** The pruning, trimming, repairing, maintaining, removing, or clearing of trees or cutting of brush that is within 10 feet of electric supply lines and equipment.

(78) **Listed.** Equipment is "listed" if it is of a kind mentioned in a list which, (a) is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment, and (b) states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

(79) **Location.**

(a) **Damp location.** Partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns, and some cold-storage warehouses.

(b) **Dry location.** A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.

(c) **Wet location.** Installations underground or in concrete slabs or masonry in direct contact with the earth, and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather and unprotected.

(80) **Medium voltage cable.** Type MV medium voltage cable is a single or multiconductor solid dielectric insulated cable rated 2000 volts or higher.

(81) **Metal-clad cable.** Type MC cable is a factory assembly of one or more conductors, each individually insulated and enclosed in a metallic sheath of interlocking tape, or a smooth or corrugated tube.

(82) **Mineral-insulated metal-sheathed cable.** Type MI mineral-insulated metal-sheathed cable is a factory assembly of one or more conductors insulated with a highly compressed refractory mineral insulation and enclosed in a liquidtight and gastight continuous copper sheath.

(83) **Mobile x-ray.** X-ray equipment mounted on a permanent base with wheels and/or casters for moving while completely assembled.

(84) **Nonmetallic-sheathed cable.** Nonmetallic-sheathed cable is a factory assembly of two or more insulated conductors having an outer sheath of moisture resistant, flame-retardant, nonmetallic material. Nonmetallic sheathed cable is manufactured in the following types:

(a) **Type NM.** The overall covering has a flame-retardant and moisture-resistant finish.

(b) **Type NMC.** The overall covering is flame-retardant, moisture-resistant, fungus-resistant, and corrosion-resistant.

(85) **Oil (filled) cutout.** (Over 600 volts, nominal.) A cutout in which all or part of the fuse support and its fuse link or disconnecting blade are mounted in oil with complete immersion of the contacts and the fusible portion of the conducting element (fuse link), so that arc interruption by severing of the fuse link or by opening of the contacts will occur under oil.

(86) **Open wiring on insulators.** Open wiring on insulators is an exposed wiring method using cleats, knobs,

tubes, and flexible tubing for the protection and support of single insulated conductors run in or on buildings, and not concealed by the building structure.

(87) **Outlet.** A point on the wiring system at which current is taken to supply utilization equipment.

(88) **Outline lighting.** An arrangement of incandescent lamps or electric discharge tubing to outline or call attention to certain features such as the shape of a building or the decoration of a window.

(89) **Oven, wall-mounted.** An oven for cooking purposes designed for mounting in or on a wall or other surface and consisting of one or more heating elements, internal wiring, and built-in or separately mountable controls. (See "cooking unit, counter-mounted.")

(90) **Overcurrent.** Any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload (see definition), short circuit, or ground fault. A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Hence the rules for overcurrent protection are specific for particular situations.

(91) **Overload.** Operation of equipment in excess of normal, full load rating, or of a conductor in excess of rated ampacity which, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload. (See "overcurrent.")

(92) **Panelboard.** A single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent devices, and with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front. (See "switchboard.")

(93) **Permanently installed decorative fountains and reflection pools.** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage and are served by electrical circuits of any nature. These units are primarily constructed for their aesthetic value and not intended for swimming or wading.

(94) **Permanently installed swimming pools, wading and therapeutic pools.** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage whether or not served by electrical circuits of any nature.

(95) **Portable x-ray.** X-ray equipment designed to be hand-carried.

(96) **Power and control tray cable.** Type TC power and control tray cable is a factory assembly of two or more insulated conductors, with or without associated bare or covered grounding conductors under a nonmetallic sheath, approved for installation in cable trays, in raceways, or where supported by a messenger wire.

(97) **Power fuse.** (Over 600 volts, nominal.) See "fuse."

(98) **Power-limited tray cable.** Type PLTC nonmetallic-sheathed power limited tray cable is a factory assembly of two or more insulated conductors under a nonmetallic jacket.

(99) **Power outlet.** An enclosed assembly which may include receptacles, circuit breakers, fuseholders, fused switches, buses and watt-hour meter mounting means; intended to supply and control power to mobile homes, recreational vehicles or boats, or to serve as a means for distributing power required to operate mobile or temporarily installed equipment.

(100) **Premises wiring system.** That interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all of its associated hardware, fittings, and wiring devices, both permanently and temporarily installed, which extends from the load end of the service drop, or load end of the service lateral conductors to the outlet(s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers, and similar equipment.

(101) **Qualified person.** One familiar with the construction and operation of the equipment and the hazards involved.

Note 1: Whether an employee is considered to be a "qualified person" will depend upon various circumstances in the workplace. It is possible and, in fact, likely for an individual to be considered "qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. (See WAC 296-24-970 for training requirements that specifically apply to qualified persons.)

Note 2: An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a qualified person is considered to be a qualified person for the performance of those duties.

(102) **Raceway.** A channel designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this part. Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible metal conduit, flexible metallic tubing, flexible metal conduit, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

(103) **Readily accessible.** Capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc. (See "accessible.")

(104) **Receptacle.** A receptacle is a contact device installed at the outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.

(105) **Receptacle outlet.** An outlet where one or more receptacles are installed.

(106) **Remote-control circuit.** Any electric circuit that controls any other circuit through a relay or an equivalent device.

(107) **Sealable equipment.** Equipment enclosed in a case or cabinet that is provided with a means of sealing or locking so that live parts cannot be made accessible without opening the enclosure. The equipment may or may not be operable without opening the enclosure.

(108) **Separately derived system.** A premises wiring system whose power is derived from generator, transformer,

or converter winding and has no direct electrical connection, including a solidly connected grounded circuit conductor, to supply conductors originating in another system.

(109) **Service.** The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

(110) **Service cable.** Service conductors made up in the form of a cable.

(111) **Service conductors.** The supply conductors that extend from the street main or from transformers to the service equipment of the premises supplied.

(112) **Service drop.** The overhead service conductors from the last pole or other aerial support to and including the splices, if any, connecting to the service-entrance conductors at the building or other structure.

(113) **Service-entrance cable.** Service-entrance cable is a single conductor or multiconductor assembly provided with or without an overall covering, primarily used for services and of the following types:

(a) *Type SE,* having a flame-retardant, moisture-resistant covering, but not required to have inherent protection against mechanical abuse.

(b) *Type USE,* recognized for underground use, having a moisture-resistant covering, but not required to have a flame-retardant covering or inherent protection against mechanical abuse. Single-conductor cables having an insulation specifically approved for the purpose do not require an outer covering.

(114) **Service-entrance conductors, overhead system.** The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to the service drop.

(115) **Service entrance conductors, underground system.** The service conductors between the terminals of the service equipment and the point of connection to the service lateral. Where service equipment is located outside the building walls, there may be no service-entrance conductors, or they may be entirely outside the building.

(116) **Service equipment.** The necessary equipment, usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the point of entrance of supply conductors to a building or other structure, or an otherwise defined area, and intended to constitute the main control and means of cutoff of the supply.

(117) **Service raceway.** The raceway that encloses the service-entrance conductors.

(118) **Shielded nonmetallic-sheathed cable.** Type SNM, shielded nonmetallic-sheathed cable is a factory assembly of two or more insulated conductors in an extruded core of moisture-resistant, flame-resistant nonmetallic material, covered with an overlapping spiral metal tape and wire shield and jacketed with an extruded moisture-resistant, flame-resistant, oil-resistant, corrosion-resistant, fungus-resistant, and sunlight-resistant nonmetallic material.

(119) **Show window.** Any window used or designed to be used for the display of goods or advertising material, whether it is fully or partly enclosed or entirely open at the rear and whether or not it has a platform raised higher than the street floor level.

(120) **Sign.** See "electric sign."

(121) **Signaling circuit.** Any electric circuit that energizes signaling equipment.

(122) **Special permission.** The written consent of the authority having jurisdiction.

(123) **Storable swimming or wading pool.** A pool with a maximum dimension of fifteen feet and a maximum wall height of three feet and is so constructed that it may be readily disassembled for storage and reassembled to its original integrity.

(124) **Switchboard.** A large single panel, frame, or assembly of panels which have switches, buses, instruments, overcurrent and other protective devices mounted on the face or back or both. Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets. (See "panelboard.")

(125) **Switches.**

(a) **General-use switch.** A switch intended for use in general distribution and branch circuits. It is rated in amperes, and it is capable of interrupting its rated current at its rated voltage.

(b) **General-use snap switch.** A form of general-use switch so constructed that it can be installed in flush device boxes or on outlet box covers, or otherwise used in conjunction with wiring systems recognized by this part.

(c) **Isolating switch.** A switch intended for isolating an electric circuit from the source of power. It has no interrupting rating, and it is intended to be operated only after the circuit has been opened by some other means.

(d) **Motor-circuit switch.** A switch, rated in horsepower, capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.

(126) **Switching devices.** (Over 600 volts, nominal.) Devices designed to close and/or open one or more electric circuits. Included in this category are circuit breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.

(127) **Transportable x-ray.** X-ray equipment installed in a vehicle or that may readily be disassembled for transport in a vehicle.

(128) **Utilization equipment.** Utilization equipment means equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar useful purpose.

(129) **Utilization system.** A utilization system is a system which provides electric power and light for employee workplaces, and includes the premises wiring system and utilization equipment.

(130) **Ventilated.** Provided with a means to permit circulation of air sufficient to remove an excess of heat, fumes, or vapors.

(131) **Volatile flammable liquid.** A flammable liquid having a flash point below 38 degrees C (100 degrees F) or whose temperature is above its flash point.

(132) **Voltage (of a circuit).** The greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned.

(133) **Voltage, nominal.** A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (as 120/240, 480Y/277, 600, etc.). The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

(134) **Voltage to ground.** For grounded circuits, the voltage between the given conductor and that point or conductor of the circuit that is grounded; for undergrounded circuits, the greatest voltage between the given conductor and any other conductor of the circuit.

(135) **Watertight.** So constructed that moisture will not enter the enclosure.

(136) **Weatherproof.** So constructed or protected that exposure to the weather will not interfere with successful operation. Rainproof, raintight, or watertight equipment can fulfill the requirements for weatherproof where varying weather conditions other than wetness, such as snow, ice, dust, or temperature extremes, are not a factor.

(137) **Wet location.** See "location."

(138) **Wireways.** Wireways are sheet-metal troughs with hinged or removable covers for housing and protecting electric wires and cable and in which conductors are laid in place after the wireway has been installed as a complete system.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-95601, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-95601, filed 11/22/91, effective 12/24/91; 88-23-054 (Order 88-25), § 296-24-95601, filed 11/14/88; 87-24-051 (Order 87-24), § 296-24-95601, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95601, filed 3/30/82.]

WAC 296-24-95603 Electric utilization systems. (1) **Scope.**

(a) **Covered.** The provisions of WAC 296-24-95603 through 296-24-985 cover electrical installations and utilization equipment installed or used within or on buildings, structures, and other premises including:

(i) Yards;

(ii) Carnivals;

(iii) Parking and other lots;

(iv) Mobile homes;

(v) Recreational vehicles;

(vi) Industrial substations under 750 volts. Chapter 296-44 WAC, Safety standards—Electrical Construction Code, shall apply to industrial substations of 750 volts or more;

(vii) Conductors that connect the installations to a supply of electricity; and

(viii) Other outside conductors on the premises.

(b) **Not covered.** The provisions of WAC 296-24-95603 through 296-24-985 do not cover:

(i) Installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles.

(ii) Installations underground in mines.

(iii) Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.

(iv) Installations of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.

(v) Installations under the exclusive control of electric utilities for the purpose of communication or metering; or for the generation, control, transformation, transmission, and distribution of electric energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(2) **Extent of application.**

(a) The requirements contained in the sections listed below shall apply to all electrical installations and utilization equipment, regardless of when they were designed or installed:

Sections:

WAC 296-24-95605	(2)	Examination, installation, and use of equipment.
"	(3)	Splices.
"	(4)	Arcing parts.
"	(5)	Marking.
"	(6)	Identification of disconnecting means.
"	(7)(b)	Guarding of live parts.
WAC 296-24-95607	(5)(a)(i)	Protection of conductors and equipment.
"	(5)(a)(iv)	Location in or on premises.
"	(5)(a)(v)	Arcing or suddenly moving parts.
"	(6)(a)(ii)	2-Wire DC systems to be grounded.
"	(6)(a)(iii) and (iv)	AC systems to be grounded.
"	(6)(a)(v)	AC systems 50 to 1000 volts not required to be grounded.
"	(6)(c)	Grounding connections.
"	(6)(d)	Grounding path.
WAC 296-24-95607	(6)(e)(iv)(A) through (D)	Fixed equipment required to be grounded.
"	(6)(e)(v)	Grounding of equipment connected by cord and plug.
"	(6)(e)(vi)	Grounding or nonelectrical equipment.
"	(6)(f)(i)	Methods of grounding fixed equipment.
WAC 296-24-95609	(7)(a)(i) and (ii)	Flexible cords and cables, uses.
"	(7)(a)(iii)	Flexible cords and cables prohibited.
"	(7)(b)(ii)	Flexible cords and cables, splices.
"	(7)(b)(iii)	Pull at joints and terminals of flexible cords and cables.
WAC 296-24-95613		Hazardous (classified) locations.

(b) Every electric utilization system and all utilization equipment installed after March 15, 1972, and every major replacement, modification, repair, or rehabilitation, after March 15, 1972, of any part of any electric utilization system or utilization equipment installed before March 15, 1972, shall comply with the provisions of WAC 296-24-956 through 296-24-985.

Note: "Major replacements, modifications, repairs, or rehabilitations" include work similar to that involved when a new building or facility is built, a new wing is added, or an entire floor is renovated.

(c) The following provisions apply to electric utilization systems and utilization equipment installed after April 16, 1981:

WAC 296-24-95605	(8)(d)(i) and (ii)	Entrance and access to work space (over 600 volts).
WAC 296-24-95607	(5)(a)(vi)(B)	Circuit breakers operated vertically.
" "	(5)(a)(vi)(C)	Circuit breakers used as switches.
" "	(6)(g)(ii)	Grounding of systems of 1000 volts or more supplying portable or mobile equipment.
WAC 296-24-95609	(10)(f)(ii)(B)	Switching series capacitors over 600 volts.
WAC 296-24-95611	(3)(b)	Warning signs for elevators and escalators.
" "	(9)	Electrically controlled irrigation machines.
" "	(10)(e)	Ground-fault circuit interupters for fountains.
WAC 296-24-95615	(1)(a)(ii)	Physical protection of conductors over 600 volts.
" "	(3)(b)	Marking of Class 2 and Class 3 power supplies.
" "	(4)	Fire protective signaling circuits.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-95603, filed 11/22/91, effective 12/24/91; 87-24-051 (Order 87-24), § 296-24-95603, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95603, filed 3/30/82.]

WAC 296-24-95605 General requirements. (1) **Approval.** The conductors and equipment required or permitted by this section shall be acceptable only if approved.

(2) **Examination, installation, and use of equipment.**

(a) **Examination.** Electrical equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined using the following considerations:

(i) Suitability for installation and use in conformity with the provisions of this part. Suitability of equipment for an identified purpose may be evidenced by listing or labeling for that identified purpose.

(ii) Mechanical strength and durability, including, for parts designed to enclose and protect other equipment, the adequacy of the protection thus provided.

(iii) Electrical insulation.

(iv) Heating effects under conditions of use.

(v) Arcing effects.

(vi) Classification by type, size, voltage, current capacity, specific use.

(vii) Other factors which contribute to the practical safeguarding of employees using or likely to come in contact with the equipment.

(b) **Installation and use.** Listed or labeled equipment shall be used or installed in accordance with any instructions included in the listing or labeling.

(3) **Splices.** Conductors shall be spliced or joined with splicing devices suitable for the use or by brazing, welding, or soldering with a fusible metal or alloy. Soldered splices shall first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices and joints and the free ends of conductors shall be covered with an insulation equivalent to that of the conductors or with an insulating device suitable for the purpose.

(4) **Arcing parts.** Parts of electric equipment which in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.

(5) **Marking.** Electrical equipment may not be used unless the manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product may be identified is placed on the equipment. Other markings shall be provided giving voltage, current, wattage, or other ratings as necessary. The marking shall be of sufficient durability to withstand the environment involved.

(6) **Identification of disconnecting means and circuits.** Each disconnecting means required by this part for motors and appliances shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. Each service, feeder, and branch circuit, at its disconnecting means or overcurrent device, shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. These markings shall be of sufficient durability to withstand the environment involved.

(7) **600 volts, nominal, or less.**

(a) **Working space about electric equipment.** Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.

(i) **Working clearances.** Except as required or permitted elsewhere in this chapter, the dimension of the working space in the direction of access to live parts operating at 600 volts or less and likely to require examination, adjustment, servicing, or maintenance while alive may not be less than indicated in Table S-1. In addition to the dimensions shown in Table S-1, workspace may not be less than 30 inches wide in front of the electric equipment. Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. Concrete, brick, or tile walls are considered to be grounded. Working space is not required in back of assemblies such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

TABLE S-1—Working clearances

Nominal voltage to ground	Minimum clear distance for condition[2] (ft)		
	(a)	*(b)*	*(c)*
0-150	[1]3	[1]3	3
151-600	[1]3	3 1/2	4

[1] Minimum clear distances may be 2 feet 6 inches for installations built prior to effective date of this section.

[2] Conditions *(a), (b), (c),* are as follows: *(a)* Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. *(b)* Exposed live parts on one side and grounded parts on the other

side *(c)* Exposed live parts on both sides of the workspace (not guarded as provided in condition *(a)*) with the operator between.

(ii) **Clear spaces.** Working space required by this part may not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded.

(iii) **Access and entrance to working space.** At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment.

(iv) **Front working space.** Where there are live parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment may not be less than 3 feet.

(v) **Illumination.** Illumination shall be provided for all working spaces about service equipment, switchboards, panelboards, and motor control centers installed indoors.

(vi) **Headroom.** The minimum headroom of working spaces about service equipment, switchboards, panelboards, or motor control centers shall be 6 feet 3 inches.

Note: As used in this section, a motor control center is an assembly of one or more enclosed sections having a common power bus and principally containing motor control units.

(b) **Guarding of live parts.**

(i) Except as required or permitted elsewhere in this section, live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by approved cabinets or other forms of approved enclosures, or by any of the following means:

(A) By location in a room, vault, or similar enclosure that is accessible only to qualified persons.

(B) By suitable permanent, substantial partitions or screens so arranged that only qualified persons will have access to the space within reach of the live parts. Any openings in such partitions or screens shall be so sized and located that persons are not likely to come into accidental contact with live parts or to bring conducting objects into contact with them.

(C) By location on a suitable balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.

(D) By elevation of 8 feet or more above the floor or other working surface.

(ii) In locations where electric equipment would be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent such damage.

(iii) Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

(8) **Over 600 volts, nominal.**

(a) **General.** Conductors and equipment used on circuits exceeding 600 volts, nominal, shall comply with all applicable provisions of subsections (1) through (7) of this section and with the following provisions which supplement or modify those requirements. The provisions of (b), (c) and (d) of this subsection do not apply to equipment on the supply side of the service conductors.

(b) **Enclosure for electrical installations.** Electrical installations in a vault, room, closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by lock and key or other approved means, are considered to be accessible to qualified persons only. A wall, screen, or fence less than 8 feet in height is not considered to prevent access unless it has other features that provide a degree of isolation equivalent to an 8 foot fence. The entrances to all buildings, rooms, or enclosures containing exposed live parts or exposed conductors operating at over 600 volts, nominal, shall be kept locked or shall be under the observation of a qualified person at all times.

(i) **Installations accessible to qualified persons only.** Electrical installations having exposed live parts shall be accessible to qualified persons only and shall comply with the applicable provisions of (c) of this subsection.

(ii) **Installations accessible to unqualified persons.** Electrical installations that are open to unqualified persons shall be made with metal-enclosed equipment or shall be enclosed in a vault or in an area, access to which is controlled by a lock. If metal-enclosed equipment is installed so that the bottom of the enclosure is less than 8 feet above the floor, the door or cover shall be kept locked. Metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes, and other similar associated equipment shall be marked with appropriate caution signs. If equipment is exposed to physical damage from vehicular traffic, suitable guards shall be provided to prevent such damage. Ventilating or similar openings in metal-enclosed equipment shall be designed so that foreign objects inserted through these openings will be deflected from energized parts.

(c) **Workspace about equipment.** Sufficient space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment. Where energized parts are exposed, the minimum clear workspace may not be less than 6 feet 6 inches high (measured vertically from the floor or platform), or less than 3 feet wide (measured parallel to the equipment). The depth shall be as required in Table S-2. The workspace shall be adequate to permit at least a 90-degree opening of doors or hinged panels.

(i) **Working space.** The minimum clear working space in front of electric equipment such as switchboards, control panels, switches, circuit breakers, motor controllers, relays, and similar equipment may not be less than specified in Table S-2 unless otherwise specified in this part. Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. However, working space is not required in back of equipment such as deadfront switchboards or control assemblies where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back. Where rear access is required to work on deenergized parts on the back of enclosed equipment, a minimum working space of 30 inches horizontally shall be provided.

TABLE S-2—Minimum Depth of Clear Working Space in Front of Electric Equipment

Nominal voltage to ground	Conditions[2](ft)		
	(a)	*(b)*	*(c)*
601 to 2,500	3	4	5
2,501 to 9,000	4	5	6

9,001 to 25,000	5	6	9
25,001 to 75kV[1]	6	8	10
Above 75kV[1]	8	10	12

[1] Minimum depth of clear working space in front of electric equipment with a nominal voltage to ground above 25,000 volts may be the same as for 25,000 volts under conditions *(a), (b)* and *(c)* for installations built prior to April 16, 1981. (2) Conditions *(a), (b)* and *(c)* are as follows: *(a)* Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. *(b)* Exposed live parts on one side and grounded parts on the other side. Concrete, brick, or tile walls will be considered as grounded surfaces. *(c)* Exposed live parts on both sides of the workspace not guarded as provided in condition (a) with the operator between.

(ii) **Illumination.** Adequate illumination shall be provided for all working spaces about electric equipment. The lighting outlets shall be so arranged that persons changing lamps or making repairs on the lighting system will not be endangered by live parts or other equipment. The points of control shall be so located that persons are not likely to come in contact with any live part or moving part of the equipment while turning on the lights.

(iii) **Elevation of unguarded live parts.** Unguarded live parts above working space shall be maintained at elevations not less than specified in Table S-3.

TABLE S-3—Elevation of Unguarded Energized Parts Above Working Space

Nominal voltage between phases	Minimum elevation
601 to 7,500	*8 feet 6 inches.
7,501 to 35,000	9 feet.
Over 35kV	9 feet + 0.37 inches per kV above 35kV.

Note: Minimum elevation may be 8 feet 0 inches for installations built prior to April 16, 1981, if the nominal voltage between phases is in the range of 601-6600 volts.

(d) **Entrance and access to workspace.** (See WAC 296-24-95603 (2)(c).)

(i) At least one entrance not less than 24 inches wide and 6 feet 6 inches high shall be provided to give access to the working space about electric equipment. On switchboard and control panels exceeding 48 inches in width, there shall be one entrance at each end of such board where practicable. Where bare energized parts at any voltage or insulated energized parts above 600 volts are located adjacent to such entrance, they shall be suitably guarded.

(ii) Permanent ladders or stairways shall be provided to give safe access to the working space around electric equipment installed on platforms, balconies, mezzanine floors, or in attic or roof rooms or spaces.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-95605, filed 7/20/94, effective 9/20/94; 87-24-051 (Order 87-24), § 296-24-95605, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95605, filed 3/30/82.]

WAC 296-24-95607 Wiring design and protection.

(1) Use and identification of grounded and grounding conductors.

(a) **Identification of conductors.** A conductor used as a grounded conductor shall be identifiable and distinguishable from all other conductors. A conductor used as an equipment grounding conductor shall be identifiable and distinguishable from all other conductors.

(b) **Polarity of connections.** No grounded conductor may be attached to any terminal or lead so as to reverse designated polarity.

(c) **Use of grounding terminals and devices.** A grounding terminal or grounding-type device on a receptacle, cord connector, or attachment plug may not be used for purposes other than grounding.

(2) **Outlet devices.** Outlet devices shall have an ampere rating not less than the load to be served.

(3) **Outside conductors, 600 volts, nominal, or less.** Subdivisions (a), (b), (c) and (d) of this subsection apply to branch circuit, feeder, and service conductors rated 600 volts, nominal, or less and run outdoors as open conductors. Subdivision (e) of this subsection applies to lamps installed under such conductors.

(a) **Conductors on poles.** Conductors supported on poles shall provide a horizontal climbing space not less than the following:

(i) Power conductors below communication conductors—30 inches.

(ii) Power conductors alone or above communication conductors: 300 volts or less—24 inches; more than 300 volts—30 inches.

(iii) Communication conductors below power conductors with power conductors 300 volts or less—24 inches; more than 300 volts—30 inches.

(b) **Clearance from ground.** Open conductors shall conform to the following minimum clearances:

(i) 10 feet—above finished grade, sidewalks, or from any platform or projection from which they might be reached.

(ii) 12 feet—over areas subject to vehicular traffic other than truck traffic.

(iii) 15 feet—over areas other than those specified in item (b)(iv) of this subsection that are subject to truck traffic.

(iv) 18 feet—over public streets, alleys, roads, and driveways.

(c) **Clearance from building openings.** Conductors shall have a clearance of at least 3 feet from windows, doors, porches, fire escapes, or similar locations. Conductors run above the top level of a window are considered to be out of reach from that window and, therefore, do not have to be 3 feet away.

(d) **Clearance over roofs.** Conductors shall have a clearance of not less than 8 feet from the highest point of roofs over which they pass, except that:

(i) Where the voltage between conductors is 300 volts or less and the roof has a slope of not less than 4 inches in 12, the clearance from the roofs shall be at least 3 feet; or

(ii) Where the voltage between conductors is 300 volts or less and the conductors do not pass over more than 4 feet of the overhang portion of the roof and they are terminated at a through-the-roof raceway or approved support, the clearance from the roofs shall be at least 18 inches.

(e) **Location of outdoor lamps.** Lamps for outdoor lighting shall be located below all live conductors, transform-

ers, or other electric equipment, unless such equipment is controlled by a disconnecting means that can be locked in the open position or unless adequate clearances or other safeguards are provided for relamping operations.

(4) **Services.**

(a) **Disconnecting means.**

(i) **General.** Means shall be provided to disconnect all conductors in a building or other structure from the service-entrance conductors. The disconnecting means shall plainly indicate whether it is in the open or closed position and shall be installed at a readily accessible location nearest the point of entrance of the service-entrance conductors.

(ii) **Simultaneous opening of poles.** Each service disconnecting means shall simultaneously disconnect all ungrounded conductors.

(b) **Services over 600 volts, nominal.** The following additional requirements apply to services over 600 volts, nominal.

(i) **Guarding.** Service-entrance conductors installed as open wires shall be guarded to make them accessible only to qualified persons.

(ii) **Warning signs.** Signs warning of high voltage shall be posted where other than qualified employees might come in contact with live parts.

(5) **Overcurrent protection.**

(a) **600 volts, nominal, or less.** The following requirements apply to overcurrent protection of circuits rated 600 volts, nominal, or less.

(i) **Protection of conductors and equipment.** Conductors and equipment shall be protected from overcurrent in accordance with their ability to safely conduct current.

(ii) **Grounded conductors.** Except for motor running overload protection, overcurrent devices may not interrupt the continuity of the grounded conductor unless all conductors of the circuit are opened simultaneously.

(iii) **Disconnection of fuses and thermal cutouts.** Except for service fuses, all cartridge fuses which are accessible to other than qualified persons and all fuses and thermal cutouts on circuits over 150 volts to ground shall be provided with disconnecting means. This disconnecting means shall be installed so that the fuse or thermal cutout can be disconnected from its supply without disrupting service to equipment and circuits unrelated to those protected by the overcurrent device.

(iv) **Location in or on premises.** Overcurrent devices shall be readily accessible to each employee or authorized building management personnel. These overcurrent devices may not be located where they will be exposed to physical damage nor in the vicinity of easily ignitible material.

(v) **Arcing or suddenly moving parts.** Fuses and circuit breakers shall be so located or shielded that employees will not be burned or otherwise injured by their operation.

(vi) **Circuit breakers.**

(A) Circuit breakers shall clearly indicate whether they are in the open (off) or closed (on) position.

(B) Where circuit breaker handles on switchboards are operated vertically rather than horizontally or rotationally, the up position of the handle shall be the closed (on) position. (See WAC 296-24-95603 (2)(c).)

(C) If used as switches in 120-volt, fluorescent lighting circuits, circuit breakers shall be approved for the purpose and marked "SWD." (See WAC 296-24-95603 (2)(c).)

(b) **Over 600 volts, nominal.** Feeders and branch circuits over 600 volts, nominal, shall have short-circuit protection.

(6) **Grounding.** Subdivisions (a) through (g) of this subsection contain grounding requirements for systems, circuits, and equipment.

(a) **Systems to be grounded.** The following systems which supply premises wiring shall be grounded:

(i) All 3-wire DC systems shall have their neutral conductor grounded.

(ii) Two-wire DC systems operating at over 50 volts through 300 volts between conductors shall be grounded unless:

(A) They supply only industrial equipment in limited areas and are equipped with a ground detector; or

(B) They are rectifier-derived from an AC system complying with items (a)(iii), (a)(iv), and (a)(v) of this subsection; or

(C) They are fire-protective signaling circuits having a maximum current of 0.030 amperes.

(iii) AC circuits of less than 50 volts shall be grounded if they are installed as overhead conductors outside of buildings or if they are supplied by transformers and the transformer primary supply system is ungrounded or exceeds 150 volts to ground.

(iv) AC systems of 50 volts to 1000 volts shall be grounded under any of the following conditions, unless exempted by item (a)(v) of this subsection:

(A) If the system can be so grounded that the maximum voltage to ground on the ungrounded conductors does not exceed 150 volts;

(B) If the system is nominally rated 480Y/277 volt, 3-phase, 4-wire in which the neutral is used as a circuit conductor;

(C) If the system is nominally rated 240/120 volt, 3-phase, 4-wire in which the midpoint of one phase is used as a circuit conductor; or

(D) If a service conductor is uninsulated.

(v) AC systems of 50 volts to 1000 volts are not required to be grounded under any of the following conditions:

(A) If the system is used exclusively to supply industrial electric furnaces for melting, refining, tempering, and the like.

(B) If the system is separately derived and is used exclusively for rectifiers supplying only adjustable speed industrial drives.

(C) If the system is separately derived and is supplied by a transformer that has a primary voltage rating less than 1000 volts, provided all of the following conditions are met:

(I) The system is used exclusively for control circuits;

(II) The conditions of maintenance and supervision assure that only qualified persons will service the installation;

(III) Continuity of control power is required; and

(IV) Ground detectors are installed on the control system.

(D) If the system is an isolated power system that supplies circuits in health care facilities.

(b) **Conductors to be grounded.** For AC premises wiring systems the identified conductor shall be grounded.

(c) **Grounding connections.**

(i) For a grounded system, a grounding electrode conductor shall be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor shall be connected to the grounded circuit conductor on the supply side of the service disconnecting means, or on the supply side of the system disconnecting means or overcurrent devices if the system is separately derived.

(ii) For an ungrounded service-supplied system, the equipment grounding conductor shall be connected to the grounding electrode conductor at the service equipment. For an ungrounded separately derived system, the equipment grounding conductor shall be connected to the grounding electrode conductor at, or ahead of, the system disconnecting means or overcurrent devices.

(iii) On extensions of existing branch circuits which do not have an equipment grounding conductor, grounding-type receptacles may be grounded to a grounded cold water pipe near the equipment.

(d) **Grounding path.** The path to ground from circuits, equipment, and enclosures shall be permanent and continuous.

(e) **Supports, enclosures, and equipment to be grounded.**

(i) **Supports and enclosures for conductors.** Metal cable trays, metal raceways, and metal enclosures for conductors shall be grounded, except that:

(A) Metal enclosures such as sleeves that are used to protect cable assemblies from physical damage need not be grounded; or

(B) Metal enclosures for conductors added to existing installations of open wire, knob-and-tube wiring, and nonmetallic-sheathed cable need not be grounded if all of the following conditions are met:

(I) Runs are less than 25 feet;

(II) Enclosures are free from probable contact with ground, grounded metal, metal laths, or other conductive materials; and

(III) Enclosures are guarded against employee contact.

(ii) **Service equipment enclosures.** Metal enclosures for service equipment shall be grounded.

(iii) **Frames of ranges and clothes dryers.** Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and metal outlet or junction boxes which are part of the circuit for these appliances shall be grounded.

(iv) **Fixed equipment.** Exposed noncurrent-carrying metal parts of fixed equipment which may become energized shall be grounded under any of the following conditions:

(A) If within 8 feet vertically or 5 feet horizontally of ground or grounded metal objects and subject to employee contact.

(B) If located in a wet or damp location and not isolated.

(C) If in electrical contact with metal.

(D) If in a hazardous (classified) location.

(E) If supplied by a metal-clad, metal-sheathed, or grounded metal raceway wiring method.

(F) If equipment operates with any terminal at over 150 volts to the ground; however, the following need not be grounded:

(I) Enclosures for switches or circuit breakers used for other than service equipment and accessible to qualified persons only;

(II) Metal frames of electrically heated appliances which are permanently and effectively insulated from ground; and

(III) The cases of distribution apparatus such as transformers and capacitors mounted on wooden poles at a height exceeding 8 feet above ground or grade level.

(v) **Equipment connected by cord and plug.** Under any of the conditions described in subitems (e)(v)(A) through (e)(v)(C) of this subsection, exposed noncurrent-carrying metal parts of cord-connected and plug-connected equipment which may become energized shall be grounded.

(A) If in hazardous (classified) locations (see WAC 296-24-95613).

(B) If operated at over 150 volts to ground, except for guarded motors and metal frames of electrically heated appliances if the appliance frames are permanently and effectively insulated from ground.

(C) If the equipment is of the following types:

(I) Refrigerators, freezers, and air conditioners;

(II) Clothes-washing, clothes-drying and dishwashing machines, sump pumps, and electrical aquarium equipment;

(III) Hand-held motor-operated tools;

(IV) Motor-operated appliances of the following types: Hedge clippers, lawn mowers, snow blowers, and wet scrubbers;

(V) Cord-connected and plug-connected appliances used in damp or wet locations or by employees standing on the ground or on metal floors or working inside of metal tanks or boilers;

(VI) Portable and mobile x-ray and associated equipment;

(VII) Tools likely to be used in wet and conductive locations; and

(VIII) Portable hand lamps. Tools likely to be used in wet and conductive locations need not be grounded if supplied through an isolating transformer with an ungrounded secondary of not over 50 volts. Listed or labeled portable tools and appliances protected by an approved system of double insulation, or its equivalent, need not be grounded. If such a system is employed, the equipment shall be distinctively marked to indicate that the tool or appliance utilizes an approved system of double insulation.

(vi) **Nonelectrical equipment.** The metal parts of the following nonelectrical equipment shall be grounded: Frames and tracks of electrically operated cranes; frames of nonelectrically driven elevator cars to which electric conductors are attached; hand operated metal shifting ropes or cables of electric elevators, and metal partitions, grill work, and similar metal enclosures around equipment of over 750 volts between conductors.

(f) **Methods of grounding fixed equipment.**

(i) Noncurrent-carrying metal parts of fixed equipment, if required to be grounded by this section, shall be grounded by an equipment grounding conductor which is contained within the same raceway, cable, or cord, or runs with or encloses the circuit conductors. For DC circuits only, the

equipment grounding conductor may be run separately from the circuit conductors.

(ii) Electric equipment is considered to be effectively grounded if it is secured to, and in electrical contact with, a metal rack or structure that is provided for its support and the metal rack or structure is grounded by the method specified for the noncurrent-carrying metal parts of fixed equipment in item (f)(i) of this subsection. For installations made before May 30, 1982, only, electric equipment is also considered to be effectively grounded if it is secured to, and in metallic contact with, the grounded structural metal frame of a building. Metal car frames supported by metal hoisting cables attached to or running over metal sheaves or drums of grounded elevator machines are also considered to be effectively grounded.

(g) **Grounding of systems and circuits of 1000 volts and over (high voltage).**

(i) **General.** If high voltage systems are grounded, they shall comply with all applicable provisions of subdivisions (a) through (f) of this subsection as supplemented and modified by the subdivision (g) of this subsection.

(ii) **Grounding of systems supplying portable or mobile equipment.** (See WAC 296-24-95603 (2)(c).) Systems supplying portable or mobile high voltage equipment, other than substations installed on a temporary basis, shall comply with the following:

(A) Portable and mobile high voltage equipment shall be supplied from a system having its neutral grounded through an impedance. If a delta-connected high voltage system is used to supply the equipment, a system neutral shall be derived.

(B) Exposed noncurrent-carrying metal parts of portable and mobile equipment shall be connected by an equipment grounding conductor to the point at which the system neutral impedance is grounded.

(C) Ground-fault detection and relaying shall be provided to automatically deenergize any high voltage system component which has developed a ground fault. The continuity of the equipment grounding conductor shall be continuously monitored so as to deenergize automatically the high voltage feeder to the portable equipment upon loss of continuity of the equipment grounding conductor.

(D) The grounding electrode to which the portable or mobile equipment system neutral impedance is connected shall be isolated from and separated in the ground by at least 20 feet from any other system or equipment grounding electrode, and there shall be no direct connection between the grounding electrodes, such as buried pipe, fence, etc.

(iii) **Grounding of equipment.** All noncurrent-carrying metal parts of portable equipment and fixed equipment including their associated fences, housings, enclosures, and supporting structures shall be grounded. However, equipment which is guarded by location and isolated from ground need not be grounded. Additionally, pole-mounted distribution apparatus at a height exceeding 8 feet above ground or grade level need not be grounded.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-95607, filed 11/22/91, effective 12/24/91; 87-24-051 (Order 87-24), § 296-24-95607, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95607, filed 3/30/82.]

WAC 296-24-95609 Wiring methods, components, and equipment for general use. (1) **Wiring methods.** The provisions of this section do not apply to the conductors that are an integral part of factory-assembled equipment.

(a) **General requirements.**

(i) **Electrical continuity of metal raceways and enclosures.** Metal raceways, cable armor, and other metal enclosures for conductors shall be metallically joined together into a continuous electric conductor and shall be so connected to all boxes, fittings, and cabinets as to provide effective electrical continuity.

(ii) **Wiring in ducts.** No wiring systems of any type shall be installed in ducts used to transport dust, loose stock or flammable vapors. No wiring system of any type may be installed in any duct used for vapor removal or for ventilation of commercial-type cooking equipment, or in any shaft containing only such ducts.

(b) **Temporary wiring.** Temporary electrical power and lighting wiring methods may be of a class less than would be required for a permanent installation. Except as specifically modified in this section, all other requirements of this part for permanent wiring shall apply to temporary wiring installations.

(i) **Uses permitted, 600 volts, nominal or less.** Temporary electrical power and lighting installations 600 volts, nominal, or less may be used only:

(A) During and for remodeling, maintenance, repair, or demolition of buildings, structures, or equipment, and similar activities;

(B) For experimental or development work; and

(C) For a period not to exceed 90 days for Christmas decorative lighting, carnivals, and similar purposes.

(ii) **Uses permitted, over 600 volts, nominal.** Temporary wiring over 600 volts, nominal, may be used only during periods of tests, experiments, or emergencies.

(iii) **General requirements for temporary wiring.**

(A) Feeders shall originate in an approved distribution center. The conductors shall be run as multiconductor cord or cable assemblies, or, where not subject to physical damage, they may be run as open conductors on insulators not more than 10 feet apart.

(B) Branch circuits shall originate in an approved power outlet or panelboard. Conductors shall be multiconductor cord or cable assemblies or open conductors. If run as open conductors they shall be fastened at ceiling height every 10 feet. No branch-circuit conductor may be laid on the floor. Each branch circuit that supplies receptacles or fixed equipment shall contain a separate equipment grounding conductor if run as open conductors.

(C) Receptacles shall be of the grounding type. Unless installed in a complete metallic raceway, each branch circuit shall contain a separate equipment grounding conductor and all receptacles shall be electrically connected to the grounding conductor.

(D) No bare conductors nor earth returns may be used for the wiring of any temporary circuit.

(E) Suitable disconnecting switches or plug connectors shall be installed to permit the disconnection of all ungrounded conductors of each temporary circuit.

(F) Lamps for general illumination shall be protected from accidental contact or breakage. Protection shall be

provided by elevation of at least 7 feet from normal working surface or by a suitable fixture or lampholder with a guard.

(G) Flexible cords and cables shall be protected from accidental damage. Sharp corners and projections shall be avoided. Where passing through doorways or other pinch points, flexible cords and cables shall be provided with protection to avoid damage.

(c) **Cable trays.**

(i) **Uses permitted.**

(A) Only the following may be installed in cable tray systems:

(I) Mineral-insulated metal-sheathed cable (Type MI);

(II) Armored cable (Type AC);

(III) Metal-clad cable (Type MC);

(IV) Power-limited tray cable (Type PLTC);

(V) Nonmetallic-sheathed cable (Type NM or NMC);

(VI) Shielded nonmetallic-sheathed cable (Type SNM);

(VII) Multiconductor service-entrance cable (Type SE or USE);

(VIII) Multiconductor underground feeder and branch-circuit cable (Type UF);

(IX) Power and control tray cable (Type TC);

(X) Other factory-assembled, multiconductor control, signal, or power cables which are specifically approved for installation in cable trays; or

(XI) Any approved conduit or raceway with its contained conductors.

(B) In industrial establishments only, where conditions of maintenance and supervision assure that only qualified persons will service the installed cable tray system, the following cables may also be installed in ladder, ventilated trough, or 4 inch ventilated channel-type cable trays:

(I) Single conductor cables which are 250 MCM or larger and are Types RHH, RHW, MV, USE, or THW, and other 250 MCM or larger single conductor cables if specifically approved for installation in cable trays. Where exposed to direct rays of the sun, cables shall be sunlight-resistant.

(II) Type MV cables, where exposed to direct rays of the sun, shall be sunlight-resistant.

(C) Cable trays in hazardous (classified) locations shall contain only the cable types permitted in such locations.

(ii) **Uses not permitted.** Cable tray systems may not be used in hoistways or where subjected to severe physical damage.

(d) **Open wiring on insulators.**

(i) **Uses permitted.** Open wiring on insulators is only permitted on systems of 600 volts, nominal, or less for industrial or agricultural establishments and for services.

(ii) **Conductor supports.** Conductors shall be rigidly supported on noncombustible, nonabsorbent insulating materials and may not contact any other objects.

(iii) **Flexible nonmetallic tubing.** In dry locations where not exposed to severe physical damage, conductors may be separately enclosed in flexible nonmetallic tubing. The tubing shall be in continuous lengths not exceeding 15 feet and secured to the surface by straps at intervals not exceeding 4 feet 6 inches.

(iv) **Through walls, floors, wood cross members, etc.** Open conductors shall be separated from contact with walls, floors, and wood cross members, or partitions through which they pass by tubes or bushings of noncombustible, nonabsorbent insulating material. If the bushing is shorter than the hole, a waterproof sleeve of nonconductive material shall be inserted in the hole and an insulating bushing slipped into the sleeve at each end in such a manner as to keep the conductors absolutely out of contact with the sleeve. Each conductor shall be carried through a separate tube or sleeve.

(v) **Protection from physical damage.** Conductors within 7 feet from the floor are considered exposed to physical damage. Where open conductors cross ceiling joints and wall studs and are exposed to physical damage, they shall be protected.

(2) **Cabinets, boxes, and fittings.**

(a) **Conductors entering boxes, cabinets, or fittings.** Conductors entering boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed. Unused openings in cabinets, boxes, and fittings shall also be effectively closed.

(b) **Covers and canopies.** All pull boxes, junction boxes, and fittings shall be provided with covers approved for the purpose. If metal covers are used they shall be grounded. In completed installations each outlet box shall have a cover, faceplate, or fixture canopy. Covers of outlet boxes having holes through which flexible cord pendants pass shall be provided with bushings designed for the purpose or shall have smooth, well-rounded surfaces on which the cords may bear.

(c) **Pull and junction boxes for systems over 600 volts, nominal.** In addition to other requirements in this section for pull and junction boxes, the following shall apply to these boxes for systems over 600 volts, nominal:

(i) Boxes shall provide a complete enclosure for the contained conductors or cables.

(ii) Boxes shall be closed by suitable covers securely fastened in place. Underground box covers that weight over 100 pounds meet this requirement. Covers for boxes shall be permanently marked "HIGH VOLTAGE." The marking shall be on the outside of the box cover and shall be readily visible and legible.

(3) **Switches.**

(a) **Knife switches.** Single-throw knife switches shall be so connected that the blades are dead when the switch is in the open position. Single-throw knife switches shall be so placed that gravity will not tend to close them. Single-throw knife switches approved for use in the inverted position shall be provided with a locking device that will ensure that the blades remain in the open position when so set. Double-throw knife switches may be mounted so that the throw will be either vertical or horizontal. However, if the throw is vertical a locking device shall be provided to ensure that the blades remain in the open position when so set.

(b) **Faceplates for flush-mounted snap switches.** Flush snap switches that are mounted in ungrounded metal boxes and located within reach of conducting floors or other conducting surfaces shall be provided with faceplates of nonconducting, noncombustible material.

(4) **Switchboards and panelboards.** Switchboards that have any exposed live parts shall be located in permanently dry locations and accessible only to qualified persons. Panelboards shall be mounted in cabinets, cutout boxes, or enclosures approved for the purpose and shall be dead front. However, panelboards other than the dead front externally-operable type are permitted where accessible only to quali-

fied persons. Exposed blades of knife switches shall be dead when open.

(5) **Enclosures for damp or wet locations.**

(a) Cabinets, cutout boxes, fittings, boxes, and panelboard enclosures in damp or wet locations shall be installed so as to prevent moisture or water from entering and accumulating within the enclosures. In wet locations the enclosures shall be weatherproof.

(b) Switches, circuit breakers, and switchboards installed in wet locations shall be enclosed in weatherproof enclosures.

(6) **Conductors for general wiring.** All conductors used for general wiring shall be insulated unless otherwise permitted in this section. The conductor insulation shall be of a type that is approved for the voltage, operating temperature, and location of use. Insulated conductors shall be distinguishable by appropriate color or other suitable means as being grounded conductors, ungrounded conductors, or equipment grounding conductors.

(7) **Flexible cords and cables.**

(a) **Use of flexible cords and cables.**

(i) Flexible cords and cables shall be approved and suitable for conditions of use and location. Flexible cords and cables shall be used only for:

(A) Pendants;

(B) Wiring of fixtures;

(C) Connection of portable lamps or appliances;

(D) Elevator cables;

(E) Wiring of cranes and hoists;

(F) Connection of stationary equipment to facilitate their frequent interchange;

(G) Prevention of the transmission of noise or vibration;

(H) Appliances where the fastening means and mechanical connections are designed to permit removal for maintenance and repair; or

(I) Data processing cables approved as a part of the data processing system.

(ii) If used as permitted in subitem (a)(i)(C), (a)(i)(F) or (a)(i)(H) of this subsection, the flexible cord shall be equipped with an attachment plug and shall be energized from an approved receptacle outlet.

(iii) Unless specifically permitted in item (a)(i) of this subsection, flexible cords and cables may not be used:

(A) As a substitute for the fixed wiring of a structure;

(B) Where run through holes in walls, ceilings, or floors;

(C) Where run through doorways, windows, or similar openings;

(D) Where attached to building surfaces; or

(E) Where concealed behind building walls, ceilings, or floors.

(iv) Flexible cords used in show windows and showcases shall be Type S, SO, SJ, SJO, ST, STO, SJT, SJTO, or AFS except for the wiring of chain-supported lighting fixtures and supply cords for portable lamps and other merchandise being displayed or exhibited.

(b) **Identification, splices, and terminations.**

(i) A conductor of a flexible cord or cable that is used as a grounded conductor or an equipment grounding conductor shall be distinguishable from other conductors. Types SJ, SJO, SJT, SJTO, S, SO, ST, and STO shall be durably marked on the surface with the type designation, size, and number of conductors.

(ii) Flexible cords shall be used only in continuous lengths without splice or tap. Hard service flexible cords No. 12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.

(iii) Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

(8) **Portable cables over 600 volts, nominal.** Multiconductor portable cable for use in supplying power to portable or mobile equipment at over 600 volts, nominal, shall consist of No. 8 or larger conductors employing flexible stranding. Cables operated at over 2,000 volts shall be shielded for the purpose of confining the voltage stresses to the insulation. Grounding conductors shall be provided. Connectors for these cables shall be of a locking type with provisions to prevent their opening or closing while energized. Strain relief shall be provided at connections and terminations. Portable cables may not be operated with splices unless the splices are of the permanent molded, vulcanized, or other approved type. Termination enclosures shall be suitably marked with a high voltage hazard warning, and terminations shall be accessible only to authorized and qualified personnel.

(9) **Fixture wires.**

(a) **General.** Fixture wires shall be approved for the voltage, temperature, and location of use. A fixture wire which is used as a grounded conductor shall be identified.

(b) **Uses permitted.** Fixture wires may be used:

(i) For installation in lighting fixtures and in similar equipment where enclosed or protected and not subject to bending or twisting in use; or

(ii) For connecting lighting fixtures to the branch-circuit conductors supplying the fixtures.

(c) **Uses not permitted.** Fixture wires may not be used as branch-circuit conductors except as permitted for Class 1 power limited circuits.

(10) **Equipment for general use.**

(a) **Lighting fixtures, lampholders, lamps, and receptacles.**

(i) Fixtures, lampholders, lamps, rosettes, and receptacles may have no live parts normally exposed to employee contact. However, rosettes and cleat-type lampholders and receptacles located at least 8 feet above the floor may have exposed parts.

(ii) Handlamps of the portable type supplied through flexible cords shall be equipped with a handle of molded composition or other material approved for the purpose, and a substantial guard shall be attached to the lampholder or the handle.

(iii) Lampholders of the screw-shell type shall be installed for use as lampholders only. Lampholders installed in wet or damp locations shall be of the weatherproof type.

(iv) Fixtures installed in wet or damp locations shall be approved for the purpose and shall be so constructed or installed that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.

(b) **Receptacles, cord connectors, and attachment plugs (caps).**

(i) Receptacles, cord connectors, and attachment plugs shall be constructed so that no receptacle or cord connector will accept an attachment plug with a different voltage or current rating than that for which the device is intended. However, a 20-ampere T-slot receptacle or cord connector may accept a 15-ampere attachment plug of the same voltage rating.

(ii) A receptacle installed in a wet or damp location shall be suitable for the location.

(c) **Appliances.**

(i) Appliances, other than those in which the current-carrying parts at high temperatures are necessarily exposed, may have no live parts normally exposed to employee contact.

(ii) A means shall be provided to disconnect each appliance.

(iii) Each appliance shall be marked with its rating in volts and amperes or volts and watts.

(d) **Motors.** This subdivision applies to motors, motor circuits, and controllers.

(i) **In sight from.** If specified that one piece of equipment shall be "in sight from" another piece of equipment, one shall be visible and not more than 50 feet from the other.

(ii) **Disconnecting means.**

(A) A disconnecting means shall be located in sight from the controller location. However, a single disconnecting means may be located adjacent to a group of coordinated controllers mounted adjacent to each other or a multimotor continuous process machine. The controller disconnecting means for motor branch circuits over 600 volts, nominal, may be out of sight of the controller, if the controller is marked with a warning label giving the location and identification of the disconnecting means which is to be locked in the open position.

(B) The disconnecting means shall disconnect the motor and the controller from all ungrounded supply conductors and shall be so designed that no pole can be operated independently.

(C) If a motor and the driven machinery are not in sight from the controller location, the installation shall comply with one of the following conditions:

(I) The controller disconnecting means shall be capable of being locked in the open position.

(II) A manually operable switch that will disconnect the motor from its source of supply shall be placed in sight from the motor location.

(D) The disconnecting means shall plainly indicate whether it is in the open (off) or closed (on) position.

(E) The disconnecting means shall be readily accessible. If more than one disconnect is provided for the same equipment, only one need be readily accessible.

(F) An individual disconnecting means shall be provided for each motor, but a single disconnecting means may be used for a group of motors under any one of the following conditions:

(I) If a number of motors drive special parts of a single machine or piece of apparatus, such as a metal or wood-working machine, crane, or hoist;

(II) If a group of motors is under the protection of one set of branch-circuit protective devices; or

(III) If a group of motors is in a single room in sight from the location of the disconnecting means.

(iii) **Motor overload, short-circuit, and ground-fault protection.** Motors, motor-control apparatus, and motor branch-circuit conductors shall be protected against overheating due to motor overloads or failure to start, and against short-circuits or ground faults. These provisions shall not require overload protection that will stop a motor where a shutdown is likely to introduce additional or increased hazards, as in the case of fire pumps, or where continued operation of a motor is necessary for a safe shutdown of equipment or process and motor overload sensing devices are connected to a supervised alarm.

(iv) **Protection of live parts—all voltages.**

(A) Stationary motors having commutators, collectors, and brush rigging located inside of motor end brackets and not conductively connected to supply circuits operating at more than 150 volts to ground need not have such parts guarded. Exposed live parts of motors and controllers operating at 50 volts or more between terminals shall be guarded against accidental contact by any of the following:

(I) By installation in a room or enclosure that is accessible only to qualified persons;

(II) By installation on a suitable balcony, gallery, or platform, so elevated and arranged as to exclude unqualified persons; or

(III) By elevation 8 feet or more above the floor.

(B) Where live parts of motors or controllers operating at over 150 volts to ground are guarded against accidental contact only by location, and where adjustment or other attendance may be necessary during the operation of the apparatus, suitable insulating mats or platforms shall be provided so that the attendant cannot readily touch live parts unless standing on the mats or platforms.

(e) **Transformers.**

(i) The following items cover the installation of all transformers except the following:

(A) Current transformers;

(B) Dry-type transformers installed as a component part of other apparatus;

(C) Transformers which are an integral part of an x-ray, high frequency, or electrostatic-coating apparatus;

(D) Transformers used with Class 2 and Class 3 circuits, sign and outline lighting, electric discharge lighting, and power-limited fire-protective signalling circuits; and

(E) Liquid-filled or dry-type transformers used for research, development, or testing, where effective safeguard arrangements are provided.

(ii) The operating voltage of exposed live parts of transformer installations shall be indicated by warning signs or visible markings on the equipment or structure.

(iii) Dry-type, high fire point liquid-insulated, and askarel-insulated transformers installed indoors and rated over 35kV shall be in a vault.

(iv) If they present a fire hazard to employees, oil-insulated transformers installed indoors shall be in a vault.

(v) Combustible material, combustible buildings and parts of buildings, fire escapes, and door and window openings shall be safeguarded from fires which may originate in oil-insulated transformers attached to or adjacent to a building or combustible material.

(vi) Transformer vaults shall be constructed so as to contain fire and combustible liquids within the vault and to prevent unauthorized access. Locks and latches shall be so arranged that a vault door can be readily opened from the inside.

(vii) Any pipe or duct system foreign to the vault installation may not enter or pass through a transformer vault.

(viii) Materials may not be stored in transformer vaults.

(f) **Capacitors.**

(i) All capacitors, except surge capacitors or capacitors included as a component part of other apparatus, shall be provided with an automatic means of draining the stored charge after the capacitor is disconnected from its source of supply.

(ii) Capacitors rated over 600 volts, nominal, shall comply with the following additional requirements:

(A) Isolating or disconnecting switches (with no interrupting rating) shall be interlocked with the load interrupting device or shall be provided with prominently displayed caution signs to prevent switching load current.

(B) For series capacitors (see WAC 296-24-95603 (2)(c)), the proper switching shall be assured by use of at least one of the following:

(I) Mechanically sequenced isolating and bypass switches;

(II) Interlocks; or

(III) Switching procedure prominently displayed at the switching location.

(g) **Storage batteries.** Provisions shall be made for sufficient diffusion and ventilation of gases from storage batteries to prevent the accumulation of explosive mixtures.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-95609, filed 7/20/94, effective 9/20/94; 87-24-051 (Order 87-24), § 296-24-95609, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95609, filed 3/30/82.]

WAC 296-24-95611 Specific purpose equipment and installations. (1) **Electric signs and outline lighting.**

(a) **Disconnecting means.** Signs operated by electronic or electromechanical controllers located outside the sign shall have a disconnecting means located inside the controller enclosure or within sight of the controller location, and it shall be capable of being locked in the open position. Such disconnecting means shall have no pole that can be operated independently, and it shall open all ungrounded conductors that supply the controller and sign. All other signs, except the portable type, and all outline lighting installations shall have an externally operable disconnecting means which can open all ungrounded conductors and is within the sight of the sign or outline lighting it controls.

(b) Doors or covers giving access to uninsulated parts of indoor signs or outline lighting exceeding 600 volts and accessible to other than qualified persons shall either be provided with interlock switches to disconnect the primary circuit or shall be so fastened that the use of other than ordinary tools will be necessary to open them.

(2) **Cranes and hoists.** This subsection applies to the installation of electric equipment and wiring used in connection with cranes, monorail hoists, hoists, and all runways.

(a) **Disconnecting means.**

(i) A readily accessible disconnecting means shall be provided between the runway contact conductors and the power supply.

(ii) Another disconnecting means, capable of being locked in the open position, shall be provided in the leads from the runway contact conductors or other power supply on any crane or monorail hoist.

(A) If this additional disconnection means is not readily accessible from the crane or monorail hoist operating station means shall be provided at the operating station, to open the power circuit to all motors of the crane or monorail hoist.

(B) The additional disconnect may be omitted if a monorail hoist or hand-propelled crane bridge installation meets all of the following:

(I) The unit is floor controlled;

(II) The unit is within view of the power supply disconnecting means; and

(III) No fixed work platform has been provided for servicing the unit.

(b) **Control.** A limit switch or other device shall be provided to prevent the load block from passing the safe upper limit of travel of any hoisting mechanism.

(c) **Clearance.** The dimension of the working space in the direction of access to live parts which may require examination, adjustment, servicing, or maintenance while alive shall be a minimum of 2 feet 6 inches. Where controls are enclosed in cabinets, the door(s) shall either open at least 90 degrees or be removable.

(3) **Elevators, dumbwaiters, escalators, and moving walks.**

(a) **Disconnecting means.** Elevators, dumbwaiters, escalators, and moving walks shall have a single means for disconnecting all ungrounded main power supply conductors for each unit.

(b) **Warning signs.** If interconnections between control panels are necessary for operation of the system on a multicar installation that remains energized from a source other than the disconnecting means, a warning sign shall be mounted on or adjacent to the disconnecting means. The sign shall be clearly legible and shall read "Warning—Parts of the control panel are not de-energized by this switch." (See WAC 296-24-95603 (2)(c).)

(c) **Control panels.** If control panels are not located in the same space as the drive machine, they shall be located in cabinets with doors or panels capable of being locked closed.

(4) **Electric welders—disconnecting means.**

(a) A disconnecting means shall be provided in the supply circuit for each motor-generator arc welder, and for each AC transformer and DC rectifier arc welder which is not equipped with a disconnect mounted as an integral part of the welder.

(b) A switch or circuit breaker shall be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means may not be less than the supply conductor ampacity.

(5) **Data processing systems—disconnecting means.** A disconnecting means shall be provided to disconnect the power to all electronic equipment in data processing or computer rooms. This disconnecting means shall be controlled from locations readily accessible to the operator at the

principal exit doors. There shall also be a similar disconnecting means to disconnect the air conditioning system serving this area.

(6) **X-ray equipment.** This subsection applies to x-ray equipment for other than medical or dental use.

(a) **Disconnecting means.**

(i) A disconnecting means shall be provided in the supply circuit. The disconnecting means shall be operable from a location readily accessible from the x-ray control. For equipment connected to a 120-volt branch circuit of 30 amperes or less, a grounding-type attachment plug cap and receptacle of proper rating may serve as a disconnecting means.

(ii) If more than one piece of equipment is operated from the same high-voltage circuit, each piece or each group of equipment as a unit shall be provided with a high-voltage switch or equivalent disconnecting means. This disconnecting means shall be constructed, enclosed, or located so as to avoid contact by employees with its live parts.

(b) **Control.**

(i) **Radiographic and fluoroscopic types.** Radiographic and fluoroscopic-type equipment shall be effectively enclosed or shall have interlocks that de-energize the equipment automatically to prevent ready access to live current-carrying parts.

(ii) **Diffraction and irradiation types.** Diffraction-type and irradiation-type equipment shall be provided with a means to indicate when it is energized unless the equipment or installation is effectively enclosed or is provided with interlocks to prevent access to live current-carrying parts during operation.

(7) **Induction and dielectric heating equipment.**

(a) **Scope.** Subdivisions (b) and (c) of this subsection cover induction and dielectric heating equipment and accessories for industrial and scientific applications, but not for medical dental applications or for appliances.

(b) **Guarding and grounding.**

(i) **Enclosures.** The converting apparatus (including the DC line) and high-frequency electric circuits (excluding the output circuits and remote-control circuits) shall be completely contained within enclosures of noncombustible material.

(ii) **Panel controls.** All panel controls shall be of dead-front construction.

(iii) **Access to internal equipment.** Where doors are used for access to voltages from 500 to 1000 volts AC or DC, either door locks or interlocks shall be provided. Where doors are used for access to voltages of over 1000 volts AC or DC, either mechanical lockouts with a disconnecting means to prevent access until voltage is removed from the cubicle, or both door interlocking and mechanical door locks, shall be provided.

(iv) **Warning labels.** "Danger" labels shall be attached on the equipment and shall be plainly visible even when doors are open or panels are removed from compartments containing voltages of over 250 volts AC or DC.

(v) **Work applicator shielding.** Protective cages or adequate shielding shall be used to guard work applicators other than induction heating coils. Induction heating coils shall be protected by insulation and/or refractory materials. Interlock switches shall be used on all hinged access doors, sliding panels, or other such means of access to the applicator. Interlock switches shall be connected in such a manner as to remove all power from the applicator when any one of the access doors or panels is open. Interlocks on access doors or panels are not required if the applicator is an induction heating coil at DC ground potential or operating at less than 150 volts AC.

(vi) **Disconnecting means.** A readily accessible disconnecting means shall be provided by which each unit of heating equipment can be isolated from its supply circuit.

(c) **Remote control.** If remote controls are used for applying power, a selector switch shall be provided and interlocked to provide power from only one control point at a time. Switches operated by foot pressure shall be provided with a shield over the contact button to avoid accidental closing the switch.

(8) **Electrolytic cells.**

(a) **Scope.** These provisions for electrolytic cells apply to the installation of the electrical components and accessory equipment of electrolytic cells, electrolytic cell lines, and process power supply for the production of aluminum, cadmium, chlorine, copper, fluorine, hydrogen peroxide, magnesium, sodium, sodium chlorate, and zinc. Cells used as a source of electric energy and for electroplating processes and cells used for production of hydrogen are not covered by these provisions.

(b) **Definitions applicable to this subsection.**

Cell line: An assembly of electrically interconnected electrolytic cells supplied by a source of direct-current power.

Cell line attachments and auxiliary equipment: Cell line attachments and auxiliary equipment include, but are not limited to: Auxiliary tanks; process piping; duct work; structural supports; exposed cell line conductors; conduits and other raceways; pumps; positioning equipment and cell cutout or bypass electrical devices. Auxiliary equipment also includes tools, welding machines, crucibles, and other portable equipment used for operation and maintenance within the electrolytic cell line working zone. In the cell line working zone, auxiliary equipment includes the exposed conductive surfaces of ungrounded cranes and crane-mounted cell-servicing equipment.

Cell line working zone: The cell line working zone is the space envelope wherein operation or maintenance is normally performed on or in the vicinity of exposed energized surfaces of cell lines or their attachments.

Electrolytic cells: A receptacle or vessel in which electrochemical reactions are caused by applying energy for the purpose of refining or producing usable materials.

(c) **Application.** Installations covered by subsection (8) of this section shall comply with all applicable provisions of this section except as follows:

(i) Overcurrent protection of electrolytic cell DC process power circuits need not comply with the requirements of WAC 296-24-95607(5).

(ii) Equipment located or used within the cell line working zone or associated with the cell line DC power circuits need not comply with the provisions of WAC 296-24-95607(6).

(iii) Electrolytic cells, cell line conductors, cell line attachments, and the wiring of auxiliary equipment and devices within the cell line working zone need not comply

with the provisions of WAC 296-24-95605 and 296-24-95607 (2) and (3).

(d) **Disconnecting means.**

(i) If more than one DC cell line process power supply serves the same cell line, a disconnecting means shall be provided on the cell line circuit side of each power supply to disconnect it from the cell line circuit.

(ii) Removable links or removable conductors may be used as the disconnecting means.

(e) **Portable electric equipment.**

(i) The frames and enclosures of portable electric equipment used within the cell line working zone may not be grounded. However, these frames and enclosures may be grounded if the cell line circuit voltage does not exceed 200 volts DC or if the frames are guarded.

(ii) Ungrounded portable electric equipment shall be distinctively marked and may not be interchangeable with grounded portable electric equipment.

(f) **Power supply circuits and receptacles for portable electric equipment.**

(i) Circuits supplying power to ungrounded receptacles for hand-held, cord- and plug-connected equipment shall be electrically isolated from any distribution system supplying areas other than the cell line working zone and shall be ungrounded. Power for these circuits shall be supplied through isolating transformers.

(ii) Receptacles and their mating plugs for ungrounded equipment may not have provision for a grounding conductor and shall be of a configuration which prevents their use for equipment required to be grounded.

(iii) Receptacles on circuits supplied by an isolating transformer with an ungrounded secondary shall have a distinctive configuration, shall be distinctively marked, and may not be used in any other location in the plant.

(g) **Fixed and portable electric equipment.**

(i) AC systems supplying fixed and portable electric equipment within the cell line working zone need not be grounded.

(ii) Exposed conductive surfaces, such as electric equipment housings, cabinets, boxes, motors, raceways and the like that are within the cell line working zone need not be grounded.

(iii) Auxiliary electrical devices, such as motors, transducers, sensors, control devices, and alarms, mounted on an electrolytic cell or other energized surface, shall be connected by any of the following means:

(A) Multiconductor hard usage or extra hard usage flexible cord;

(B) Wire or cable in suitable raceways; or

(C) Exposed metal conduit, cable tray, armored cable, or similar metallic systems installed with insulating breaks such that they will not cause a potentially hazardous electrical condition.

(iv) Fixed electric equipment may be bonded to the energized conductive surfaces of the cell line, its attachments, or auxiliaries. If fixed electric equipment is mounted on an energized conductive surface, it shall be bonded to that surface.

(h) **Auxiliary nonelectric connections.** Auxiliary nonelectric connections, such as air hoses, water hoses, and the like, to an electrolytic cell, its attachments, or auxiliary equipment may not have continuous conductive reinforcing wire, armor, braids, and the like. Hoses shall be of a nonconductive material.

(i) **Cranes and hoists.**

(i) The conductive surfaces of cranes and hoists that enter the cell line working zone need not be grounded. The portion of an overhead crane or hoist which contacts an energized electrolytic cell or energized attachments shall be insulated from ground.

(ii) Remote crane or hoist controls which may introduce hazardous electrical conditions into the cell line working zone shall employ one or more of the following systems:

(A) Insulated and ungrounded control circuit;

(B) Nonconductive rope operator;

(C) Pendent pushbutton with nonconductive supporting means and having nonconductive surfaces or ungrounded exposed conductive surfaces; or

(D) Radio.

(9) **Electrically driven or controlled irrigation machines.** (See WAC 296-24-95603 (2)(c).)

(a) **Lightning protection.** If an electrically driven or controlled irrigation machines has a stationary point, a driven ground rod shall be connected to the machine at the stationary point for lightning protection.

(b) **Disconnecting means.** The main disconnecting means for a center pivot irrigation machine shall be located at the point of connection of electrical power to the machine and shall be readily accessible and capable of being locked in the open position. A disconnecting means shall be provided for each motor and controller.

(10) **Swimming pools, fountains, and similar installations.**

(a) **Scope.** Subdivisions (b) through (e) of this subsection apply to electric wiring for and equipment in or adjacent to all swimming, wading, therapeutic, and decorative pools and fountains, whether permanently installed or storable, and to metallic auxiliary equipment, such as pumps, filters, and similar equipment. Therapeutic pools in health care facilities are exempt from these provisions.

(b) **Lighting and receptacles.**

(i) **Receptacles.** A single receptacle of the locking and grounding type that provides power for a permanently installed swimming pool recirculating pump motor may be located not less than 5 feet from the inside walls of a pool. All other receptacles on the property shall be located at least 10 feet from the inside walls of a pool. Receptacles which are located within 15 feet of the inside walls of the pool shall be protected by ground-fault circuit interrupters.

Note: In determining these dimensions, the distance to be measured is the shortest path the supply cord of an appliance connected to the receptacle would follow without piercing a floor, wall, or ceiling of a building or other effective permanent barrier.

(ii) **Lighting fixtures and lighting outlets.**

(A) Unless they are 12 feet above the maximum water level, lighting fixtures and lighting outlets may not be installed over a pool or over the area extending 5 feet horizontally from the inside walls of a pool. However, a lighting fixture or lighting outlet which has been installed before April 16, 1981, may be located less than 5 feet measured horizontally from the inside walls of a pool if it is at least 5 feet above the surface of the maximum water level and shall be rigidly attached to the existing structure. It

shall also be protected by a ground-fault circuit interrupter installed in the branch circuit supplying the fixture.

(B) Unless installed 5 feet above the maximum water level and rigidly attached to the structure adjacent to or enclosing the pool, lighting fixtures and lighting outlets installed in the area extending between 5 feet and 10 feet horizontally from the inside walls of a pool shall be protected by a ground-fault circuit interrupter.

(c) **Cord-connected and plug-connected equipment.** Flexible cords used with the following equipment may not exceed 3 feet in length and shall have a copper equipment grounding conductor with a grounding-type attachment plug.

(i) Cord-connected and plug-connected lighting fixtures installed within 16 feet of the water surface of permanently installed pools.

(ii) Other cord-connected and plug-connected, fixed or stationary equipment used with permanently installed pools.

(d) **Underwater equipment.**

(i) A ground-fault circuit interrupter shall be installed in the branch circuit supplying underwater fixtures operating at more than 15 volts. Equipment installed underwater shall be approved for the purpose.

(ii) No underwater lighting fixtures may be installed for operation at over 150 volts between conductors.

(e) **Fountains.** All electric equipment operating at more than 15 volts, including power supply cords, used with fountains shall be protected by ground-fault circuit interrupters. (See WAC 296-24-95603 (2)(c).)

(11) Safety procedure and protective equipment required for exposure to movie theater Xenon bulbs. Exposure also includes opening of the lamphouse where the bulb is installed. The following are minimum requirements for theater personnel or others who install, change, or dispose of Xenon bulbs and are exposed to potential explosion hazard:

(a) All bulbs, new, used or subject to future disposal, must be stored in the protective jacket provided until time of use.

(b) Protective equipment shall be furnished at no cost to the employee and the use shall be strictly enforced for any exposed employee. Basic safety equipment required is:

(i) Full protective face shield with crown protector.

(ii) Safety glasses for use under face shield. (To meet required impact resistance test of ANSI Z87.1.)

(iii) Impact resistant, long-sleeved jacket of a length adequate to protect vital organs.

(iv) Impact resistant gloves.

(c) A bulb subject to disposal should be removed with the regular, proper precautions, carefully placed in its protective jacket or cover and deliberately broken by dropping from a sufficient height. An unbroken bulb must never be disposed of as regular garbage or trash.

(d) Bulbs must be handled only at room temperature. If they have been in operation, adequate time (at least 10 minutes) must be allowed for the bulb to cool to room temperature before handling.

[Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-24-95611, filed 1/10/91, effective 2/12/91; 87-24-051 (Order 87-24), § 296-24-95611, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95611, filed 3/30/82.]

WAC 296-24-95613 Hazardous (classified) locations. (1) **Scope.** This section covers the requirements for electric equipment and wiring in locations which are classified depending on the properties of the flammable vapors, liquids or gases, or combustible dusts or fibers which may be present therein and the likelihood that a flammable combustible concentration or quantity is present. Hazardous (classified) locations may be found in occupancies such as, but not limited to, the following: Aircraft hangars, gasoline dispensing and service stations, bulk storage plants for gasoline or other volatile flammable liquids, paint-finishing process plants, health care facilities, agricultural or other facilities where excessive combustible dusts may be present, marinas, boat yards, and petroleum and chemical processing plants. Each room, section or area shall be considered individually in determining its classification. These hazardous (classified) locations are assigned six designations as follows:

Class I,	Division 1
Class I,	Division 2
Class II,	Division 1
Class II,	Division 2
Class III,	Division 1
Class III,	Division 2

For definitions of these locations see WAC 296-24-95601(1). All applicable requirements in this part shall apply to hazardous (classified) locations, unless modified by provisions of this section.

(2) **Electrical installations.** Equipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, or approved for the hazardous (classified) location, or safe for the hazardous (classified) location. Requirements for each of these options are as follows:

(a) **Intrinsically safe.** Equipment and associated wiring approved as intrinsically safe shall be permitted in any hazardous (classified) location for which it is approved.

(b) **Approved for the hazardous (classified) location.**

(i) Equipment shall be approved not only for the class of location but also for the ignitible or combustible properties of the specific gas, vapor, dust, or fiber that will be present.

Note: NFPA 70, the National Electrical Code, lists or defines hazardous gases, vapors, and dusts by "groups" characterized by their ignitible or combustible properties.

(ii) Equipment shall be marked to show the class, group, and operating temperature or temperature range, based on operation in a 40 degrees C ambient, for which it is approved. The temperature marking may not exceed the ignition temperature of the specific gas or vapor to be encountered. However, the following provisions modify this marking requirement for specific equipment:

(A) Equipment of the nonheat-producing type, such as junction boxes, conduit, and fittings, and equipment of the heat-producing type having a maximum temperature not more than 100 degrees C (212 degrees F) need not have a marked operating temperature or temperature range.

(B) Fixed lighting fixtures marked for use in Class I, Division 2 locations only, need not be marked to indicate the group.

(C) Fixed general-purpose equipment in Class I locations, other than lighting fixtures, which is acceptable for use

in Class I, Division 2 locations need not be marked with the class, group, division, or operating temperature.

(D) Fixed dust-tight equipment, other than lighting fixtures, which is acceptable for use in Class II, Division 2 and Class III locations need not be marked with the class, group, division, or operating temperature.

(c) **Safe for the hazardous (classified) location.** Equipment which is safe for the location shall be of a type and design which the employer demonstrates will provide protection from the hazards arising from the combustibility and flammability of vapors, liquids, gases, dusts, or fibers.

Note: The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installations which will meet this requirement. The guidelines of this document address electric wiring, equipment, and systems installed in hazardous (classified) locations and contain specific provisions for the following: Wiring methods, wiring connections; conductor insulation, flexible cords, sealing and drainage, transformers, capacitors, switches, circuit breakers, fuses, motor controllers, receptacles, attachment plugs, meters, relays, instruments, resistors, generators, motors, lighting fixtures, storage battery charging equipment, electric cranes, electric hoists and similar equipment, utilization equipment, signaling systems, alarm systems, remote control systems, local loud speaker and communication systems, ventilation piping, live parts, lighting surge protection, and grounding. Compliance with these guidelines will constitute one means, but not the only means, of compliance with this subsection.

(3) **Conduits.** All conduits shall be threaded and shall be made wrench-tight. Where it is impractical to make a threaded joint tight, a bonding jumper shall be utilized.

(4) **Equipment in Division 2 locations.** Equipment that has been approved for a Division 1 location may be installed in a Division 2 location of the same class and group. General-purpose equipment or equipment in general-purpose enclosures may be installed in Division 2 locations if the equipment does not constitute a source of ignition under normal operating conditions.

(5) **Motors and generators.** Motors and generators shall conform to the following: Class I, Division 1. In Class I, Division 1 locations, motors, generators and other rotating electric machinery shall be: (a) Approved for Class I, Division 1 locations (explosion-proof); or (b) of the totally enclosed type supplied with positive-pressure ventilation from a source of clean air with discharge to a safe area, so arranged to prevent energizing of the machine until ventilation has been established and the enclosure has been purged with at least 10 volumes of air, and also arranged to automatically deenergize the equipment when the air supply fails; or (c) of the totally enclosed inert-gas-filled type supplied with a suitable reliable source of inert gas for pressuring the enclosure, with devices provided to ensure a positive pressure in the enclosure and arranged to automatically deenergize the equipment when the gas supply fails; or (d) of a type designed to be submerged in a liquid which is flammable only when vaporized and mixed with air, or in a gas or vapor at a pressure greater than atmospheric and which is flammable only when mixed with air; and the machine is so arranged to prevent energizing it until it has been purged with the liquid or gas to exclude air, and also arranged to automatically deenergize the equipment when the supply of liquid, or gas or vapor fails or the pressure is reduced to atmospheric. Totally enclosed motors of types (b) and (c) shall have no external surface with an operating temperature in degrees Celsius in excess of eighty percent of the ignition temperature of the gas or vapor involved, as determined by ASTM test procedure (Designation: D-2155-69). Appropriate devices shall be provided to detect any increase in temperature of the motor beyond design limits and automatically deenergize the equipment or provide an adequate alarm. Auxiliary equipment shall be of a type approved for the location in which it is installed.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-95613, filed 7/20/94, effective 9/20/94; 87-24-051 (Order 87-24), § 296-24-95613, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95613, filed 3/30/82.]

WAC 296-24-95615 Special systems. (1) **Systems over 600 volts, nominal.** Subdivisions (a) through (d) of this subsection cover the general requirements for all circuits and equipment operated at over 600 volts.

(a) **Wiring methods for fixed installations.**

(i) Above-ground conductors shall be installed in rigid metal conduit, in intermediate metal conduit, in cable trays, in cablebus, in other suitable raceways, or as open runs of metal-clad cable suitable for the use and purpose. However, open runs of nonmetallic-sheathed cable or of bare conductors or busbars may be installed in locations accessible only to qualified persons. Metallic shielding components, such as tapes, wires, or braids for conductors, shall be grounded. Open runs of insulated wires and cables having a bare lead sheath or a braided outer covering shall be supported in a manner designed to prevent physical damage to the braid or sheath.

(ii) Conductors emerging from the ground shall be enclosed in approved raceways. (See WAC 296-24-95603 (2)(c).)

(b) **Interrupting and isolating devices.**

(i) Circuit breaker installations located indoors shall consist of metal-enclosed units or fire-resistant cell-mounted units. In locations accessible only to qualified personnel, open mounting of circuit breakers is permitted. A means of indicating the open and closed position of circuit breakers shall be provided.

(ii) Fused cutouts installed in buildings or transformer vaults shall be of a type approved for the purpose. They shall be readily accessible for fuse replacement.

(iii) A means shall be provided to completely isolate equipment for inspection and repairs. Isolating means which are not designed to interrupt the load current of the circuit shall be either interlocked with an approved circuit interrupter or provided with a sign warning against opening them under load.

(c) **Mobile and portable equipment.**

(i) **Power cable connections to mobile machines.** A metallic enclosure shall be provided on the mobile machine for enclosing the terminals of the power cable. The enclosure shall include provisions for a solid connection for the ground wire(s) terminal to effectively ground the machine frame. The method of cable termination used shall prevent any strain or pull on the cable from stressing the electrical connections. The enclosure shall have provision for locking so only authorized qualified persons may open it and shall be marked with a sign warning of the presence of energized parts.

(ii) **Guarding live parts.** All energized switching and control parts shall be enclosed in effectively grounded metal cabinets or enclosures. Circuit breakers and protective equipment shall have the operating means projecting through the metal cabinet or enclosure so these units can be reset without locked doors being opened. Enclosures and metal cabinets shall be locked so that only authorized qualified persons have access and shall be marked with a sign warning of the presence of energized parts. Collector ring assemblies on revolving-type machines (shovels, draglines, etc.) shall be guarded.

(d) **Tunnel installations.**

(i) **Application.** The provisions of this subsection apply to installation and use of high-voltage power distribution and utilization equipment which is portable and/or mobile, such as substations, trailers, cars, mobile shovels, draglines, hoists, drills, dredges, compressors, pumps, conveyors, and underground excavators.

(ii) **Conductors.** Conductors in tunnels shall be installed in one or more of the following:

(A) Metal conduit or other metal raceway,

(B) Type MC cable, or

(C) Other approved multiconductor cable.

Conductors shall also be so located or guarded as to protect them from physical damage. Multiconductor portable cable may supply mobile equipment. An equipment grounding conductor shall be run with circuit conductors inside the metal raceway or inside the multiconductor cable jacket. The equipment grounding conductor may be insulated or bare.

(iii) **Guarding live parts.** Bare terminals of transformers, switches, motor controllers, and other equipment shall be enclosed to prevent accidental contact with energized parts. Enclosures for use in tunnels shall be drip-proof, weatherproof, or submersible as required by the environmental conditions.

(iv) **Disconnecting means.** A disconnecting means that simultaneously opens all ungrounded conductors shall be installed at each transformer or motor location.

(v) **Grounding and bonding.** All nonenergized metal parts of electric equipment and metal raceways and cable sheaths shall be effectively grounded and bonded to all metal pipes and rails at the portal and at intervals not exceeding 1000 feet throughout the tunnel.

(2) **Emergency power systems.**

(a) **Scope.** The provisions for emergency systems apply to circuits, systems, and equipment intended to supply power for illumination and special loads, in the event of failure of the normal supply.

(b) **Wiring methods.** Emergency circuit wiring shall be kept entirely independent of all other wiring and equipment and may not enter the same raceway, cable, box, or cabinet as other wiring except either where common circuit elements suitable for the purpose are required, or for transferring power from the normal to the emergency source.

(c) **Emergency illumination.** Where emergency lighting is necessary, the system shall be so arranged that the failure of any individual lighting element, such as the burning out of a light bulb, cannot leave any space in total darkness.

(3) **Class 1, Class 2, and Class 3 remote control, signaling, and power-limited circuits.**

(a) **Classification.** Class 1, Class 2, or Class 3 remote control, signaling, or power-limited circuits are characterized by their usage and electrical power limitation which differentiates them from light and power circuits. These circuits are classified in accordance with their respective voltage and power limitations as summarized in items (a)(i) through (a)(iii) of this subsection.

(i) **Class 1 circuits.**

(A) A Class 1 power-limited circuit is supplied from a source having a rated output of not more than 30 volts and 1000 volt-amperes.

(B) A Class 1 remote control circuit or a Class 1 signaling circuit has a voltage which does not exceed 600 volts; however, the power output of the source need not be limited.

(ii) **Class 2 and Class 3 circuits.**

(A) Power for Class 2 and Class 3 circuits is limited either inherently (in which no overcurrent protection is required) or by a combination of a power source and overcurrent protection.

(B) The maximum circuit voltage is 150 volts AC or DC for a Class 2 inherently limited power source, and 100 volts AC or DC for a Class 3 inherently limited power source.

(C) The maximum circuit voltage is 30 volts AC and 60 volts DC for a Class 2 power source limited by overcurrent protection, and 150 volts AC or DC for a Class 3 power source limited by overcurrent protection.

(iii) The maximum circuit voltages in items (a)(i) and (a)(ii) of this subsection apply to sinusoidal AC or continuous DC power sources, and where wet contact occurrence is not likely.

(b) **Marking.** A Class 2 or Class 3 power supply unit shall be durably marked where plainly visible to indicate the class of supply and its electrical rating. (See WAC 296-24-95603 (2)(c).)

(4) **Fire protective signaling systems.** (See WAC 296-24-95603 (2)(c).)

(a) **Classifications.** Fire protective signaling circuits shall be classified either as nonpower limited or power limited.

(b) **Power sources.** The power sources for use with fire protective signaling circuits shall be either power limited or nonlimited as follows:

(i) The power supply of nonpower-limited fire protective signaling circuits shall have an output voltage not in excess of 600 volts.

(ii) The power for power-limited fire protective signaling circuits shall be either inherently limited, in which no overcurrent protection is required, or limited by a combination of power source and overcurrent protection.

(c) **Nonpower-limited conductor location.** Nonpower-limited fire protective signaling circuits and Class 1 circuits may occupy the same enclosure, cable, or raceway provided all conductors are insulated for maximum voltage of any conductor within the enclosure, cable or raceway. Power supply and fire protective signaling circuit conductors are permitted in the same enclosure, cable, or raceway only if connected to the same equipment.

(d) **Power-limited conductor location.** Where open conductors are installed, power-limited fire protective signaling circuits shall be separated at least 2 inches from

conductors of any light, power, Class 1, and nonpower-limited fire protective signaling circuits unless a special and equally protective method of conductor separation is employed. Cables and conductors of two or more power-limited fire protective signaling circuits or Class 3 circuits are permitted in the same cable, enclosure, or raceway. Conductors of one or more Class 2 circuits are permitted within the same cable, enclosure, or raceway with conductors of power-limited fire protective signaling circuits provided that the insulation of Class 2 circuit conductors in the cable, enclosure, or raceway is at least that needed for the power-limited fire protective signaling circuits.

(e) **Identification.** Fire protective signaling circuits shall be identified at terminal and junction locations in a manner which will prevent unintentional interference with the signaling circuit during testing and servicing. Power-limited fire protective signaling circuits shall be durably marked as such where plainly visible at terminations.

(5) **Communications systems.**

(a) **Scope.** These provisions for communication systems apply to such systems as central-station-connected and noncentral-station-connected telephone circuits, radio and television receiving and transmitting equipment, including community antenna television and radio distribution systems, telegraph, district messenger, and outside wiring for fire and burglar alarm, and similar central station systems. These installations need not comply with the provisions of WAC 296-24-95605 through 296-24-95615(4) except 296-24-95607 (3)(a) and 296-24-95613(2).

(b) **Protective devices.**

(i) Communication circuits so located as to be exposed to accidental contact with light or power conductors operating at over 300 volts shall have each circuit so exposed provided with a protector approved for the purpose.

(ii) Each conductor of a lead-in from an outdoor antenna shall be provided with an antenna discharge unit or other suitable means that will drain static charges from the antenna system.

(c) **Conductor location.**

(i) **Outside of buildings.**

(A) Receiving distribution lead-in or aerial-drop cables attached to buildings and lead-in conductors to radio transmitters shall be so installed as to avoid the possibility of accidental contact with electric light or power conductors.

(B) The clearance between lead-in conductors and any lightning protection conductors may not be less than 6 feet.

(ii) **On poles.** Where practicable, communication conductors on poles shall be located below the light or power conductors. Communications conductors may not be attached to a crossarm that carries light or power conductors.

(iii) **Inside of buildings.** Indoor antennas, lead-ins, and other communication conductors attached as open conductors to the inside of buildings shall be located at least 2 inches from conductors of any light or power or Class 1 circuits unless a special and equally protective method of conductor separation, approved for the purpose, is employed.

(d) **Equipment location.** Outdoor metal structures supporting antennas, as well as self-supporting antennas such as vertical rods or dipole structures, shall be located as far away from overhead conductors of electric light and power circuits of over 150 volts to ground as necessary to avoid the possibility of the antenna or structure falling into or making accidental contact with such circuits.

(e) **Grounding.**

(i) **Lead-in conductors.** If exposed to contact with electric light and power conductors, the metal sheath of aerial cables entering buildings shall be grounded or shall be interrupted close to the entrance to the building by an insulating joint or equivalent device. Where protective devices are used, they shall be grounded in an approved manner.

(ii) **Antenna structures.** Masts and metal structures supporting antennas shall be permanently and effectively grounded without splice or connection in the grounding conductor.

(iii) **Equipment enclosures.** Transmitters shall be enclosed in a metal frame or grill or separated from the operating space by a barrier, all metallic parts of which are effectively connected to ground. All external metal handles and controls accessible to the operating personnel shall be effectively grounded. Unpowered equipment and enclosures shall be considered grounded where connected to an attached coaxial cable with an effectively grounded metallic shield.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95615, filed 3/30/82.]

WAC 296-24-95617 Reserved.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-95617, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95617, filed 3/30/82.]

WAC 296-24-95699 Appendices. Appendix A - Reference documents. The following references provide information which can be helpful in understanding and complying with the requirements contained in WAC 296-24-956 through 296-24-95615.

ANSI A17.1-71 Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks.
ANSI B9.1-71 Safety Code for Mechanical Refrigeration.
ANSI B30.2-76 Safety Code for Overhead and Gantry Cranes.
ANSI B30.3-75 Hammerhead Tower Cranes.
ANSI B30.4-73 Safety Code for Portal, Tower, and Pillar Cranes.
ANSI B30.5-68 Safety Code for Crawler, Locomotive, and Truck Cranes.
ANSI B30.6-77 Derricks.
ANSI B30.7-77 Base Mounted Drum Hoists.
ANSI B30.8-71 Safety Code for Floating Cranes and Floating Derricks.
ANSI B30.11-73 Monorail Systems and Underhung Cranes.
ANSI B30.12-75 Handling Loads Suspended from Rotorcraft.
ANSI B30.13-77 Controlled Mechanical Storage Cranes.
ANSI B30.15-73 Safety Code for Mobile Hydraulic Cranes.
ANSI B30.16-73 Overhead Hoists.
ANSI C2-81 National Electrical Safety Code.
ANSI C33.27-74 Safety Standard for Outlet Boxes and Fittings for Use in Hazardous Locations, Class I, Groups A, B, C, and D, and Class II, Groups E, F, and G.

ANSI K61.1-72 Safety Requirements for the Storage and Handling of Anhydrous Ammonia.
ASTM D2155-66 Test Method for Autoignition Temperature of Liquid Petroleum Products.
ASTM D3176-74 Method for Ultimate Analysis of Coal and Coke.
ASTM D3180-74 Method for Calculating Coal and Coke Analyses from as Determined to Different Bases.
IEEE 463-77 Standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones.
NFPA 20-76 Standard for the Installation of Centrifugal Fire Pumps.
NFPA 30-78 Flammable and Combustible Liquids Code.
NFPA 32-74 Standard for Drycleaning Plants.
NFPA 33-73 Standard for Spray Application Using Flammable and Combustible Materials.
NFPA 34-74 Standard for Dip Tanks Containing Flammable or Combustible Liquids.
NFPA 35-76 Standard for the Manufacture of Organic Coatings.
NFPA 36-74 Standard for Solvent Extraction Plants.
NFPA 40-74 Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.
NFPA 56A-73 Standard for the Use of Inhalation Anesthetics (Flammable and Nonflammable).
NFPA 56F-74 Standard for Nonflammable Medical Gas Systems.
NFPA 58-76 Standard for the Storage and Handling of Liquefied Petroleum Gases.
NFPA 59-76 Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants.
NFPA 70-78 National Electrical Code.
NFPA 70C-74 Hazardous Locations Classification.
NFPA 70E Standard for the Electrical Safety Requirements for Employee Workplaces.
NFPA 71-77 Standard for the Installation, Maintenance, and Use of Central Station Signaling Systems.
NFPA 72A-75 Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Watchman, Fire Alarm, and Supervisory Service.
NFPA 72B-75 Standard for the Installation, Maintenance, and Use of Auxiliary Protective Signaling Systems for Fire Alarm Service.
NFPA 72C-75 Standard for the Installation, Maintenance, and Use of Remote Station Protective Signaling Systems.
NFPA 72D-75 Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems for Watchman, Fire Alarm, and Supervisory Service.
NFPA 72E-74 Standard for Automatic Fire Detectors.
NFPA 74-75 Standard for Installation, Maintenance, and Use of Household Fire Warning Equipment.
NFPA 76A-73 Standard for Essential Electrical Systems for Health Care Facilities.
NFPA 77-72 Recommended Practice on Static Electricity.
NFPA 80-77 Standard for Fire Doors and Windows.
NFPA 86A-73 Standard for Ovens and Furnaces; Design, Location and Equipment.
NFPA 88A-73 Standard for Parking Structures.
NFPA 88B-73 Standard for Repair Garages.
NFPA 91-73 Standard for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal, or Conveying.
NFPA 101-78 Code for Safety to Life from Fire in Buildings and Structures. (Life Safety Code.)
NFPA 325M-69 Fire-Hazard Properties of Flammable Liquids, Gases, and Volatile Solids.
NFPA 493-75 Standard for Intrinsically Safe Apparatus for Use in Class I Hazardous Locations and its Associated Apparatus.
NFPA 496-74 Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations.
NFPA 497-75 Recommended Practice for Classification of Class I Hazardous Locations for Electrical Installations in Chemical Plants.
NFPA 505-75 Fire Safety Standard for Powered Industrial Trucks Including Type Designations and Areas of Use.
NMAB 353-1-79 Matrix of Combustion-Relevant Properties and Classification of Gases, Vapors, and Selected Solids.
NMAB 353-2-79 Test Equipment for Use in Determining Classifications of Combustible Dusts.
NMAB 353-3-80 Classification of Combustible Dusts in Accordance with the National Electrical Code.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95699, filed 3/30/82.]

WAC 296-24-960 Working on or near exposed energized parts. (1) Application. This section applies to work performed on exposed live parts (involving either direct contact or contact by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.

(2) Work on energized equipment. Only qualified persons shall work on electric circuit parts or equipment that have not been deenergized under the procedures of WAC 296-24-975(2). Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

(3) General requirements - high voltage lines.

(a) Minimum clearance.

(i) No work shall be performed, no material shall be piled, stored or otherwise handled, no scaffolding, commercial signs, or structures shall be erected or dismantled, nor any tools, machinery or equipment operated within the specified minimum distances from any energized high voltage electrical conductor capable of energizing the material or equipment; except where the electrical distribution and transmission lines have been deenergized and visibly grounded at point of work, or where insulating barriers not a part of or an attachment to the equipment have been erected, to prevent physical contact with the lines, equipment shall be operated proximate to, under, over, by, or near powerlines only in accordance with the following:

(ii) For lines rated 50 kv. or below, minimum clearance between the lines and any part of the equipment or load shall be 10 feet.

(iii) For lines rated over 50 kv. minimum, clearance between the lines and any part of the equipment or load shall

be 10 feet plus 0.4 inch for each 1 kv. over 50 kv., or twice the length of the line insulator but never less than 10 feet.

(b) Overhead electric lines. Where overhead electric conductors are encountered in proximity to a work area, the employer shall be responsible for:

(i) Ascertaining the voltage and minimum clearance distance required, and

(ii) Maintaining the minimum clearance distance, and

(iii) Ensuring that the requirements of subsection (3) of this section are complied with.

(c) Not covered: Employees working under chapters 296-32 and 296-45 WAC.

(4) Low voltage lines. When work is being carried out in proximity to energized electrical service conductors operating at 750 volts or less, such work shall be performed in a manner to prevent contact by any worker with the energized conductors.

(5) Overhead lines. If work is to be performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before work is started. If the lines are to be deenergized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

(6) Unqualified persons. When an unqualified person is working in an elevated position, or on the ground, near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

(a) For voltages to ground 50kV or below—10 ft.;

(b) For voltages to ground over 50kV—10 ft. plus 0.4 inch for every 1 kV over 50 kV.

(7) Qualified persons. When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person shall not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in subsections (3) and (4) of this section unless:

(a) The person is insulated from the energized part (gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed); or

(b) The energized part is insulated both from all other conductive objects at a different potential and from the person; or

(c) The person is insulated from all conductive objects at a potential different from that of the energized part.

(8) Vehicular and mechanical equipment.

(a) Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 ft. is maintained. If the voltage is higher than 50kV, the clearance shall be increased 0.4 inch for every 1kV over that voltage. However, under any of the following conditions, the clearance may be reduced:

(i) If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, the clearance shall be increased 0.4 inch for every 1kV over that voltage.

(ii) If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

(b) If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance given in subsections (3) and (4) of this section.

(c) Employees standing on the ground shall not contact the vehicle or mechanical equipment or any of its attachments, unless:

(i) The employee is using protective equipment rated for the voltage; or

(ii) The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted in this section.

(d) If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding shall not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

(9) Illumination.

(a) Employees shall not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely.

(b) Where lack of illumination or an obstruction precludes observation of the work to be performed, employees shall not perform tasks near exposed energized parts. Employees shall not reach blindly into areas which may contain energized parts.

(10) Confined or enclosed work spaces. When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

(11) Conductive materials and equipment. Conductive materials and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, the employer shall institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.

(12) Portable ladders. Portable ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

(13) Conductive apparel. Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) shall not be worn if they might contact exposed energized parts.

(14) Housekeeping duties.

(a) Where live parts present an electrical contact hazard, employees shall not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided.

(b) Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) shall not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

(15) Interlocks. Only a qualified person following the requirements of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system shall be returned to its operable condition when this work is completed.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-960, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-960, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-960, filed 6/11/82; 82-02-003 (Order 81-32), § 296-24-960, filed 12/24/81.]

WAC 296-24-965 Safety-related work practices. (1) Scope. Covered work by both qualified and unqualified persons. The provisions of WAC 296-24-960 through 296-24-985 cover electrical safety-related work practices for both qualified persons (those who have training in avoiding the electrical hazards of working on or near exposed energized parts) and unqualified persons (those with little or no such training) working on, near, or with the following installations:

(a) Premises wiring. Installations of electric conductors and equipment within or on buildings or other structures, and on other premises such as yards, carnival, parking, and other lots, and industrial substations;

(b) Wiring for connection to supply. Installations of conductors that connect to the supply of electricity;

(c) Other wiring. Installations of other outside conductors on the premises; and

(d) Optical fiber cable. Installations of optical fiber cable where such installations are made along with electric conductors.

Note: See WAC 296-24-95601 for the definition of "qualified person." See WAC 296-24-970 for training requirements that apply to qualified and unqualified persons.

(2) Other covered work by unqualified persons. The provisions of WAC 296-24-960 through 296-24-985 also cover work performed by unqualified persons on, near, or with the installations listed in subsection (3) of this section.

(3) Excluded work by qualified persons. The provisions of WAC 296-24-960 through 296-24-985 do not apply to work performed by qualified persons on or directly associated with the following installations:

(a) Generation, transmission, and distribution installations. Installations for the generation, control, transformation, transmission, and distribution of electric energy (including communication and metering) located in buildings used for such purposes or located outdoors.

Note 1: Work on or directly associated with installations of utilization equipment used for purposes other than generating, transmitting, or distributing electric energy (such as installations which are in office buildings, warehouses, garages, machine shops, or recreational buildings, or other utilization installations which are not an integral part of a generating installation, substation, or control center) is covered under subsection (1)(a) of this section.

Note 2: Work on or directly associated with generation, transmission, or distribution installations includes:

1. Work performed directly on such installations, such as repairing overhead or underground distribution lines or repairing a feed-water pump for the boiler in a generating plant.
2. Work directly associated with such installations, such as line-clearance tree trimming and replacing utility poles.
3. Work on electric utilization circuits in a generating plant provided that:
   a. Such circuits are commingled with installations of power generation equipment or circuits; and
   b. The generation equipment or circuits present greater electrical hazards than those posed by the utilization equipment or circuits (such as exposure to higher voltages or lack of overcurrent protection).

(b) Communications installations. Installations of communication equipment to the extent that the work is covered under chapter 296-32 WAC.

(c) Installations in vehicles. Installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles.

(d) Railway installations. Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations of railways used exclusively for signaling and communication purposes.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-965, filed 11/22/91, effective 12/24/91.]

WAC 296-24-970 Training. (1) Scope. The training requirements contained in this section apply to employees who face a risk of electric shock that is not reduced to a safe level by the electrical installation requirements of WAC 296-24-95605 through 296-24-95615.

Note: Employees in occupations listed in Table S-4 face such a risk and are required to be trained. Other employees who also may reasonably be expected to face a comparable risk of injury due to electric shock or other electrical hazards must also be trained.

(2) Content of training.

(a) Practices addressed in this standard. Employees shall be trained in and familiar with the safety-related work practices required by WAC 296-24-960 through 296-24-985 that pertain to their respective job assignments.

(b) Additional requirements for unqualified persons. Employees who are covered by subsection (1) of this section but who are not qualified persons shall also be trained in and familiar with any electrically related safety practices not specifically addressed by WAC 296-24-960 through 296-24-985 but which are necessary for their safety.

(c) Additional requirements for qualified persons. Qualified persons (i.e., those permitted to work on or near

exposed energized parts) shall, at a minimum, be trained in and familiar with the following:

(i) The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment;

(ii) The skills and techniques necessary to determine the nominal voltage of exposed live parts; and

(iii) The clearance distances specified in WAC 296-24-960 and the corresponding voltages to which the qualified person will be exposed.

Note 1: For the purposes of WAC 296-24-960 through 296-24-985 a person must have the training required by (c) of this subsection in order to be considered a qualified person.

Note 2: Qualified persons whose work on energized equipment involves either direct contact or contact by means of tools or materials must also have the training needed to meet WAC 296-24-960.

(3) Type of training. The training required by this section shall be of the classroom or on-the-job type. The degree of training provided shall be determined by the risk to the employee.

TABLE S-4.—TYPICAL OCCUPATIONAL CATEGORIES OF EMPLOYEES FACING A HIGHER THAN NORMAL RISK OF ELECTRICAL ACCIDENT

Occupation
Blue collar supervisors.[1]
Electrical and electronic engineers.[1]
Electrical and electronic equipment assemblers.[1]
Electrical and electronic technicians.[1]
Electricians.
Industrial machine operators.[1]
Material handling equipment operators.[1]
Mechanics and repairers.[1]
Painters.[1]
Riggers and roustabouts.[1]
Stationary engineers.[1]
Welders.

1 Workers in these groups do not need to be trained if their work or the work of those they supervise does not bring them or the employees they supervise close enough to exposed parts of electric circuits operating at 50 volts or more to ground for a hazard to exist.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-970, filed 11/22/91, effective 12/24/91.]

WAC 296-24-975 Selection and use of work practices. (1) General. Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

(a) Deenergized parts. Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Note 1: Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

Note 2: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

Note 3: Work on or near deenergized parts is covered by subsection (2) of this section.

(b) Energized parts. If the exposed live parts are not deenergized (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts. Specific work practice requirements are detailed in WAC 296-24-960.

(2) Working on or near exposed deenergized parts.

(a) Application. This subsection applies to work on exposed deenergized parts or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electric equipment that have been deenergized but have not been locked out or tagged according to this subsection shall be treated as energized parts, and WAC 296-24-960 applies to work on or near them.

(b) Lockout and tagging. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both according to the requirements of this section. The requirements shall be followed in the order in which they are presented (i.e., (b)(i) of this subsection first, then (b)(ii) of this subsection.

Note 1: As used in this section, fixed equipment refers to equipment fastened in place or connected by permanent wiring methods.

Note 2: Lockout and tagging procedures that comply with chapter 296-24 WAC Part A-4 will also be deemed to comply with (b) of this subsection provided that:
1. The procedures address the electrical safety hazards covered by this part; and
2. The procedures also incorporate the requirements of (b)(iii)(D) and (b)(iv)(B) of this subsection.

(i) Procedures. The employer shall maintain a written copy of the procedures outlined in (b) of this subsection and shall make it available for inspection by employees and by the director and his or her authorized representatives.

Note: The written procedures may be in the form of a copy of subsection (2) of this section.

(ii) Deenergizing equipment.

(A) Safe procedures for deenergizing circuits and equipment shall be determined before circuits or equipment are deenergized.

(B) The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, shall not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment shall not be used as a substitute for lockout and tagging procedures.

(C) Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

Note: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

(D) Stored nonelectrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

(iii) Application of locks and tags.

(A) A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed, except as provided in subitems (C) and (E) of this item. The lock shall be attached to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

(B) Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

(C) If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

(D) A tag used without a lock, as permitted by subitem (C) of this item, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

(E) A lock may be placed without a tag only under the following conditions:

(I) Only one circuit or piece of equipment is deenergized; and

(II) The lockout period does not extend beyond the work shift; and

(III) Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.

(iv) Verification of deenergized condition. The requirements of this subsection shall be met before any circuits or equipment can be considered and worked as deenergized.

(A) A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

(B) A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are deenergized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately before and immediately after this test.

(v) Reenergizing equipment. These requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.

(A) A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

(B) Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.

(C) Each lock and tag shall be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that:

(I) The employer ensures that the employee who applied the lock or tag is not available at the workplace; and

(II) The employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.

(D) There shall be a visual determination that all employees are clear of the circuits and equipment.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-975, filed 7/20/94, effective 9/20/94; 91-24-017 (Order 91-07), § 296-24-975, filed 11/22/91, effective 12/24/91.]

WAC 296-24-980 Safeguards for personnel protection. (1) Use of protective equipment.

(a) Personal protective equipment.

(i) Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed.

Note: Personal protective equipment requirements are contained in chapter 296-24 WAC Part A-2.

(ii) Protective equipment shall be maintained in a safe, reliable condition and shall be periodically inspected or tested, as required by chapter 296-24 WAC Part A-2.

(iii) If the insulating capability of protective equipment may be subject to damage during use, the insulating material shall be protected. (For example, an outer covering of leather is sometimes used for the protection of rubber insulating material.)

(iv) Employees shall wear nonconductive head protection wherever there is a danger of head injury from electric shock or burns due to contact with exposed energized parts.

(v) Employees shall wear protective equipment for the eyes or face wherever there is danger of injury to the eyes or face from electric arcs or flashes or from flying objects resulting from electrical explosion.

(b) General protective equipment and tools.

(i) When working near exposed energized conductors or circuit parts, each employee shall use insulated tools or handling equipment if the tools or handling equipment might make contact with such conductors or parts. If the insulating

capability of insulated tools or handling equipment is subject to damage, the insulating material shall be protected.

(A) Fuse handling equipment, insulated for the circuit voltage, shall be used to remove or install fuses when the fuse terminals are energized.

(B) Ropes and handlines used near exposed energized parts shall be nonconductive.

(ii) Protective shields, protective barriers, or insulating materials shall be used to protect each employee from shock, burns, or other electrically related injuries while that employee is working near exposed energized parts which might be accidentally contacted or where dangerous electric heating or arcing might occur. When normally enclosed live parts are exposed for maintenance or repair, they shall be guarded to protect unqualified persons from contact with the live parts.

(2) Alerting techniques. The following alerting techniques shall be used to warn and protect employees from hazards which could cause injury due to electric shock, burns, or failure of electric equipment parts:

(a) Safety signs and tags. Safety signs, safety symbols, or accident prevention tags shall be used where necessary to warn employees about electrical hazards which may endanger them, as required by chapter 296-24 WAC Part B-2.

(b) Barricades. Barricades shall be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas exposing employees to uninsulated energized conductors or circuit parts. Conductive barricades may not be used where they might cause an electrical contact hazard.

(c) Attendants. If signs and barricades do not provide sufficient warning and protection from electrical hazards, an attendant shall be stationed to warn and protect employees.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-980, filed 11/22/91, effective 12/24/91.]

WAC 296-24-985 Use of equipment. (1) Portable electric equipment. This section applies to the use of cord- and plug-connected equipment, including flexible cord sets (extension cords).

(a) Handling. Portable equipment shall be handled in a manner which will not cause damage. Flexible electric cords connected to equipment shall not be used for raising or lowering the equipment. Flexible cords shall not be fastened with staples or otherwise hung in such a fashion as could damage the outer jacket or insulation.

(b) Visual inspection.

(i) Portable cord- and plug-connected equipment and flexible cord sets (extension cords) shall be visually inspected before use on any shift for external defects (such as loose parts, deformed and missing pins, or damage to outer jacket or insulation) and for evidence of possible internal damage (such as pinched or crushed outer jacket). Cord- and plug-connected equipment and flexible cord sets (extension cords) which remain connected once they are put in place and are not exposed to damage need not be visually inspected until they are relocated.

(ii) If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item shall be removed from service, and no employee shall use it until repairs and tests necessary to render the equipment safe have been made.

(iii) When an attachment plug is to be connected to a receptacle (including any on a cord set), the relationship of the plug and receptacle contacts shall first be checked to ensure they are of proper mating configurations.

(c) Grounding-type equipment.

(i) A flexible cord used with grounding-type equipment shall contain an equipment grounding conductor.

(ii) Attachment plugs and receptacles shall not be connected or altered in a manner which would prevent proper continuity of the equipment grounding conductor at the point where plugs are attached to receptacles. Additionally, these devices shall not be altered to allow the grounding pole of a plug to be inserted into slots intended for connection to the current-carrying conductors.

(iii) Adapters which interrupt the continuity of the equipment grounding connection shall not be used.

(d) Conductive work locations. Portable electric equipment and flexible cords used in highly conductive work locations (such as those inundated with water or other conductive liquids), or in job locations where employees are likely to contact water or conductive liquids, shall be approved for those locations.

(e) Connecting attachment plugs.

(i) Employees' hands shall not be wet when plugging and unplugging flexible cords and cord- and plug-connected equipment, if energized equipment is involved.

(ii) Energized plug and receptacle connections shall be handled only with insulating protective equipment if the condition of the connection could provide a conducting path to the employee's hand (if, for example, a cord connector is wet from being immersed in water).

(iii) Locking-type connectors shall be properly secured after connection.

(2) Electric power and lighting circuits.

(a) Routine opening and closing of circuits. Load rated switches, circuit breakers, or other devices specifically designed as disconnecting means shall be used for the opening, reversing, or closing of circuits under load conditions. Cable connectors not of the load-break type, fuses, terminal lugs, and cable splice connections shall not be used for such purposes, except in an emergency.

(b) Reclosing circuits after protective device operation. After a circuit is deenergized by a circuit protective device, the circuit shall not be manually reenergized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or reenergizing circuits through replaced fuses is prohibited.

Note: When it can be determined from the design of the circuit and the overcurrent devices involved that the automatic operation of a device was caused by an overload rather than a fault condition, no examination of the circuit or connected equipment is needed before the circuit is reenergized.

(c) Overcurrent protection modification. Overcurrent protection of circuits and conductors shall not be modified, even on a temporary basis, beyond that allowed by chapter 296-24 WAC Part L the installation safety requirements for overcurrent protection.

(3) Test instruments and equipment.

(a) Use. Only qualified persons shall perform testing work on electric circuits or equipment.

(b) Visual inspection. Test instruments and equipment and all associated test leads, cables, power cords, probes, and connectors shall be visually inspected for external defects and damage before the equipment is used. If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item shall be removed from service, and no employee shall use it until necessary repairs and tests to render the equipment safe have been made.

(c) Rating of equipment. Test instruments and equipment and their accessories shall be rated for the circuits and equipment to which they will be connected and shall be designed for the environment in which they will be used.

(4) Occasional use of flammable or ignitible materials. Where flammable materials are present only occasionally, electric equipment capable of igniting them shall not be used, unless measures are taken to prevent hazardous conditions from developing. Such materials include, but are not limited to: Flammable gases, vapors, or liquids; combustible dust; and ignitible fibers or flyings.

Note: Electrical installation requirements for locations where flammable materials are present on a regular basis are contained in WAC 296-24-95613.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-985, filed 11/22/91, effective 12/24/91.]

Chapter 296-27 WAC
RECORDKEEPING AND REPORTING

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-27-16005 Objects of inspection. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16005, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16009 Follow-up inspections. [Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-16009, filed 1/17/86; 81-14-006 (Order 81-13), § 296-27-16009, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16013 WISHA—Required investigations and inspections. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16013, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16015 WITS—In general. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16015, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16017 WITS—Safety. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16017, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16019 WITS—Safety. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16019, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16021 WITS—Safety—Limit on number of inspections. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16021, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-16023 Adjustment factors. [Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16023, filed 6/22/81.] Repealed by 87-03-011 (Order 86-48), filed 1/12/87. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-27-200 Posting of notice, availability of act regulations and applicable standards. [Order 74-22, § 296-27-200, filed 5/6/74.] Repealed by Order 75-14, filed 4/14/75. See WAC 296-350-400.

WAC 296-27-010 Purpose and scope. The regulations of this chapter implement sections RCW 49.17.050(5), 49.17.220(1), 49.17.220(2), 49.17.230, and 49.17.260 of the Washington Industrial Safety and Health Act of 1973. These sections provide for recordkeeping and reporting by employers covered under the act as necessary or appropriate for enforcement of the act, for developing information regarding the causes and prevention of occupational accidents and illnesses, and for maintaining a program of collection, compilation, and analysis of industrial safety and health statistics.

Pursuant to the provisions of 29 CFR 1904.10, records maintained by an employer and reports submitted pursuant to, and in accordance with the requirements of an approved state plan under section 18 of the Federal Occupational Safety and Health Act of 1970 (Public Law 91-596, 84 STAT. 1590) shall be regarded as compliance with 29 CFR

Part 1904 - "Recording and reporting occupational injuries and illnesses."

Compliance with and requirements of this chapter, as recognized by the Washington industrial safety and health state plan, is regarded as compliance with the provisions of the above-cited federal requirements. Employers complying with the recordkeeping and reporting requirements of this chapter are not required to keep records as required by the federal recordkeeping and reporting regulations (Ref. 29 CFR 1904.10).

The recordkeeping and reporting requirements of this chapter are separate and distinct from the record keeping and reporting requirements under Title 51 RCW (the Industrial Insurance Act) unless otherwise noted in this chapter.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-010, filed 6/28/78; Order 74-22, § 296-27-010, filed 5/6/74.]

WAC 296-27-020 Definitions. (1) "Act" means the Washington Industrial Safety and Health Act of 1973, chapter 49.17 RCW, as now or hereafter amended.

(2) The definitions and interpretations included in RCW 49.17.020 shall be applicable to such terms when used in this chapter, unless a different interpretation is clearly required by the context.

(3) "Recordable occupational injuries or illnesses of employees" means any occupational injury or illness of employees which result in:

(a) Occupational fatalities, regardless of the length of time between injury and death, or the length of the illness preceding the time of death (no recording is required for fatalities occurring after a termination of employment, except when recording may otherwise be required by a specific industrial safety and health standard adopted pursuant to the act); or

(b) Lost workday cases, other than fatalities, that result in lost workdays (see subsection (7) of this section); or

(c) Occupational illnesses, or nonfatal cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.

(4) "Medical treatment" means and includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

(5) "First-aid treatment" means any one-time treatment, and any follow-up visit or visits for the purpose of observation of minor scratches, cuts, burns, splinters and so forth which do not ordinarily require professional medical care, the extent of treatment that could be expected to be given by a person trained in basic first-aid using supplies from a first-aid kit. Such one-time treatment and follow-up visit or visits for the purpose of observation are considered first aid even though provided by a physician or registered professional personnel. Tests, such as x-rays, shall not be confused with treatment.

(6) "Hospitalization" means to be sent to; to go to; or be admitted to a hospital or an equivalent medical facility and receive medical treatment beyond what would be generally classified as first-aid treatment.

(7) "Lost workdays":

(a) "Lost workdays - days away from work" means the number of days (consecutive or not) after the day of injury or illness which the employee would have worked but could not because of occupational injury or illness. The number of "lost workdays - days away from work," should not include the day of the injury, or the day the illness occurred, or any days which the employee was not scheduled to work; e.g. Saturday, Sunday, or holidays.

(b) "Lost workdays - days of restricted activity" means the number of workdays (consecutive or not) on which, because of the injury or illness:

(i) The employee was assigned to a temporary job; or

(ii) The employee worked at a permanent job less than full time; or

(iii) The employee worked at a permanently assigned job but could not perform all the duties normally assigned to that job.

The number of "lost workdays - days of restricted activity" should not include the day of the injury or the day the illness occurred, or any other days which the employee was not scheduled to work; e.g. Saturday, Sunday, or holidays, etc.

(8) "Establishment" means:

(a) A single physical location where business is conducted or where services or industrial operations are performed. (For example: A factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office.) Where distinctly separate activities are performed at a single physical location, such as contract construction activities operated from the same physical location as a lumber yard, each activity shall be treated as a separate establishment.

(b) For firms engaged in activities such as agriculture, construction, transportation, communications, electric, gas or sanitary services, which may be physically disbursed, "establishment" means a place to which employees report each day.

(c) For employees who do not primarily report or work at a single establishment, and who are generally not supervised in their daily work, such as travelling salesmen, technicians, engineers, etc., "establishment" means the location from which they are paid, or the base from which employees operate to carry out their activities.

(9) Establishments classified in standard industrial classification codes (SIC) 52 through 89.

(a) Establishments whose primary activity constitutes retail trade; finance, insurance, real estate and services are classified in SIC's 52 through 89.

(b) Retail trades are classified as SIC's 52 through 59 and for the most part include establishments engaged in selling merchandise to the general public for personal or household consumption. Some of the retail trades are: Automotive dealers, apparel and accessory stores, furniture and home furnishing stores, and eating and drinking places.

(c) Finance, insurance and real estate are classified as SIC's 60 through 67 and include establishments which are

engaged in banking, credit other than banking, security dealings, insurance, and real estate.

(d) Services are classified as SIC's 70 through 89 and include establishments which provide a variety of services for individuals, businesses, government agencies, and other organizations. Some of the service industries are: Personal and business services, in addition to legal, education, social, and cultural; and membership organizations.

(e) The primary activity of an establishment is determined as follows: For finance, insurance, real estate, and services establishments, the value of receipts or revenue for services rendered by an establishment determines its primary activity. In establishments with diversified activities, the activities determined to account for the largest share of production, sales or revenue will identify the primary activity. In some instances these criteria will not adequately represent the relative economic importance of each of the varied activities. In such cases, employment or payroll should be used in place of the normal basis for determining the primary activity.

(10) "WISHERS" means Washington industrial safety and health evaluation and reporting system.

(11) "WISHA poster" means the job safety and health protection poster - form F416-081-000.

(12) "Occupational illness" means such illness as arises naturally and approximately out of employment under the provisions of the act.

Note: Examples of occupational illnesses appear on the instruction page of Form OSHA No. 200.

(13) "Occupational" means industrial and industrial means occupational.

(14) "OSHA" means occupational safety and health administration.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-27-020, filed 11/22/91, effective 12/24/91; 89-11-035 (Order 89-03), § 296-27-020, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-27-020, filed 7/13/83, effective 9/12/83. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-020, filed 6/28/78; Order 74-22, § 296-27-020, filed 5/6/74.]

WAC 296-27-030 Log and summary of occupational injuries and illnesses. (1) Except as provided in subsection (2) of this section, each employer shall:

(a) Maintain in each establishment a log and summary of all recordable occupational injuries and illnesses for that establishment; and

(b) Enter each recordable injury and illness on the log as early as practicable, but no later than six working days after receiving information that a recordable case has occurred. For this purpose Form OSHA No. 200 or an equivalent which is as readable and comprehensible to a person not familiar with it shall be used. The log and summary shall be completed in the detail provided in instructions on Form OSHA No. 200.

(2) Any employer may maintain the log and summary of all recordable occupational injuries and illnesses at a place other than the establishment or by means of data processing equipment, or both, if at each of the employer's establishments there is available a copy of the log and summary which reflects separately the injury and illness experience of that establishment complete and current to a date within forty-five calendar days.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-030, filed 7/31/79. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-030, filed 6/28/78; Order 74-22, § 296-27-030, filed 5/6/74.]

WAC 296-27-040 Period covered by logs. Logs and summaries of occupational injuries and illnesses shall be established on a calendar year basis.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-040, filed 7/31/79; Order 74-22, § 296-27-040, filed 5/6/74.]

WAC 296-27-050 Supplementary record. In addition to the log and summary of occupational injuries and illnesses provided for under WAC 296-27-030, each employer shall have available for inspection at each establishment or other location as specified in WAC 296-27-020 within six working days after receiving information that a recordable case has occurred, a supplementary record for each occupational injury or illness for that establishment. The record shall be completed in the detail prescribed in the instructions accompanying Form OSHA No. 101. The department of labor and industries accident report Form F 242-130-000 may be used as an alternative to the Form OSHA 101. Other reports are acceptable alternative records if they contain the information required by Form OSHA No. 101. If no acceptable alternative record is maintained for other purposes, Form OSHA No. 101 shall be used for the necessary information or shall be otherwise maintained in a convenient form.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-050, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-050, filed 7/31/79. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-050, filed 6/28/78; Order 74-22, § 296-27-050, filed 5/6/74.]

WAC 296-27-060 Annual summary. (1) Each employer shall post an annual summary of occupational injuries and illnesses for each establishment. This summary shall consist of a copy of the year's totals from the Form OSHA No. 200 and the following information from that form: Calendar year covered, company name, establishment name, establishment address, certification signature, title, and date. A Form OSHA No. 200 shall be used in presenting the summary. If no injuries or illnesses occurred in the year, zeros must be entered on the totals line, and the form must be posted.

(2) The summary shall be completed by February 1 each calendar year.

(3) Each employer, or the officer or employee of the employer who supervises the preparation of the log and summary of occupational injuries and illnesses, shall certify that the annual summary of occupational injuries and illnesses is true and complete. The certification shall be accomplished by affixing the signature of the employer, or the officer or employer who supervises the preparation of the annual summary of occupational injuries and illnesses, at the bottom of the last page of the log and summary, or by

appending a separate statement to the log and summary certifying that the summary is true and complete.

(4)(a) Each employer shall post a copy of the establishment's summary in each establishment. The summary covering the previous calendar year shall be posted no later than February 1, and shall remain in place until March 1. For employees who do not primarily report or work at a single establishment, or who do not report to any fixed establishment on a regular basis, employers shall satisfy this posting requirement by presenting or mailing a copy of the summary portion of the log and summary during the month of February of the following year to each such employee who receives pay during that month. For multi-establishment employers where operations have closed down in some establishments during the calendar year, it will not be necessary to post summaries for those establishments.

(b) A failure to post a copy of the establishment's summary, or otherwise satisfy the posting requirements as specified in this section, may result in the issuance of citations and assessments of penalties pursuant to RCW 49.17.120 and 49.17.180.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-060, filed 7/20/94, effective 9/20/94. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-060, filed 6/28/78; Order 74-22, § 296-27-060, filed 5/6/74.]

WAC 296-27-070 Retention of records. Records provided for in WAC 296-27-030, 296-27-050, and 296-27-060 including Form OSHA No. 200 shall be retained in each establishment for five years following the end of the year to which they relate.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-070, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-070, filed 7/31/79; Order 74-22, § 296-27-070, filed 5/6/74.]

WAC 296-27-075 Employees not in fixed establishments. Employers of employees engaged in physically dispersed operations, such as occur in construction, installation, repair or service activities, who do not report to any fixed establishment on a regular basis, but are subject to common supervision, may satisfy the provisions of WAC 296-27-030, 296-27-050, and 296-27-070, with respect to such employees by:

(1) Maintaining the required records for each operation, or group of operations which is subject to common supervision (field superintendent, field supervisor, etc.) in an established central place;

(2) Having the address and telephone number of the central place available at each worksite; and

(3) Having personnel available at the central place during normal business hours to provide information from the records maintained there by telephone or mail.

[Order 74-22, § 296-27-075, filed 5/6/74.]

WAC 296-27-077 Small employers. (1) An employer who had no more than ten employees at any time during the calendar year immediately preceding the current calendar year need not comply with any of the requirements of this chapter except the following:

(a) Obligation to report under WAC 296-27-090 concerning fatalities or multiple hospitalization accidents; and

(b) Obligation to maintain a log of occupational injuries and illnesses under WAC 296-27-030 and to make reports under WAC 296-27-140 upon being notified in writing by the bureau of labor statistics and the department of labor and industries that the employer has been selected to participate in a statistical survey of occupational injuries and illnesses.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-077, filed 6/28/78.]

WAC 296-27-078 Private employers classified in standard industrial classification codes (SIC) 52 through 89, (except 52 through 54, 70, 75, 76, 79 and 80). A private employer whose establishment is classified in SIC's 52 through 89, (excluding 52 through 54, 70, 75, 76, 79 and 80) need not comply, for such establishment, with the recordkeeping requirements of this chapter except the following:

(1) Obligation to report under WAC 296-27-090 concerning fatalities or multiple hospitalization accidents.

(2) Obligation to maintain a log of occupational injuries and illnesses under WAC 296-27-140, upon being notified in writing by the Bureau of Labor Statistics that the employer has been selected to participate in a statistical survey of occupational injuries and illnesses.

(3) The requirements of this section shall become effective January 1, 1984.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-078, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-27-078, filed 11/30/83; 83-15-017 (Order 83-19), § 296-27-078, filed 7/13/83, effective 9/12/83.]

WAC 296-27-080 Access to records. (1) Each employer shall provide upon request records provided for in WAC 296-27-030, 296-27-050, and 296-27-060, for inspection and copying by designated or authorized representatives of the department of labor and industries, compliance safety and health officers of the Occupational Safety and Health Administration, U.S. Department of Labor during any occupational safety and health inspection provided for under 29 CFR 1903 and section 8 of the Federal Occupational Safety and Health Act, by any representatives of the Bureau of Labor Statistics, U.S. Department of Labor, or by any representative of the Secretary of Health and Human Services during any investigation under section 20(b) of the Federal Occupational Safety and Health Act.

(2)(a) The log and summary of all recordable occupational injuries and illnesses (OSHA No. 200) (the log) provided for in WAC 296-27-030 shall, upon request, be made available by the employer to any employee, former employee, and to their representatives for examination and copying in a reasonable manner and at reasonable times. The employee, former employee, and their representatives shall have access to the log for any establishment in which the employee is or has been employed.

(b) Nothing in this section shall be deemed to preclude employees and employee representatives from collectively bargaining to obtain access to information relating to

occupational injuries and illnesses in addition to the information made available under this section.

(c) Access to the log provided under this section shall pertain to all logs retained under the requirements of WAC 296-27-070.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-080, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-080, filed 7/31/79; Order 74-22, § 296-27-080, filed 5/6/74.]

WAC 296-27-090 Reporting of fatality or multiple hospitalization incidents. (1) Within eight hours after the fatality or probable fatality of any employee from a work-related incident or the inpatient hospitalization of two or more employees as a result of a work-related incident, the employer of any employees so affected, shall orally report the fatality/multiple hospitalization by telephone or in person, to the nearest office of the department or by using the OSHA toll-free central telephone number, 1-800-321-6742.

(a) This requirement applies to each such fatality or hospitalization of two or more employees which occurs within thirty days of the incident.

(b) Exception: If any employer does not learn of a reportable incident at the time it occurs and the incident would otherwise be reportable under this subsection, the employer shall make a report within eight hours of the time the incident is reported to any agent or employee of the employer.

(c) Each report required by this subsection shall relate the following information: Establishment name, location of the incident, time of the incident, number of fatalities or hospitalized employees, contact person, phone number, and a brief description of the incident.

(2) Equipment involved in an incident resulting in an immediate or probable fatality or in the in-patient hospitalization of two or more employees shall not be moved until a representative of the department of labor and industries investigates the incident and authorizes removal of such equipment. When removal of such equipment is necessary in order to prevent further incident or to remove the victim, such equipment may be moved as required.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-27-090, filed 9/30/94, effective 11/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-090, filed 1/17/86; Order 74-22, § 296-27-090, filed 5/6/74.]

WAC 296-27-100 Falsification, failure to keep records or reports. (1) RCW 49.17.190(2) of the act provides that "whoever knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this chapter shall, upon conviction, be guilty of a gross misdemeanor and be punished by a fine of not more than $10,000, or by imprisonment of not more than six months, or by both."

(2) Failure to maintain records or file reports required by this chapter, or in the detail required by the forms and instructions issued under this chapter, may result in the issuance of citations and assessment of penalties as provided for in RCW 49.17.120, 49.17.140, 49.17.180, or 49.17.190.

[Order 74-22, § 296-27-100, filed 5/6/74.]

WAC 296-27-110 Change of ownership. Where an establishment has changed ownership, the employer shall be responsible for maintaining records and filing reports only for that period of the year during which he/she owned such establishment. However, in the case of any change of ownership, the employer shall preserve those records, if any, of the prior ownership which are required to be kept under this chapter. These records shall be retained at each establishment to which they relate, for the period, or the remainder thereof, required under WAC 296-27-070.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-110, filed 7/20/94, effective 9/20/94; Order 74-22, § 296-27-110, filed 5/6/74.]

WAC 296-27-120 Petitions for recordkeeping exceptions. (1)(a) In order to achieve a uniform, national system for the recordkeeping and reporting of occupational injuries and illnesses, the state of Washington and the United States Department of Labor have agreed that as applied to employers as defined by subsection 3(5) of the Occupational Safety and Health Act of 1970 (Public Law 91-596, 81 STAT 1950) the state shall not grant any variances or exceptions to the record keeping and reporting regulations of this chapter, with the exception of approval of forms to serve as the substitutes for OSHA 101 and OSHA 200 (see WAC 296-27-030 and 296-27-050), without prior approval of the bureau of labor statistics.

(b) Any public employer who wishes to maintain records in a manner different from that prescribed by this chapter may submit a petition containing the information specified in subsection (5) of this section to the director, Department of Labor and Industries, P.O. Box 44000, Olympia, Washington 98504-4000.

(2) All petitions for authorization to maintain records in a manner different than that required by this chapter shall be submitted to the director or directly to the bureau of labor statistics. The director, upon receipt of a petition submitted pursuant to the provisions of subsection (3) of this section, shall immediately forward copies of same to appropriate officials of the bureau of labor statistics. Should said federal officials inform the director of their belief in the desirability or necessity of additional notice or conferences pursuant to provisions of subsection (7) of this section, the director shall provide or cause to be provided such additional notice and/or afford an opportunity for interested parties for informal conferences or hearings concerning the petition. For the purposes of this section, the occupational safety and health administration and the bureau of labor statistics shall be considered interested parties.

The bureau of labor statistics shall be afforded the opportunity to review the petition and any comments submitted in regard thereto. The director shall not grant the petition prior to a finding by the said federal agency that the alternative procedure proposed will not hamper or interfere with the purposes of the Occupational Safety and Health Act of 1970.

(3) Submission of petition. Any employer, who for good cause wishes to maintain records in a manner different from that required by this chapter, may submit a petition containing the information specified in subsection (5) of this section to the director.

(4) Opportunity for comment. Affected employees, or their representatives shall have an opportunity to submit written data, views, or arguments concerning the petition to the director within ten working days following the receipt of notice under subdivision (5)(e) of this section.

(5) Contents of petition. A petition filed under subsection (3) of this section shall include:

(a) The name and address of the applicant;

(b) The address of the place or places (establishment or establishments) of the employment involved;

(c) Specifications of the reasons for seeking relief;

(d) A description of the different recordkeeping procedures which are proposed by the applicant;

(e) A statement that:

(i) The applicant has informed his/her affected employees of the petition by giving a copy thereof to them or to their authorized representative, posting a statement giving a summary of the petition and specifying where a copy of the petition may be obtained, at the place or places where notices to employees are normally posted, and by other appropriate means. A statement posted pursuant to these provisions shall be posted in each establishment identified in WAC 296-27-020(8).

(ii) The applicant has in the same manner informed affected employees and their representatives of their rights under subsection (3) of this section.

(6) Additional notice - conferences.

(a) In addition to the actual notice provided for in subdivision (5)(e) of this section, the director may provide, or cause to be provided, such additional notice of the petition as he/she may deem appropriate.

(b) The director may also afford an opportunity to interested parties for informational conferences or hearings concerning the petition.

(7) After review of the petition, and any comments submitted in regard thereto, and upon completion of any necessary appropriate investigation concerning the petition, if the director finds that the alternative procedure proposed will not hamper or interfere with the purposes of the act, and will provide equivalent information, he/she may grant the petition subject to such conditions as he/she may determine appropriate, subject to the provisions of WAC 296-27-120(2), and subject to revocation for cause.

(8) Publication. When any relief is granted to an applicant under this chapter, notice of such relief, and the reasons therefor, may be published in the federal register.

(9) Revocation. Whenever any relief under this section is sought to be revoked for any failure to comply with the conditions thereof, an opportunity for informal hearing or conference shall be afforded to the employers and effected employees, or their representatives, and other interested parties. Except in cases of willfulness or where public safety or health requires otherwise, before the commencement of any such informal proceeding, the employer shall:

(a) Be notified in writing of the facts of conduct which may warrant the action and,

(b) Be given an opportunity to demonstrate or achieve compliance.

(10) Compliance after submission of petitions. The submission of a petition or any delay by the director in acting upon a petition shall not relieve any employer from any obligation to comply with the provisions of this chapter.

(11) The director shall honor exceptions to the provisions of 29 CFR 1904 - RECORDING AND REPORTING OCCUPATIONAL INJURIES AND ILLNESSES, granted by the bureau of labor statistics to companies having establishments in states other than Washington, when such exceptions apply to the establishments within this state.

(12) There shall be consultation between the appropriate representatives of the department, the occupational safety and health administration, and the bureau of labor statistics in order to enjoy the effective implementation of this chapter.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-120, filed 7/20/94, effective 9/20/94. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-120, filed 6/28/78; Order 76-29, § 296-27-120, filed 9/30/76; Order 74-22, § 296-27-120, filed 5/6/74.]

WAC 296-27-121 Additional recordkeeping requirements. The director may require that additional records and reporting be kept and done in order to achieve the purposes of the act.

[Order 76-29, § 296-27-121, filed 9/30/76.]

WAC 296-27-130 Description of statistical program. RCW 49.17.260 directs the director to develop and maintain a program of collection, compilation and analysis of occupational safety and health statistics. The program shall include periodic surveys of occupational injuries and illnesses.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-130, filed 7/31/79; Order 74-22, § 296-27-130, filed 5/6/74.]

WAC 296-27-140 Duties of employers—Statistical program. Upon receipt of an occupational injuries and illnesses survey form, supplied by the department of labor and industries in conjunction with the Bureau of Labor Statistics, the employer shall promptly complete the form in accordance with the instructions contained therein and return it in accordance with the aforesaid instructions.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-140, filed 7/20/94, effective 9/20/94. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-140, filed 6/28/78; Order 74-22, § 296-27-140, filed 5/6/74.]

WAC 296-27-150 Effective date of regulations. Pursuant to the finding of the director that additional time is needed to afford affected employers a reasonable opportunity to make changes in methods, means, or practices to meet the requirements of WAC 296-27-010 through 296-27-140, the effective date of these requirements shall be January 1, 1978.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-150, filed 6/28/78; Order 74-22, § 296-27-150, filed 5/6/74.]

WAC 296-27-15501 Division of consultation and compliance, public records. Requests for inspection or copies of records and documents in the custody of the department should be made to the department's designated records officer. The department's records are maintained at 7273 Linderson Way, SW, Tumwater, WA P.O. Box 44632, Olympia, WA 98504-4632. General information can be

obtained at service locations and field offices throughout the state.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-15501, filed 7/20/94, effective 9/20/94; 88-14-108 (Order 88-11), § 296-27-15501, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-15501, filed 1/17/86.]

WAC 296-27-15503 Confidential reports within the department's files. Whenever a departmental file contains any report or information from an independent source that has requested that the information contained in the department's file be protected as confidential, such information will not be released without court order. When such information is withheld the records officer shall clearly identify which information has been withheld and the information's source.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-15503, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-15503, filed 1/17/86.]

WAC 296-27-15505 Accident investigation reports. Results of accident investigations and related reports are confidential and will not be freely released by the department, see RCW 49.17.260.

Accident investigation reports will be made available without the need of a court order only to the following:

(1) Employees of governmental agencies in the performance of their official duties;

(2) The injured worker, his/her legal representative, or his/her labor organization representative;

(3) The legal representative or labor organization representative of a deceased worker, including any beneficiary of a deceased worker actually receiving benefits under the terms of Title 51 RCW, the Industrial Insurance Act. The records officer may provide accident investigation reports to the closest surviving member of the deceased worker's immediate family;

(4) The employer of any injured or deceased worker;

(5) Any other employer or person whose actions or business operations are the subject of the report or investigation; or

(6) Any attorney representing a party in any pending legal action in which an investigative report constitutes material and relevant evidence.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-15505, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-15505, filed 1/17/86.]

WAC 296-27-160 Safety and health inspections. The Washington Industrial Safety and Health Act (WISHA), chapter 49.17 RCW, authorizes the department of labor and industries (the department) to inspect work places to protect the health and safety of employees. The following sections describe the method, manner, and frequency of the department's safety and health inspections. The purposes of safety and health inspections are to:

(1) Determine if an employer is complying with WISHA safety and health standards; and

(2) Determine if an employer is furnishing a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-160, filed 1/12/87; 81-14-006 (Order 81-13), § 296-27-160, filed 6/22/81.]

WAC 296-27-16001 Definitions. For the purpose of these inspection rules:

(1) "Department" shall mean the department of labor and industries.

(2) "De minimus violation" is a violation of a standard, where such violation, has no direct relationship to safety or health.

(3) "General violation" is a violation where any accident or occupational illness resulting from such violation probably would not cause death or serious physical harm but which would have a direct or immediate relationship to the safety and health of employees.

(4) "Nonabatement violation" exists when any employer fails to correct a violation(s) for which they have been cited, by the set abatement date.

(5) "Imminent danger violation" is any violation(s) resulting from conditions or practices in any place of employment, which are such that a danger exists which could reasonably be expected to cause death or serious physical harm, immediately or before such danger can be eliminated through the enforcement procedures otherwise provided by the Washington Industrial Safety and Health Act.

(6) "Industrial insurance experience factor" is based on a comparison of the actual incurred losses to the expected losses for the oldest three of the four fiscal years preceding the effective date of premium rates.

(a) An experience factor greater than 1.0000 indicates that an employer's actual incurred losses are greater than expected.

(b) An experience factor of less than 1.0000 indicates that an employer's actual incurred losses are less than expected.

(c) New firms and some firms qualifying for transition rating adjustments are assigned a base experience factor of 1.0000. Self-insured employers will be assigned a modification factor of less than 1.0000.

(7) "Industry" shall mean a group of businesses classified by standard industrial classification (SIC) code according to the type of activity in which they are engaged.

(8) "Repeat violation" includes any violation of a standard or order when a violation has previously been cited to the same employer when it identifies the same type of hazard.

(9) "Serious violation" shall be deemed to exist in a workplace if there is a substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations, or processes which have been adopted or are in use in such workplace, unless the employer did not, and could not with the exercise of reasonable diligence, know of the presence of the violation.

(10) "Willful violation" is one involving a voluntary action, done either with an intentional disregard of, or plain

indifference to, the requirements of the applicable Washington Administrative Code (WAC) rule(s).

Note: When management has knowledge that resistance to a specific WAC rule or rules exists within its work force, which results in a serious or imminent danger violation, and management fails to institute efforts to overcome that resistance, which are effective in practice, there shall be a rebuttable presumption that such failure constitutes voluntary action. This presumption may be rebutted by the employer's demonstration of good faith efforts to overcome resistance to the specific WAC rule or rules.

(11) "WISHA" shall mean the Washington Industrial Safety and Health Act.

(12) "Working hours" shall mean those times that an employer assigns an employee or employees to work at the work place.

(13) "Work place," "work site," and "job site" may be used interchangeably in the text of this chapter and shall mean any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control. Work place shall include temporary labor camps.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-27-16001, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16001, filed 1/12/87; 81-14-006 (Order 81-13), § 296-27-16001, filed 6/22/81.]

WAC 296-27-16002 Inspection hours. An inspection shall be made during the normal working hours of the work place being inspected, unless:

(1) The inspection is of a fatality;

(2) The inspection is of a catastrophe;

(3) The inspection is of a complaint alleging imminent danger;

(4) The inspector needs to remain at the work place outside of working hours to ensure that the inspection is effective.

Note: RCW 49.17.190(1) prohibits an employer from receiving advance notice of an inspection, except as authorized by the director or an authorized representative.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16002, filed 1/12/87.]

WAC 296-27-16003 Inspection format. (1) Upon arrival, the inspector shall present credentials to the highest available management official or designated company representative at the work place and explain the nature and purpose of the visit.

(a) The inspector may sign a visitors' register, plant pass or other book or form used to control the entry and movement of persons.

(b) If a governmental security clearance is required for entry, the inspector shall obtain it before the inspection.

(2) Before beginning an inspection, the inspector should conduct a joint opening conference with the employer and employee representatives.

(a) The employee representative is the employee designated by the union, safety committee, or employees to accompany the inspector during the inspection.

(b) If the inspector determines that an employee representative is not available at the work place, separate conferences with the employer and employee representatives may be held.

(3) A representative of the employer and a representative authorized by the employees shall have the opportunity to accompany the inspector during the inspection.

(4) During the inspection, the inspector may interview in private any employee who wants to discuss a possible violation.

(a) If the inspector determines that an interview would unduly hinder an employer's operations the inspector will interview the employee during a break or after working hours.

(b) To determine whether an interview would unduly hinder an employer's operations, the inspector may consider such factors as:

(i) The time the employee would spend away from the work station;

(ii) The effects on other workers;

(iii) The effect on the work process.

(5) If the inspector receives a complaint during an inspection, the alleged violation will be investigated during the inspection.

(6) The inspector may photograph a violation, take samples, conduct tests, use sampling devices worn by employees, and employ other reasonable investigative techniques. A technique shall not be used if it reasonably could be believed to cause a hazard.

(7) The inspector shall determine that the employer has posted the WISHA notice informing employees of their rights and obligations.

(8) Inspectors should examine the log and summary of recordable occupational injuries and illnesses, supplementary records of occupational injuries and illnesses, records of employee exposure to toxic chemicals and harmful physical agents, and other records relating to employee safety and health.

(9) An employer may correct violations during the inspection.

(10) A violation remains the basis for a citation and a penalty, if warranted, whether it is corrected immediately or at a later date.

(11) The inspector will record the conditions and corrections to help judge the employer's good faith and cooperation.

(12) At the end of the inspection, the inspector will conduct a joint closing conference with the employer and employee representatives. If it is impractical to hold a joint conference or at the request of the employer or employee representative, separate conferences will be held.

(13) Complaints.

(a) Complaints shall be reduced to writing or typing on complaint forms prior to the inspections.

(b) A copy of the complaint shall be provided to the employer at the time of inspection.

(c) The complainants name shall not appear on the employer's copy or on any record published, released, or made available without written and signed authorization by the complainant.

(14) The inspector and all concerned employees of the department shall preserve the confidentiality of trade secrets.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16003, filed 1/12/87; 81-14-006 (Order 81-13), § 296-27-16003, filed 6/22/81.]

WAC 296-27-16004 Interprogram referrals. (1) A safety inspector observing potential health hazards that indicate an industrial hygiene inspection is necessary, will report the hazards and request a health inspection.

(2) A health inspector observing potential safety hazards that indicate a safety inspection is necessary, will report the hazards and request a safety inspection.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16004, filed 1/12/87.]

WAC 296-27-16007 Citations, penalty assessments and notices of violations. (1) The inspector shall record the violations observed on a compliance worksheet.

(2) The compliance worksheet, the photographs, and sample tests, will be used to prepare:

(a) A citation; and

(b) A proposed penalty assessment; and

(c) A notice of violation.

(3) The citation and the proposed penalty assessment will be sent to the employer. The citation and notice will set an abatement date for each violation. This is the date by which the employer must correct the violation.

(4) The inspector may give a notice of violation at the end of inspection with the employers consent instead of the department issuing a citation and notice. The notice of violation sets short abatement dates and is issued only for general violations and contains no penalties. The notice of violation, shall be given to the highest available management official or designated company representative at the work place or sent to the employer.

(5) For a period of three years following the issuance of a final order which cites any violation of a safety standard, order of RCW 49.17.060, the department may issue a citation for a repeat violation. A repeat violation may incur a penalty based solely upon the repeat nature of the violation, without regard to the seriousness of the hazard being cited.

[Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-27-16007, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16007, filed 1/12/87; 81-14-006 (Order 81-13), § 296-27-16007, filed 6/22/81.]

WAC 296-27-16011 Refusal or limitation of inspection. When the employer:

(1) Refuses to permit an inspection:

(a) The inspector will attempt to ascertain the reason(s) for refusal and report to their immediate supervisor.

(b) The department may seek an inspection warrant or other compulsory process from a court to gain entrance.

(i) If refusal to permit an inspection is anticipated, the department may seek a warrant prior to the inspection.

(ii) The department will not seek an inspection warrant in response to a complaint unless:

(A) The complaint is written and signed by a complainant; or,

(B) The complainant alleges a hazard which could cause serious injury or death.

(2) Permits an inspection but interferes with, or limits the process:

(a) The inspector will attempt to ascertain the reason for interference of limitation, report to their immediate supervisor, and will:

(i) End the inspection;

(ii) Continue the inspection noting areas of interferences or limitations.

(b) The department may seek an inspection warrant or other compulsory process from a court to revisit the areas where interference or limitation occurred. The department will not seek an inspection warrant in response to a complaint unless:

(i) The complaint is written and signed by a complainant;

(ii) The complaint alleges imminent danger to the safety or health of an individual.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16011, filed 1/12/87; 83-24-013 (Order 83-34), § 296-27-16011, filed 11/30/83; 81-14-006 (Order 81-13), § 296-27-16011, filed 6/22/81.]

WAC 296-27-16018 Compliance inspections. (1) Inspection types.

(a) Unprogrammed. Inspections are in response to suspected or alleged hazardous working conditions at a specific work site. This type of inspection addresses:

(i) Imminent danger;

(ii) Fatalities;

(iii) Catastrophies;

(iv) Complaints;

(v) Referrals;

(vi) Follow-up inspections;

(vii) "High hazard" industries.

(b) Programmed. Programmed inspections are inspections of worksites which have been selected based upon objective criteria. The worksites are selected and scheduled according to state-wide scheduling plans for:

(i) Safety compliance;

(ii) Health compliance;

(iii) Compliance special-emphasis programs.

(2) Inspection scope. Unprogrammed and programmed inspections may be:

(a) Comprehensive inspection. This category includes a complete walkaround inspection of the entire establishment.

(b) Partial. This category includes any inspection in which the walkaround is limited to specific areas, operations or conditions within the establishment but does not include all potentially hazardous areas of the establishment.

(3) Inspection priorities. The priority of inspections and assignment of resources within the inspection classifications shall be as follows:

(a) Imminent danger including complaints or referrals which allege imminent danger;

(b) Fatalities or catastrophies;

(c) Complaints not alleging imminent danger or referrals;

(d) "High hazard" industries;

(e) Programmed inspections.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16018, filed 1/12/87.]

WAC 296-27-16020 Inspection selection, scheduling criteria, and limit on number of inspections. (1) Inspection selection criteria.

(a) WISHA's priority system for inspection scheduling is intended to distribute available resources as efficiently as possible to ensure that the maximum protection is effectively provided to the working men and women of this state.

(b) The assistant director of the consultation and compliance division shall ensure that inspections are scheduled within the framework of this chapter and are consistent with the objectives of chapter 49.17 RCW, the Washington Industrial Safety and Health Act of 1973, as currently amended, or as amended in the future.

(c) The assistant director shall not permit more than two scheduled comprehensive inspections at the same fixed site location of an individual employer within any period of twelve consecutive months.

(2) Employer contacts. Employer requests for information or voluntary compliance services will not initiate compliance inspection.

(a) Such employer requests shall not protect the establishment from compliance inspections conducted pursuant to the guidelines established by this chapter.

(b) If an employer or their representative indicates that an imminent danger exists or that a fatality or catastrophe has occurred, the assistant director shall ensure that action is taken in accordance with the inspection priority procedures established by this chapter.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-27-16020, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16020, filed 1/12/87.]

WAC 296-27-16022 Unprogrammed inspections, follow-up inspections, monitoring inspections, and "high hazard" inspections. (1) Unprogrammed inspections. Inspections conducted in response to evidence of hazardous conditions at a worksite are considered unprogrammed inspections. Unprogrammed inspections (excluding follow-ups) shall normally be scheduled according to the following priorities:

(a) Reports of alleged imminent danger situations from any source including referrals and complaints regardless of formality;

(b) Fatalities/catastrophies;

(c) Complaints;

(d) "High hazard" industries.

(2) "High hazard" industry. The following industries which have nonfixed worksites are all considered to be "high hazard": Construction, logging, maritime, and electrical utilities and communications.

(a) The "high hazard" industries require a distinctly different method of inspection scheduling, not only because of their nonfixed worksites but also because the work being performed is almost always inherently dangerous and because the worksite character, conditions and work functions are dynamically and frequently changing.

(b) Inspections within the "high hazard" industries will be conducted throughout the year, whenever such work activity becomes known to the department. Within the limits of WISHA jurisdiction, inspections will be conducted without regard to the size or scope of the activity of the employer being inspected.

(3) Follow-up inspections. The seriousness of the original hazards or conditions requiring action shall be considered in assigning a priority to follow-up inspections. Follow-up inspections normally shall be conducted within ten days following the abatement date and shall take priority over programmed inspections.

(a) Follow-up inspections shall be conducted in the following situations:

(i) Willful citations;

(ii) Citations related to an imminent danger situation;

(iii) Whenever an employer fails to respond to a request for notification of compliance action by letter or other means; and

(iv) Whenever the assistant director or designee believes that circumstances indicate the need for a follow-up inspection.

(b) Follow-up inspections shall be deemed optional if the following circumstances exist:

(i) When the inspecting compliance officer has observed and documented that abatement has been achieved before completing the inspection and leaving the premises;

(ii) When the employer or a knowledgeable source such as the complainant or referring party submits in writing that compliance has been achieved.

(4) Monitoring inspections. A monitoring inspection may be conducted for any reason including:

(a) An employer's request for a variance; or

(b) An employer's request for an extension of an abatement date.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16022, filed 1/12/87.]

WAC 296-27-16026 Programmed inspections. A programmed inspection generally is a comprehensive inspection of the worksite but may be a partial inspection if required by resource availability or other enforcement priorities. A programmed inspection shall be scheduled pursuant to one of the following general scheduling systems unless the establishment is within a "high hazard" industry.

(1) General scheduling system. The state-wide general scheduling system is not specific to any individual industry. Both safety and health general scheduling systems include the following factors:

(a) An objective criteria which includes but is not limited to one or more of the following:

(i) Available data concerning injuries or illnesses which could be reduced by an inspection which eliminates the hazards;

(ii) The industrial insurance modification factor of a particular business establishment;

(iii) The number or type of contaminants present at a worksite as well as the relative toxicity of those contaminants;

(iv) The degree of exposure to hazards;

(v) The number of employees exposed.

(b) A random selection process which utilizes a computer program to ensure statistical randomness;

(c) A regular evaluation and review including:

(i) A yearly analytical review comparing the current program with the objective criteria;

(ii) An annual comparison between compiled inspection results and reported injuries or illnesses.

(d) A general scheduling system programmed for no more than a twelve-month operating cycle with a maximum permissible extension of no more than one month before appropriate adjustments are implemented.

(2) Special emphasis targeting system. A special emphasis targeting system is a regional and/or industry-specific system which will be based on either one of the following:

(a) Scheduling system which includes:

(i) An objective criteria;

(ii) A random selection process;

(iii) An evaluation and review; or

(iv) An operating cycle.

(b) A scheduling program required of state plan states by the Federal Occupational Safety and Health Administration.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-03-011 (Order 86-48), § 296-27-16026, filed 1/12/87.]

Chapter 296-28 WAC

CLEARANCE RULES—RAILROADS IN PRIVATE YARDS AND PLANTS

WAC

WAC 296-28-001 Foreword. These clearance rules and regulations for common carrier railroads are issued under and by the authority of RCW 81.44.010. Formerly, certain portions of these rules were by law administered by the department of labor and industries. In 1955 jurisdiction over matters treated by these rules was placed in the Washington public service commission (now the Washington utilities and transportation commission) (RCW 43.53.055).

These rules and regulations are intended to prevent accidents which may result in either damage of equipment or injury to human beings. They are intended to protect the railroads and their employees and the general public.

[Foreword, filed 4/3/61.]

WAC 296-28-005 Beginning of order. (1) Hearing was originally held in this cause at Seattle, Washington, on the 7th day of September, 1950, pursuant to notice duly given before representatives of both the Washington public service commission and the department of labor and industries.

(2) At the time of the original hearing the Washington public service commission was vested by law with jurisdiction over the safety of railroad passengers, while jurisdiction over the safety of railroad employees was in the department of labor and industries. In 1955, as stated in the foreword, jurisdiction over the safety of railroad employees was also placed in the Washington public service commission.

(3) In order to bring the clearance rules up to date and to delete the various references to the department of labor and industries so that confusion may be avoided, these amended rules are being published.

(4) All interested parties were represented at the original hearing and their appearances are listed in our original order in this cause dated and effective December 1, 1950.

(5) In pursuance of its rule-making power, the Washington public service commission hereby determines as follows:

(a) It is ordered that subsequent to December 1, 1950, in all construction and reconstruction of tracks or structures adjacent thereto, on all railroads over which freight cars are transported or proposed to be transported, the following minimum clearances shall be allowed.

(b) It is further ordered that a railroad company shall not operate freight cars, locomotives or other rolling equipment over tracks constructed subsequent to December 1, 1950, or tracks adjacent to buildings and structures constructed or reconstructed subsequent to that date, wherein the clearances are less than those prescribed in this order.

(c) It is further ordered that where specific authority has been issued for deviation from these clearances for construction occurring subsequent to December 1, 1950, but prior to the effective date of this order, authority so issued shall remain in effect.

(6) Overhead clearances authorized in this order are applicable to tracks on which freight cars having a height to running board of fifteen feet six inches or less are transported. In the case of cars or loads exceeding fifteen feet six inches, WAC 296-28-035 and 296-28-040 must be complied with.

(7) Side clearances authorized in this order are applicable to tracks on which freight cars having an overall width not greater than ten feet ten inches are transported. In the case of cars or loads exceeding ten feet ten inches, WAC 296-28-035 and 296-28-040 must be complied with.

[Opening paragraphs, filed 4/3/61.]

Reviser's note: As stated above, the control of safety of railroad employees is vested in the Washington public service commission (now the Washington utilities and transportation commission). However, many nonrailroad enterprises have railroad tracks and some railroad equipment. To safeguard employees of these enterprises, the department of labor and industries adopted the same railroad clearance rules enacted by the public service commission and filed the same with the code reviser's office. The filing date appears in the bracketed history note at the end of each section.

WAC 296-28-010 Exemptions. (1) When the overhead or side clearances between a track and any building, structure or facility are less than the minimum prescribed in this order, but where lawfully created prior to the effective date thereof, the minimum clearances prescribed herein shall be provided whenever the building, structure or facility is relocated or reconstructed; however, the public service commission will consider specific requests for the future continuance of heretofore lawful clearances at such reconstructed building, structure or facility when application

thereof has been made as provided in subsection (3) of this section.

(2) Where restricted clearances are necessary nothing herein shall be construed as preventing the movement of material over tracks when such material is necessary in the construction or maintenance of such tracks, nor in the movement of special work equipment used in the construction, maintenance or operation of the railroad, provided such movements shall be carried on under the conditions as are necessary to provide for the safety of all concerned; nor shall these rules be applicable, provided reasonable safety precautions are observed, during periods of actual emergency due to wrecks, derailments, washouts and like conditions.

(3) If in any particular case, exemption from any of the requirements herein is deemed necessary by the carrier concerned, the public service commission will consider the application of such carrier for such exemption when accompanied by a full statement of the conditions existing and the reason why such exemption is asked. Any exemption so granted will be limited to the particular case covered by the application.

(4) The public service commission reserves the right to modify any of the provisions of these regulations in specific cases, when, in its opinion, safety of railroad employees, public safety, convenience or necessity would be served by so doing.

(5) Logging railroads, or any operation directly incident to logging, now subject to the provisions of the safety standards for logging operations, published by the division of safety of the department of labor and industries of the state of Washington, are exempted from this order.

[Exemptions section, filed 4/3/61.]

WAC 296-28-015 Definitions. (1) The overhead clearance is that distance measured along a line which is perpendicular to and joins a horizontal plane passing through the top of the highest rail and the lowest point of the overhead structure or obstruction.

(2) The side clearance is the shortest distance from centerline of track to a structure or obstruction at the side of the track.

(3) The track clearance is the shortest distance between the centerlines of adjacent tracks.

(4) Height of a freight car is the distance between the top of rail and the top of running board.

(5) Width of a freight car is twice the distance from the centerline of the car to the extreme outside part thereof.

(6) Icing platforms: The term "icing platform" shall include structures used in performing the service of icing, precooling, heating, ventilating and servicing of cars used in the handling of commodities requiring the above services.

(7) Constituted authority shall mean the public service commission.

(8) Overcrossing when used in this order means any point or place where a highway crosses a railroad by passing above the same. Clearances shall be as specified in WAC 296-28-020 (1) and (3).

(9) Undercrossing when used in this order means any point or place where a highway crosses a railroad by passing under the same. Existing laws pertaining to highways shall prevail.

[Section 1, filed 4/3/61.]

WAC 296-28-020 Overhead clearances.

(1) Overhead clearance in general	22' 6"
(2) Overhead clearance in buildings	18' 0"

The overhead clearance inside of entirely enclosed buildings may be reduced to eighteen feet, provided that this clearance shall apply only to tracks terminating within the building, and further provided, that when an overhead clearance of less than twenty-two feet six inches is established therein, all cars, locomotives or other equipment shall be brought to a stop before entering such enclosed building, the conditions provided to require such stop to be approved by constituted authority.

Note: Engine houses and car shops are exempt from these regulations.

(3) Overhead clearance in tunnels and bridges.

Minimum overhead clearance in tunnels and through bridges may be decreased to the extent defined by the half-circumference of a circle having a radius of eight feet and tangent to a horizontal line twenty-two feet six inches above top of rail at a point directly above the centerline of track.

(4) Overhead clearance - all other structures.

Minimum overhead clearance as prescribed in subsection (1) above may be decreased to the extent defined by the half-circumference of a circle having a radius of eight feet six inches and tangent to a horizontal line twenty-two feet six inches above top of rail at a point directly over the centerline of track.

(5) Overhead clearance of wires.

All wires in general shall have a minimum vertical clearance of not less than that specified by the safety rules for the installation and maintenance by electric supply and communication lines as provided by the rules for electrical construction and the electrical and communication workers safety rules of the state of Washington.

[Section 2, filed 4/3/61.]

WAC 296-28-025 Side clearances.

(1) Side clearance in general	8' 6"

Note: To further reduce operational hazards, it is recommended that, wherever practicable, all posts, pipes, warning signs and other small obstructions be given a side clearance of ten feet.

(2) Side clearance at platforms:

(a) Platforms—8" or less above top of rail	4' 8"
(b) Platforms—4' 0" or less above top of rails	5' 9"
(c) Platforms—4' 6" or less above top of rail—when used principally for loading or unloading refrigerator cars	8' 0"
(d) Icing platforms and supports	5' 9"
(e) Platforms—Other than above	8' 6"

Note: Retractable platforms, either sliding or hinged, which are attached to a permanent structure shall be so designed that when not in use no part of such retractable platform shall fall within the clearance limits herein prescribed for a platform of that height above the top of the rail.

(f) Platforms—Combinations of any above.

Note: Platforms defined under subsection (2)(a) above may be combined with either subsection (2)(c) or subsection (2)(b) provided that the lower platform presents a level surface from

a point not more than four feet eight inches from centerline of track to the face of the wall of the platform with which it is combined. No other combinations will be permitted.

(g) Platforms—Extension of existing platforms.

Note: Platforms which were constructed at lawful clearances prior to the effective date of this order may be extended at existing clearances upon approval of constituted authority.

(3) Side clearance—Bridges and tunnels 8' 0"

(4) Bridges and tunnels—Upper section (see WAC 296-28-020(3))

Side clearance in through bridges and tunnels may be decreased to the extent defined by the half circumference of a circle having a radius of eight feet and tangent to a horizontal line twenty-two feet six inches above top of rail directly above centerline of track.

(5) Bridges—Lower section and structures 4' high or less.

Through bridges supporting track affected, hand rails, water barrels and refuge platforms on bridges and trestles, water columns, oil columns, block signals, cattle guards and cattle chutes, or portions thereof, four feet or less above top of rail may have clearances decreased to the extent defined by a line extending diagonally upward from a point level with the top of rail and five feet distant laterally from centerline of track to a point four feet above top of rail and eight feet distant laterally from centerline of track: *Provided,* That the minimum clearance for hand rails and water barrels shall be seven feet six inches and the minimum clearance for fences of cattle guards shall be six feet nine inches.

Note: Unless previously approved, the clearances authorized in this subsection, except as provided for hand rails and water barrels, are not permitted on through bridges where the work of trainmen or yardmen requires them to be upon the decks of such bridges for the purpose of coupling or uncoupling cars in the performance of switching service on a switching lead.

(6) Side clearance—Cattle guards and cattle chutes. (See subsection (5) above.)

(7) Side clearance—Engine house and car repair shop doors. 7' 6"

(8) Side clearance—Hand rails on bridges and trestles (see subsection (5)).

(9) Side clearance—Interlocking mechanism, switch boxes, etc. 3' 0"

Switch boxes, switch operating mechanism necessary for the control and operation of signals and interlockers projecting four inches or less above top of rail.

(10) Side clearance—Mail cranes and train order stands when not in operative position. 8' 6"

(11) Side clearance—Oil columns (see subsection (5)). 8' 0"

(12) Side clearance—Poles supporting trolley contact. 8' 3"

Conductors supplying motive power to track affected—of bracket construction.

(13) Side clearance—Poles other than trolley poles. 8' 6"

(14) Side clearance—Signals and switch stands 3' high or less when located between tracks where not practicable to provide clearances otherwise prescribed in this order 6' 0"

(15) Side clearance—Signals and switch stands other than above 8' 0"

(16) Side clearance—Tunnels (see subsection (4)). 8' 0"

(17) Side clearance—Water barrels on bridges (see subsection (5)).

(18) Side clearance—Water columns (see subsection (5)). 8' 0"

(19) Side clearances on curved track.

Note: Side clearances on all structures adjacent to curved track shall be increased as necessary to give the equivalent of tangent track clearances.

(20) Side clearances—Material or merchandise adjacent to tracks. 8' 6"

Note: No merchandise, material or other articles shall be placed or stored on ground or platforms adjacent to any track at a distance less than eight feet six inches from the centerline of track, except in cases of maintenance or emergency when such material is to be used within a reasonable period of time or where local conditions make compliance with this note impossible.

[Section 3, filed 4/3/61.]

WAC 296-28-030 Track clearances.

(1) Track clearances—In general 14' 0"

The minimum distance between the centerlines of parallel standard gauge railroad tracks, which are used or proposed to be used for transporting cars, engines, motors or like equipment, shall be fourteen feet, except as hereinafter prescribed.

(2) Track clearances—Main and subsidiary tracks 15' 0"

The centerline of any standard gauge track, except a main track or a passing track, parallel and adjacent to a main track or a passing track, shall be at least fifteen feet from the centerline of such main track or passing track: *Provided, however,* That where a passing track is adjacent to and at least fifteen feet distant from the main track, any other track may be constructed adjacent to such passing track with clearance prescribed in subsection (1) above.

(3) Track clearances—Parallel team, house or industry tracks. 13' 0"

Minimum clearances between centerlines of parallel team, house or industry tracks shall be thirteen feet.

(4) Track clearances—Parallel ladder or ladder and other track 20' 0"

The centerline of any standard gauge ladder track, constructed parallel to any other track, shall have a clearance of not less that twenty feet from the centerline of such other track.

(5) Track clearances—Existing tracks

Note: Existing tracks may be extended at clearances lawfully prescribed prior to the effective date of this order.

[Section 4, filed 4/3/61.]

WAC 296-28-035 Marking of cars. (1) Cars exceeding 15' 6" in height.

Each car of a height exceeding fifteen feet six inches from top of rail to top of running board, the movement of which is hereby authorized, shall be marked, stenciled or

placarded, and such markings maintained in a legible condition to read:

"This car
EXCESS
HEIGHT"

The words "EXCESS HEIGHT" to occupy the greater portion of a rectangular space 7" x 10" enclosed within a 3/4" solid border. The markings required shall be made permanent on owned cars as soon as practicable. Lettering and border of signs shall be of colors contrasting to that of the car body. All such required marking and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners.

(2) Cars exceeding 10' 10" in width.

Each car of a width exceeding ten feet ten inches, the movement of which is hereby authorized, shall be marked, stenciled or placarded, and such markings maintained in a legible condition to read:

"This car
EXCESS
WIDTH"

The words "EXCESS WIDTH" to occupy the greater portion of a rectangular space 7" x 10" enclosed within 3/4" solid border. The markings required shall be made permanent on owned cars as soon as practicable. Lettering and border of signs shall be of colors contrasting to that of the car body. All such required marking and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners.

[Section 5, filed 4/3/61.]

WAC 296-28-040 Operation of excess dimension loads. (1) Cars containing lading in excess of 15' 6" high and/or 5' 5" from centerline of car.

Each open top car containing lading of a height exceeding fifteen feet six inches above top of rail, or which extends laterally more than five feet five inches from the centerline of the car, the movement of which is hereby authorized, shall be marked, stenciled or placarded, and such markings maintained in a legible condition to read:

"This car EXCESS HEIGHT" or "This car EXCESS WIDTH"

The words "EXCESS HEIGHT" or "EXCESS WIDTH" to occupy the greater portion of a space 7" x 10" enclosed within a 3/4" solid border. Letters and border to be of contrasting colors. All such required markings and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners where practicable, and in addition one each of such signs shall be placed on each side of the load in a conspicuous position.

(2) Cars containing lading which extends laterally in excess of 5' 5".

The movement of open top cars containing lading which extends laterally in excess of five feet five inches is hereby authorized only if the lading is of such a nature that it cannot practically be reduced in dimensions.

(3) Lading higher than 15' 6" or extending laterally more than 5' 5 1/2".

(a) The movement of all open top cars having lading in excess of fifteen feet six inches in height, or which extends laterally in excess of five feet five and one-half inches from centerline of car will be authorized by written notice stating the total number of such cars and advising that no member of the train crew is required to ride on top of such high car or the side of any such wide car.

(b) A written notice shall be delivered to every train containing any car, the lading of which extends laterally in excess of 5' 5 1/2" from the centerline of the car or in excess of 15' 6" in height above top of rails, informing the crew of the train that the train includes such car or cars, stating the total number thereof and advising that no member of the train crew is required to ride on the side of any such wide car or top of any such high car.

(4) Notice to yard supervisors.

Yard supervisors shall be given notification sufficiently in advance of the arrival of such wide loads as described in subsection (3)(a) above as to enable them to take necessary precautions to safeguard employees in yard.

(5) Loads which cannot be passed over by employees.

Open top cars containing lading having an overall height in excess of fifteen feet six inches above top of rail, if otherwise in compliance with these requirements, and the nature of which precludes the possibility of employees passing over the cars, are exempt from the provisions of subsections (3)(a), (3)(b) and (4), but written notice must be given to all members of train crew informing them of the presence of such loads.

(6) Exemptions.

The common carrier railroads are hereby authorized to move excess height loads and width loads, as described in subsection (1) over roads or portions thereof, without complying with the provisions of WAC 296-28-040, provided that clearances equivalent to the minimum herein prescribed for cars having a height of fifteen feet six inches and width of ten feet ten inches are maintained.

[Section 6, filed 4/3/61.]

WAC 296-28-045 Narrow gauge railroads transporting freight cars. (1) Overhead and side clearances.

For the operation of equipment on narrow gauge tracks, the minimum overhead clearance shall provide a distance above the top of the highest car operated not less than that provided in this order for cars fifteen feet six inches in height operated on standard gauge tracks; the side clearances and distances between centerlines of tracks shall provide a distance from the sides of, or between the widest cars operated not less than those distances herein provided for cars ten feet ten inches in width operated on standard gauge tracks.

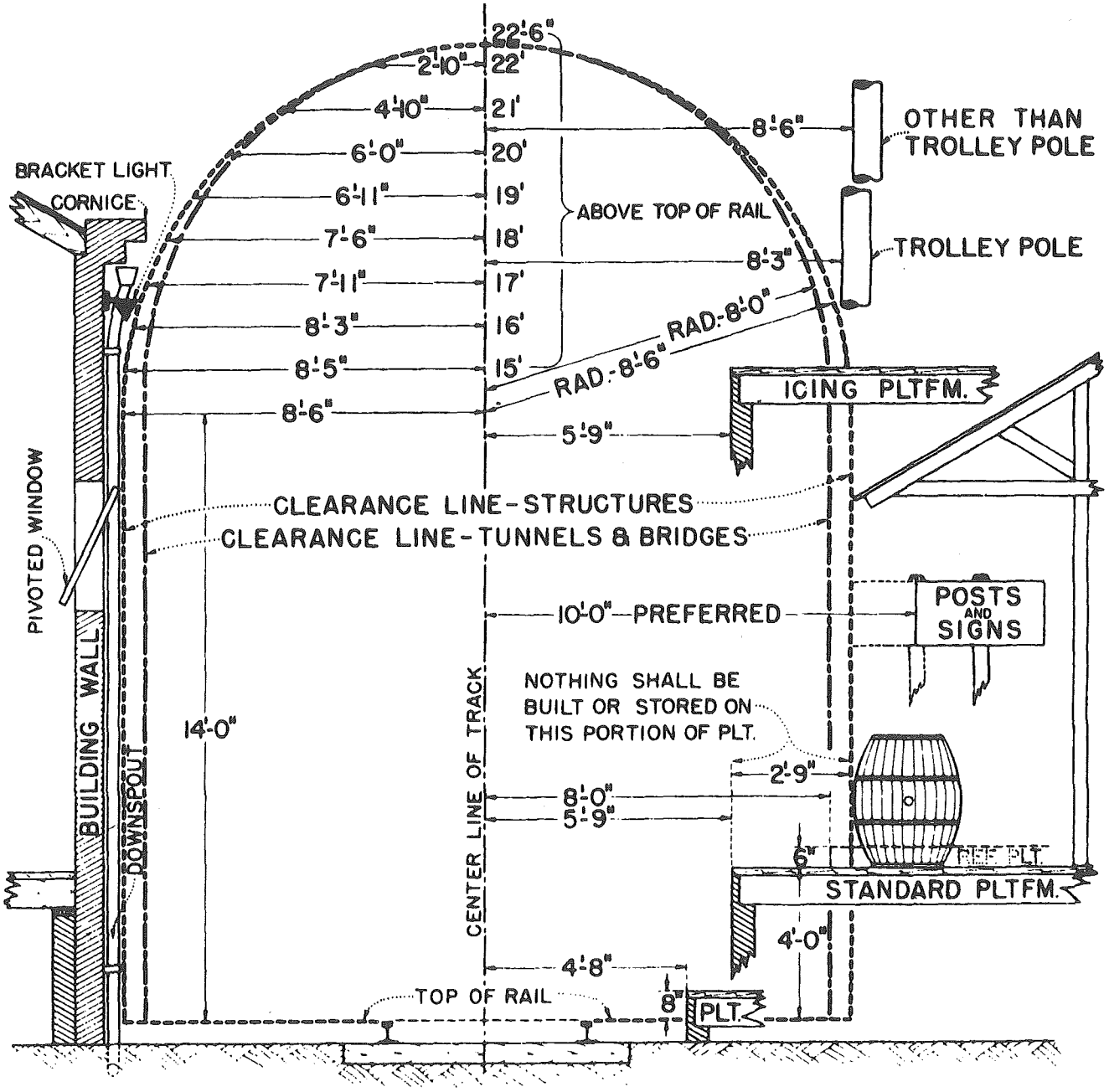
(2) All other requirements of this order where applicable shall be observed by narrow gauge railroads.

[Section 7, filed 4/3/61.]

WAC 296-28-050 Illustrations.

(1)

TYPICAL CLEARANCE
OF STRUCTURES FROM RAILROAD TRACKS

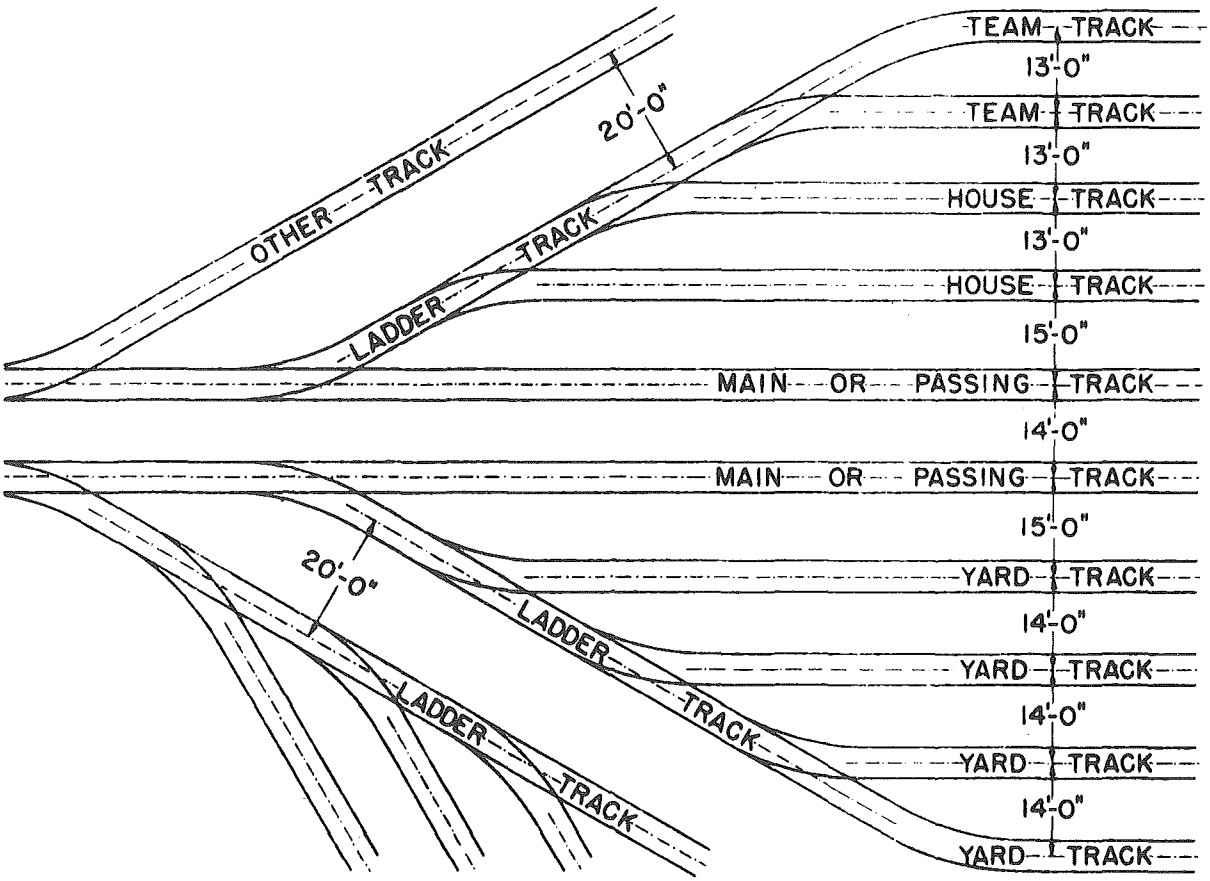


NOTES

OVERHEAD WIRE CLEARANCES SHALL CONFORM TO THE ELECTRICAL AND COMMUNICATION WORKERS SAFETY RULES OF THE STATE OF WASHINGTON

SIDE CLEARANCES ON ALL STRUCTURES ADJACENT TO CURVED TRACK SHALL BE INCREASED TO GIVE THE EQUIVALENT OF TANGENT TRACK CLEARANCES

(2) TYPICAL TRACK SPACING



NOTE

EXISTING TRACKS MAY BE EXTENDED AT CLEARANCES LAWFULLY PRESCRIBED PRIOR TO THE EFFECTIVE DATE OF THIS ORDER.

CLASS OF HIGHWAY

	CLASS I			CLASS II			CLASS III			CLASS IV			CLASS V			CLASS VI		FRONTAGE ROADS (c) CLASS IF	CLASS 2F	CLASS 3F
TERRAIN	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL & ROLLING	MOUNT.			
ADT IN 20 YEARS	OVER 18,000	OVER 8,000	OVER 1,800	OVER 15,000	15,000 MAX	7,200 MAX	7,200 MAX	1,800 MAX		Refer to Design Capacity Table			600 TO 200			UNDER 200		1,000 TO 600	600 TO 200	UNDER 100
DHV IN 20 YEARS	OVER 1,700	OVER 750	OVER 150	1,700 MAX	1,750 MAX	150 MAX							90 TO 30			UNDER 30		150 TO 90	90 TO 15	UNDER 15
TRUCK ADT IN 20 YEARS							OVER 600	OVER 450	OVER 300	UNDER 600	UNDER 450	UNDER 300								
SEPARATION OF ALL CROSS TRAFFIC REQUIRED	YES			Separate Where Cross Traffic Warrents			Separate Where Cross Traffic Warrents			NO			NO			NO		NO		
CONTROL OF ACCESS REQUIRED	FULL			According to Master Plan			According to Master Plan			According to Master Plan			NO			NO		NO		
NUMBER OF TRAFFIC LANES	4 or more (Divided)			4 (Divided)			2			2			2			2		2	2	1
DESIGN SPEED M.P.H	70	60	50	70	60	50	70	60	50	70	60	50	60	50	40	35	25	40	30	25
CURVATURE Desirable	3°	4°	6°	3°	4°	6°	3°	4°	6°	3°	4°	6°	4°	6°	9°-30'	13°	13°	9°-30'	13°	20°
CURVATURE Maximum	4°	5°	8°	4°	5°	8°	4°	5°	8°	4°	5°	8°	5°	8°	13°	18°	30°	13°	20°	56°
GRADIENT Desirable	2.5%	3%	4%	2.5%	3%	4%	2.5%	3%	4%	2.5%	4%	5%	3%	5%	6%	7%	7%	6%	7%	7%
GRADIENT Maximum	3%	5%	5%	3%	5%	5%	3%	5%	5%	3%	5%	6%	5%	6%	7%	10%	10%	7%	10%	10%
SIGHT DISTANCE Min Safe Stopping	600'	475'	350'	600'	475'	350'	600'	475'	350'	600'	475'	350'	475'	350'	275'	225'	150'	275'	200'	150'
SIGHT DISTANCE Min Safe Passing							2,300'	2,000'	1,700'	2,300'	2,000'	1,700'	2,000'	1,700'	1,300'	1,000'	600'			
TRAFFIC LANE WIDTH	12'			12'			12'			11'			10'			9'		10'	9'	12'
SHOULDER WIDTH	10'		10'(a)	10'		10'(a)	10'		10'(a)	8'		8'(a)	4'			3'		4	3'	3'
MIN. MEDIAN WIDTH	15'		4'	15'		4'														
PAVEMENT TYPE (b)	High			High			High			Intermediate or (High)			Low or (Intermediate)			Low or (None)		Low or (Intermediate)	Low or (None)	Low or (None)
MIN. RIGHT OF WAY WIDTH	61' From Outer Edge of Roadway 100' Min			61' From Outer Edge of Roadway 100' Min			150'			150'			100'			60'		60'	60'	40'
ILLUMINATION	As Required			As Required			As Required at Intersections													

STRUCTURES (Minimum Standards)

Load Capacity	H20-S16			H20-S16			H20-S16			H15-S12			H15-S12			H15-S12		H15-S12	H15	H15
Vertical Clearance							14'-6" Minimum			15'-0" Desirable										
Bridge Width (0 to 80 Lanes)	69'			69'			42'			30'			26'			24'		26'	24'	18'
Bridge Width (Over 80' Long)	56'			56'			28'			26'			26'			24'		26'	24'	18'

NOTES:

(a) Shoulder width may be reduced to 4 feet for short sections in heavy rock excavation.

(b) Definitions of Pavement Types:
"High - Conc. Conc. - 8" Min. on Adequate Base; Asph. Conc. - 5" Min. on Conc. Treated Base
Inter. - Asph. Conc. - Under 3" / Bit. Penetr. Mac. - 1" Min. / Road Mix. - 1" Min. } On Adequate Base
Low - L.B.S.T. - 3/4" Min.
"Exceptions are possible in arid areas.
Types in ( ) should be secondary choice.

(c) Frontage Roads: For volumes over 1,000 ADT, use Class III Highway for 50 mph design speed.
Interstate Routes: Interstate Standards will apply.

DESIGN CAPACITY TABLE

TERRAIN	PER CENT SIGHT DIST. RESTRICTED	MAXIMUM DHV FOR CLASS OF HIGHWAY SHOWN													
		0% TRUCKS		5% TRUCKS		10% TRUCKS		15% TRUCKS		20% TRUCKS		25% TRUCKS		30% TRUCKS	
		CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV
LEVEL	0	900	770	840	720	780	670	740	630	690	590	660	560	620	530
	20	860	740	800	690	750	640	700	610	660	570	630	540	590	510
	40	800	690	740	640	700	600	650	560	620	530	580	500	550	480
	60	720	620	670	580	630	540	590	510	550	480	530	450	500	430
ROLLING	0	900	770	750	640	640	550	560	480	500	430	450	390	410	350
	20	860	740	720	620	610	530	510	460	480	410	430	370	390	340
	40	800	690	670	580	570	490	500	430	450	380	400	250	360	310
	60	720	620	600	520	510	440	450	390	400	340	360	310	330	280
MOUNT.	0	900	770	620	530	470	410	380	330	320	280	280	240	240	210
	20	860	740	590	510	450	390	370	320	310	260	270	230	230	200
	40	800	690	550	480	420	360	340	290	290	250	250	210	210	190
	60	720	620	500	430	380	330	310	260	260	220	220	190	190	170

NOTES ON DESIGN CAPACITY TABLE:

Procedure in use of table.

1. Determine. (a) type of terrain, (b) % of length that sight distance is restricted to less than 1500 feet, (c) % of trucks, (d) DHV estimated for 20 years hence.
2. Select the class of highway required from the table using the above four conditions.
3. When the truck ADT requires a higher class of highway than the findings from this table indicate, the truck ADT shall govern

Ratio of ADT to DHV varies with every case. DHV generally averages 10% to 15% of ADT.

Consideration should be given to climbing lanes as compared with going to a higher class of highway

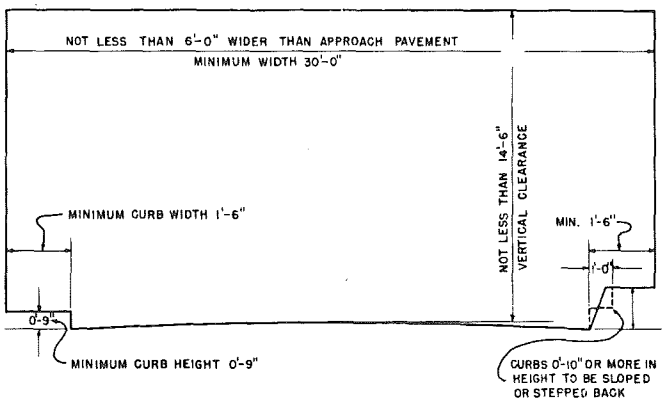
Reference: Highway Capacity Manual.

STANDARD
GEOMETRIC DESIGN STANDARDS
FOR RURAL STATE HIGHWAYS
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA WASHINGTON

APPROVED FEB 1 - 1956

W. A. Bugge

(4) CLEARANCE DIAGRAM FOR UNDERPASSES TWO-WAY HIGHWAY TRAFFIC



REFERENCE:

STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES - THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS.

[Illustrations, filed 4/3/61.]

Chapter 296-30 WAC
RULES FOR THE ADMINISTRATION OF THE CRIME VICTIM COMPENSATION PROGRAM

WAC

WAC 296-30-010 Definitions. Whenever used in these rules, the following words mean:

(1) "Innocent victim" means any person whose injury was not the direct, proximate result of his or her consenting to, provoking, or inciting the criminal act that resulted in the injury.

(2) "Bodily injury" means any harmful or offensive touching, and includes severe emotional distress where no touching takes place when:

(a) Claimant is not the object of the criminal act and:

(i) The distress is intentionally or recklessly inflicted; and

(ii) The distress is inflicted by extreme or outrageous conduct; and

(iii) The claimant has a reasonable apprehension of imminent bodily harm; and

(iv) The claimant is in the immediate vicinity of the criminal act at the time the criminal act takes place.

(b) Claimant is the victim of the criminal act and:

(i) The distress is intentionally inflicted; and

(ii) The distress is inflicted by outrageous or extreme conduct; and

(iii) The claimant had a reasonable apprehension of imminent bodily harm.

(3) "Private insurance" means sources of recompense available by contract, such as life or disability insurance.

(4) "Public insurance" means any state or federal statutory welfare and insurance plan that compensates victims or their beneficiaries as a result of the claimed injury or death. This does not include state, federal, or private deferred income retirement plans.

(5) The test used to define "the result of" as used in RCW 7.68.070 (3)(a) is two pronged. First, it must be determined that cause in fact exists, and second, it must then be determined that proximate cause exists.

(a) Cause in fact exists if "but for" the acts of the victim the crime that produced the injury would not have occurred.

(b) Proximate cause exists if, once cause in fact is found, it is determined that the acts of the victim:

(i) Resulted in a foreseeable injury to the victim;

(ii) Played a substantial role in the injury; and

(iii) Were the direct cause of the injury.

(6) "Institutions maintained and operated by department of social and health services or the department of corrections" means those institutions in which the department of social and health services or the department of corrections assumes responsibility for medical coverage of the institution's residents.

(7) "Reasonable cooperation" generally exists when the claimant is:

(a) Willing to talk to police and give information to aid in the investigation; and

(b) Willing to assist in the prosecution of the alleged criminal.

(8) A person is "unjustly enriched" within the meaning of RCW 7.68.070(15) when it would be deficient in justice and fairness, or inequitable, to allow that person to obtain, or have control of or access to, benefits or compensation paid as a result of an injury to a victim of crime.

(9) "Department" means the department of labor and industries.

(10) "Services provided" means services covered under chapter 74.09 RCW or Title XIX of the Federal Social Security Act that are: (a) Provided by health services providers with credentials recognized by the department for purposes of payment under chapter 51.36 or 7.68 RCW; and (b) available and equivalent to those services covered by the department under Title 51 or chapter 7.68 RCW.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-010, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 7.68.030, 7.68.070 (12) and (16) and 51.04.030. 89-23-004, § 296-30-010, filed 11/3/89, effective 11/10/89. Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-010, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-010, filed 1/15/85.]

WAC 296-30-020 Vehicular assault. Chapter 7.68 RCW shall cover those people killed or injured as a result of a vehicular assault that occurred after July 24, 1983 if there

has been a conviction for the vehicular assault. Eligibility occurs when the claimant's injury results in the assailant's conviction for vehicular assault, or when the claimant's injury is a direct result of the collision that led to the vehicular assault conviction. The claimant's injury need not be the one that led to the conviction.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-020, filed 12/23/93, effective 1/24/94; 86-01-028 (Order 85-37), § 296-30-020, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-020, filed 1/15/85.]

WAC 296-30-025 Medical assistance eligibility. The benefits provided under chapter 7.68 RCW that are available and equivalent to those services provided under chapter 74.09 RCW or Title XIX of the Federal Social Security Act are not available to persons eligible for services provided under chapter 74.09 RCW or Title XIX of the Federal Social Security Act, except to the extent that costs for such services exceed service limits established by the department of social and health services. Accordingly:

(1) Applicants for benefits provided under chapter 7.68 RCW shall provide, concurrent with their application for crime victims' benefits, information requested by the department to determine the applicant's probable eligibility for services provided under chapter 74.09 RCW and Title XIX of the Federal Social Security Act. The applicant, or a person on behalf of the applicant, shall send the application and other requested information to the offices of the crime victims' compensation program in Olympia.

(2) The department shall provide application forms for crime victims' benefits, any forms used to determine probable eligibility for services provided under chapter 74.09 RCW or Title XIX of the Federal Social Security Act, and a pamphlet describing the crime victims' compensation program to hospitals, law enforcement agencies, community organizations, prosecutor based victim/witness units and, as requested, to other service groups. The pamphlet shall (a) explain the limitations of benefits provided under chapter 7.68 RCW; (b) provide assistance for an applicant in completing the forms; and (c) provide an applicant information about where additional assistance is available if the instructions for completing the forms are not understood or if unusual circumstances exist.

(3) Any claimant who is eligible for benefits provided under chapter 7.68 RCW and who the department determines may be eligible for services provided under chapter 74.09 RCW and Title XIX of the Federal Social Security Act, based upon the completed eligibility form referenced above, shall apply to the department of social and health services for a conclusive determination of eligibility for such services.

(4) Because a claimant's circumstances can change and in order to assure that the department provides crime victims' benefits secondary to other available public and private insurance, persons receiving benefits provided under chapter 7.68 RCW but not initially eligible to receive services provided under chapter 74.09 RCW or Title XIX of the Federal Social Security Act shall annually provide information requested by the department to determine the applicant's probable eligibility for services provided under chapter 74.09 RCW and Title XIX of the Federal Social Security Act in order to continue receiving benefits under chapter 7.68 RCW.

(5) The department shall not provide benefits for services provided under chapter 74.09 RCW and Title XIX of the Federal Social Security Act to persons who refuse or who otherwise fail to cooperate or comply in good faith with the requirements of this section, except to the extent that the costs for such services exceed service limits established by the department of social and health services.

(6)(a) Except for claims submitted pursuant to RCW 7.68.170 for sexual assault examinations, or as provided in (b) of this subsection the department shall not consider applications for benefits under chapter 7.68 RCW until the information requested to determine probable eligibility for services provided under chapter 74.09 RCW and Title XIX of the Federal Social Security Act is received by the department.

(b) If the applicant seeks only services that are covered under chapter 7.68 RCW but are not services provided under chapter 74.09 RCW or Title XIX of the Federal Social Security Act, such as appropriate counseling provided by a health care provider pursuant to WAC 296-30-080, the department shall consider applications for benefits under chapter 7.68 RCW without requiring information to determine probable eligibility for other services.

[Statutory Authority: RCW 7.68.030, 7.68.070 (12) and (16) and 51.04.030. 89-23-004, § 296-30-025, filed 11/3/89, effective 11/10/89.]

WAC 296-30-050 Distribution of third party recoveries. (1) Before July, 1977. Any claimant who receives crime victim's benefits is required to reimburse fully the department for all benefits paid to the claimant under chapter 7.68 RCW if the claimant recovers damages from the person or persons who committed the criminal act. The reimbursement is limited to the amount recovered by the victim.

(2) After July, 1977 and before April 1, 1980. Any claimant who receives crime victim's benefits is required to reimburse fully the department for all benefits paid to the claimant under chapter 7.68 RCW if the claimant recovers damages from any liable party. The reimbursement is limited to that amount recovered by the victim.

(3) An injury or death that occurred on or after April 1, 1980, for which recovery was made before July 24, 1983. This amendment incorporated the industrial insurance third party recovery statutes RCW 51.24.050 through 51.24.100 into chapter 7.68 RCW. The amendment changed the department's entitlement to reimbursement. For those victims injured or killed on or after April 1, 1980, and for which any recovery was made before July 24, 1983, disbursement of an award or settlement is as follows:

(a) Reasonable attorney's fees.

(b) Victim receives 25% of the balance.

(c) The department shall receive the balance to the extent necessary to reimburse the department for benefits paid.

(d) Any remaining balance is paid to the victim.

(e) If any remaining balance is paid to the victim, no further crime victim benefits will be paid to the victim until the amount of benefits she or he continued to be eligible for

equals the remaining balance paid at the time of settlement or award.

(4) Recoveries made on or after July 24, 1983, and before July 1, 1993. This subsection applies to all claimants who receive an award or settlement from a liable third party on or after July 24, 1983, and before July 1, 1993. These awards shall be disbursed as follows:

(a) Costs and reasonable attorney's fees paid proportionately by the victim and the department.

(b) Victim then receives 25% of the balance.

(c) Department receives the balance to the extent necessary to reimburse the department for its lien minus its share of attorney's fees.

(d) Any remaining balance goes to the victim.

(e) The department may compromise its lien for injuries that were sustained on or after April 1, 1980.

(5) Steps for determining proportionate attorney's fees:

(a) Determine the amount of the settlement or award obtained by the claimant.

(b) Determine attorney's fees and costs.

(c) For an open claim, determine the amount of the department's lien at the time of settlement or award. If the claim is closed at the time of the recovery, determine the claimant's full entitlement from the department.

(6) Calculate what percent of the total recovery equals the department's lien for open cases, and the claimant's entitlement for closed claims. This percent is the department's proportionate share.

Ex. in a nondeficiency judgment		
$	1,000	Gross recovery
$	200	Attorney fees
$	100	Entitlement or claim costs
$	20	Department's proportionate share of attorney's fees and costs. The $100 claim costs equals 10% of the total recovery. Thus, the department's proportionate share of attorney's fees are equal to 10% of $200 or $20
Ex. in deficiency judgments/recoveries		
$	1,000	Gross recovery
$	200	Attorney fees
$	2,000	Claim costs
$	1,000	
$	-200	Attorney fees
$	800	Claimant receives 25% of this figure = 200
$	-200	Claimant 25% share
$	600	Balance remaining goes to the department and is used to determine if settlement/judgment is deficient. If this balance is deficient, as it is here, this figure is used to calculate the department's proportionate share of attorney's fees and costs.
	60%	Department percent of attorney fees ($6.00 = 60% of $1,000 recovery)
$	120	Department's share of attorney fees
$	+200	Claimant's 25% share
$	320	Claimant's total recovery
$	600	Balance
$	-120	Attorney fees, department
$	480	Department's recovery

(7) Once the claim is closed, the department shall reexamine its proportionate share. If the claimant's final entitlement is greater than the amount of the department's lien at the time of recovery, the department shall reimburse the claimant for the department's increased percentage of the attorney's fees and costs.

Ex.:	$ 1,000	Recovery.
	$ 200	Attorney's fees and costs.
	$ 100	Department's lien at time of recovery.
	$ 20	Attorney's fees and costs paid at time of recovery.
	$ 500	Claimant's total entitlement (50% of total recovery).
	$ 100	Department's full proportionate share of attorney's fees and costs (50%, that amount determined by the claimant's entitlement).
	$ 80	The amount that the department must reimburse the claimant for attorney's fees and costs.

(8) Recoveries made on or after July 1, 1993, shall be governed by the provisions of RCW 51.24.060.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-050, filed 12/23/93, effective 1/24/94; 86-01-028 (Order 85-37), § 296-30-050, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-050, filed 1/15/85.]

WAC 296-30-060 Requirement to report criminal acts. (1) The following are examples under which the twelve-month reporting requirement in RCW 7.68.060 (1)(b) may be tolled:

(a) Unconsciousness or coma of victim.

(b) Youth of victim (because of age the victim is unaware that a crime has been committed against her).

(c) Rape trauma syndrome.

(d) A report of an assault against a child made to children's protective services when the report is made within twelve months of when it reasonably could have been made.

(2) This list is not and should not be considered exhaustive but is for illustrative purposes.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-060, filed 12/23/93, effective 1/24/94; 86-01-028 (Order 85-37), § 296-30-060, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-060, filed 1/15/85.]

WAC 296-30-080 Counseling for sexual assault. (1) Pursuant to RCW 7.68.070(12), the department shall pay for counseling for victims of sexual assault and, when appropriate, for members of a victim's immediate family. An immediate family member shall be defined as the victim's parents, spouse, child(ren), siblings, grandparents, and those members of the same household who have assumed the rights and duties commonly associated with a family and who hold themselves out as a family unit.

(2) Counseling for the above defined family members is appropriate when:

(a) The counseling is for the spouse, child, parent, or sibling of the victim who suffers psychological trauma as a result of the sexual assault; or

(b) The family member and victim live in the same household and the family member suffers psychological trauma as a result of the sexual assault; or

(c) The family member sees the assault; or

(d) Counseling of the family member will aid in the victim's recovery.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-080, filed 12/23/93, effective 1/24/94; 86-01-028 (Order 85-37), § 296-30-080, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-080, filed 1/15/85.]

WAC 296-30-081 Acceptance of rules and fees for medical and mental health services. Providing medical or counseling services to an injured crime victim whose claim

for crime victims compensation benefits has been accepted by the department constitutes acceptance of the department's medical aid rules and compliance with its rules and fees. Maximum allowable fees shall be those fees contained in the publications entitled *Medical Aid Rules and Fee Schedules and Crime Victims Compensation Mental Health Treatment Rules and Fees*, less any available benefits of public or private collateral resources, except as follows:

The percentage of allowed charges authorized by WAC 296-23A-105: Payment for hospital inpatient and outpatient services, WAC 296-23A-155: New hospitals, WAC 296-23A-160(3): Excluded and included services, and WAC 296-23A-165: Out-of-state hospitals shall be equal to the percentage of allowed charges established by the department of social and health services under Title 74 RCW and WAC 388-87-070(6): Payment hospital inpatient services.

If any of the maximum allowable fees in the publications entitled *Medical Aid Rules and Fee Schedules and Crime Victims Compensation Mental Health Treatment Rules and Fees* is lower than the maximum allowable fees for those procedures established by the department of social and health services under Title 74 RCW, the Title 74 RCW fees are the maximum allowable fees for those procedures.

Prior to the establishment or amendment of the fee schedules, the department will give at least thirty calendar days notice by mail to interested persons who have made timely request for advance notice of the establishment or amendment of the fee schedules. To request advance notice of the establishment or amendment of the medical fee schedules, interested persons must contact the department at the following address:

Department of Labor and Industries
Health Services Analysis
P.O. Box 44322
Olympia, WA 98504-4322

To request advance notice of the establishment or amendment of the mental health fee schedules, interested persons must contact the department at the following address:

Department of Labor and Industries
Crime Victims Compensation Section
P.O. Box 44520
Olympia, WA 98504-4520

An injured victim shall not be billed for his or her accepted injury. The department shall be billed only after available benefits of public or private insurance have been determined.

If the service provider has billed the injured victim and is later notified that the department has accepted the victim's claim, the provider shall refund to the injured victim any amounts paid that are in excess of the amounts that the victim is entitled to from public or private insurers, and bill the department for services rendered at fee schedule rates if such rates are in excess of the public or private insurance entitlements.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-081, filed 12/23/93, effective 1/24/94; 92-23-034, § 296-30-081, filed 11/13/92, effective 12/14/92; 92-16-033, § 296-30-081, filed 7/30/92, effective 8/30/92; 86-01-028 (Order 85-37), § 296-30-081, filed 12/11/85.]

WAC 296-30-120 Factors considered in order to modify debt due department. RCW 7.68.120 allows the department in the interest of justice or rehabilitation, to waive, modify, or adjust the debt owed to the department by any person found to have committed the criminal act for which crime victim benefits were paid. To determine whether or not the debt should be modified, waived or adjusted, the department shall consider the following factors:

(1) The gravity of the offense;
(2) Extent of injury to victim;
(3) Type of crime;
(4) Circumstances surrounding the criminal act;
(5) The assailant's attempts at rehabilitation:
(a) Rehabilitation program involvement;
(b) Employment efforts;
(c) Community involvement;
(6) Ability to pay:
(a) Income;
(b) Necessary expenses;
(c) Number and ages of dependents;
(7) Sentence imposed by the court.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-120, filed 12/11/85.]

WAC 296-30-130 Lump sum benefits. (1) Lump sum benefits paid to the survivor(s) of an unemployed victim shall be paid on a monthly basis if the survivor(s) is entitled to private or public death benefits. The death benefit payments shall be deducted each month from the crime victim's death benefits. Crime victim's benefit payments shall continue until the combined public or private death benefits and the crime victim's death benefits equal the total amount that the survivor(s) is eligible for under chapter 7.68 RCW.

(2) The amount of the monthly payments is based on the state's average monthly wage and are determined by the percentages established in RCW 51.32.050.

(3) This lump sum payment shall be adjusted upward by a factor of 8% to reflect the present and future value of the money.

(4) The survivor(s) of an employed victim are entitled to the maximum in death benefits prescribed by RCW 7.68.070(13). These benefits shall be paid in the same manner as the benefits paid to the survivor(s) of an unemployed victim except that the monthly rate shall be determined by the deceased's regular rate of pay.

(5) This procedure was adopted to ensure equal treatment of survivor(s) in like circumstances.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-30-130, filed 12/23/93, effective 1/24/94; 86-01-028 (Order 85-37), § 296-30-130, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-130, filed 1/15/85.]

WAC 296-30-170 Payment for medical examination of victims of sexual assault. A victim of sexual assault is entitled to payment for the costs of a medical examination under RCW 7.68.170 regardless of whether she or he qualifies for benefits under chapter 7.68 RCW, if the hospital or emergency medical facility proves to the department that:

(1) The care was provided; and

(2) The examination was performed at least in part to gather medical evidence for possible prosecution of the assailant.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-170, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-170, filed 1/15/85.]

WAC 296-30-180 Payment of benefits to prevent unjust enrichment. RCW 7.68.070(15) prohibits the department from paying any benefits or compensation to the person who caused a crime victim's injuries, or to any other person if that person would be unjustly enriched by the benefits. In some situations, as when a child is injured by a parent or a spouse by the other spouse, there is a danger that the injuring person will divert to her own use the benefits or compensation intended for the victim.

To prevent this possibility, the department may on its own motion or the motion of the victim or his or her guardian, request that the victim or other responsible adult establish (1) a trust for which the trustee shall be a neutral third person; or (2) a savings or checking account for which a neutral third person must cosign all withdrawals or checks. Crime victims compensation benefits shall then be deposited in the established account.

The department shall continue to pay medical providers directly.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-180, filed 12/11/85.]

WAC 296-30-900 Effective date of amendatory acts. (1) The statute in effect at the time the criminally caused injury occurred is the controlling law.

[Statutory Authority: Chapter 7.68 RCW. 85-03-060 (Order 85-3), § 296-30-900, filed 1/15/85.]

Chapter 296-31 WAC
CRIME VICTIMS COMPENSATION MENTAL HEALTH TREATMENT RULES AND FEES

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-31-095 Consultation fees. [Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-095, filed 11/13/92, effective 12/14/92.] Repealed by 94-02-015, filed 12/23/93, effective 1/24/94. Statutory Authority: Chapter 7.68 RCW.

WAC 296-31-010 Mental health treatment overview. (1) The crime victim compensation program provides mental health treatment to victims of crime, except for the provisions of WAC 296-30-025 (6)(b), secondary to treatment available from any other public or private insurance, who are eligible for compensation under the provisions of chapter 7.68 RCW. Eligible claimants are entitled to receive proper and necessary mental health treatment.

(2) Services and treatment are limited to those procedures which are proper and necessary, and at the least cost, consistent with accepted standards of mental health care which will enable the claimant to obtain maximum recovery and/or:

(3) In the case of a permanent partial disability, treatment or services are not to extend beyond the date when permanent partial impairment or disability compensation is awarded. No treatment or services will be authorized beyond the point that the accepted condition is fixed and stable.

(4) In the case of a permanent total disability, treatment is not to extend beyond the date on which the claimant is placed upon a permanent pension roll except that in the sole discretion of the department continued treatment for conditions previously accepted by the department may be allowed when such treatment is deemed necessary to protect the claimant's life or to provide for the administration of therapeutic measures. This includes payment of prescription medications necessary to alleviate continuing pain resulting from the accepted condition but does not include those controlled substances scheduled by the state board of pharmaceuticals as schedule I, II, III, IV substances under chapter 69.50 RCW.

(5) Mental health treatment requiring preauthorization:

Inpatient hospitalization;

Therapy involving a regular single session exceeding one hour per week;

Concurrent treatment;

Family therapy (including all therapy provided to family members) beyond twelve sessions;

Multiple family group therapy beyond twelve sessions;

Therapy for survivors of victims of homicide beyond twelve sessions;

Electroconvulsive therapy;

Neuropsychological evaluation (testing);

Day treatment;

Referrals to special programs.

Requests for authorization must be in writing and include a statement of:

(a) The condition(s) diagnosed;

(b) ICD-9-CM and/or DSM-III-R codes;

(c) The relationship of the condition(s) diagnosed to the assault, if any;

(d) An outline of the proposed treatment program, its length and components, procedure codes, and expected prognosis.

(6) Rejected and closed claims:

No payment will be made for treatment or medication on rejected claims or for services rendered after the date of closure of a claim.

When the department has denied responsibility for an alleged crime victim injury or condition, the only services which will be paid are those which were carried out at the

specific request of the department and/or those assessment or diagnostic services which served as a basis for the adjudication decision. Following the date of the order and notice of claim closure, the department will be responsible only for those services specifically requested or those assessments and/or diagnostic services necessary to complete and file a reopening application.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-010, filed 11/13/92, effective 12/14/92.]

WAC 296-31-020 Definitions. This section explains the department's definitions of terms used throughout the sections as they apply to claimants.

Acceptance, accepted condition: Determination, in writing, by a qualified representative of the department, that reimbursement for the diagnosis and rehabilitative treatment of a claimant's mental health condition are the responsibility of the department. The condition being accepted must be specified by one or more diagnostic codes from the current edition of the International Classification of Diseases, Clinically Modified (ICD-CM), or by DSM III-R, and by use of words to describe the symptoms connected to or citing ICD-CM or DSM III-R diseases.

Authorization: Notification, in writing or by telephone, by a qualified representative of the department, that specific necessary treatment, services, or equipment recommended by a provider for the diagnosis or rehabilitative treatment of an accepted condition will be reimbursed by the department. Providers must insure they maintain records indicating the name of the qualified representative who authorizes treatment or equipment.

Claimant: A person who submits, or on whose behalf is submitted, an application for benefits under the Crime Victims Act.

Consultation: The services rendered by a mental health provider whose opinion or advice is requested by the attending (treating) mental health provider, or agency, or by the department in the evaluation and/or treatment of a claimant. Case management or case staffing does not constitute a consultation. Treatment of a claimant is not a consultation.

Crisis intervention: Therapy to alleviate the most pressing problems and attempt to use the crisis as an opportunity for positive change; the vital mental and safety functions of the client are stabilized by providing support, structure and, if necessary, restraint.

Disability awards for mental health conditions: Direct monetary compensation that may be provided to an eligible claimant who is either totally temporarily disabled, permanently partially disabled, or totally permanently disabled resulting from an accepted condition. Under Washington law, permanent disability awards are based solely on mental impairment due to the accepted injury or conditions without consideration of economic factors. Disability rating exams must be provided by a physician.

Elective nonemergent hospital admission: Placement of the claimant in an acute care hospital or residential treatment facility for mental health treatment of a claim related mental health condition which may be safely scheduled in advance without jeopardizing the claimant's health or treatment outcome.

Emergent hospital admission: Placement of the claimant in an acute care hospital, psychiatric hospital, or, residential treatment facility for treatment of a claim related mental health condition of an unforeseen or rapidly progressing nature which, if not treated in an inpatient setting, is likely to jeopardize the claimant's health or treatment outcome.

Family therapy: Therapy involving the therapist, and one or more members of the claimant's family (excluding the perpetrator if also a family member) and which centers on issues resulting from the claimant's assault.

Group therapy: Therapy involving the claimant, the therapist, and one or more clients who are not related to the claimant and which includes issues both related to the claimant's assault and pertinent to other group members, not necessarily related to the claimant's assault.

Homicide survivor: An immediate family member of a homicide victim as the result of a criminal act committed on or after July 1, 1992. Homicide survivors may receive appropriate counseling to assist them with the immediate, near term consequences of the related effects of the homicide.

Immediate family members: Any claimant's parents, spouse, child(ren), siblings, grandparents, and those members of the same household who have assumed the rights and duties commonly associated with a family and who hold themselves out as a family unit.

Individual therapy: Therapy provided on a one to one basis between a therapist and claimant.

Mental health services provider: Any person, firm, corporation, partnership, association, agency, institution, or other entity providing any kind of mental health services related to the treatment of a claimant. This includes, but is not limited to, hospitals, psychiatrists, psychologists, advanced registered nurse practitioners with a specialty in psychiatric and mental health nursing, registered and/or certified master level counselors, and other qualified service providers licensed, registered and/or certified with the department of health and registered with the crime victims program. (Refer to WAC 296-31-030 for specific details.)

Modified work status: When the claimant is not able to return to previous work, but is capable of carrying out work of a lighter, or otherwise different nature.

Necessary treatment: Those health services or treatments which, in the opinion of the director or his or her designee are:

Proper and necessary for the diagnosis or rehabilitative treatment of an accepted condition;

Reflective of accepted standards of good practice within the scope of the provider's license, certification, or registration;

Not delivered primarily for the convenience of the claimant, the claimant's attending provider, or any other provider; and

Provided at the least cost and in the least intensive setting of care consistent with accepted standards of care/accepted therapeutic practice and with the other provisions of this definition. Services which are inappropriate to the accepted condition, or which present hazards in excess of the expected mental health benefits, are not considered necessary. Services which are obsolete are not authorized. Services which are controversial, experimental, or investiga-

tional are presumed not to be consistent with accepted standards of care and shall only be authorized on an individual case basis with written authorization for the service from the department.

Office notes: Written records of treatment, or other work products, documenting specific charges billed, as opposed to reports of evaluation and progress independently submitted to the department or to other parties.

Permanent partial disability: Providers are required to notify the department of any claimant's accepted condition where permanent functional impairment or loss is indicated after maximum rehabilitation has been achieved, which is determined to be stable and fixed at the time the evaluation is made. The department will arrange to have impairments rated using the category system under WAC 296-20-200 et al.

Regular work status: When the injured claimant is capable of returning to his/her regular work, the attending provider must notify the claimant and the department of the specific date of release to return to regular work. Time loss compensation will be terminated on the release date. Further treatment may be allowed as requested by the attending provider if the condition is not stable or fixed and treatment is needed for the accepted condition.

Repressed memory: A condition of not having or had conscious memory of an act. For the purpose of these rules describing this condition under this section the definition means that a claimant regained conscious memory of victimization caused by a criminal act committed against them as a minor.

Temporary partial disability: Partial time loss may be paid when the claimant can return to work on a limited basis, or, return to a lesser paying job is necessitated by the accepted condition. However, the claimant must have a reduction in wages of at least five percent before loss of earning power can be paid.

Termination of treatment: When treatment is no longer required because the accepted condition for which the claim was allowed has become stable, the provider must submit a report indicating the date the condition became stable to the department. This is necessary to initiate closure of the crime victim's compensation claim.

Time loss certification: Certification from a physician based upon findings which are specific symptoms that an accepted condition of a claimant either partially or totally incapacitates the claimant from returning to work. Such symptoms may include, but are not limited to: Anxiety, depression, loss of appetite, weight loss, flat affect, inability to concentrate, inability to complete tasks. The department requires that all claims for time loss compensation must be certified by a physician.

Total permanent disability: A condition permanently incapacitating a claimant from performing any work at any gainful occupation.

Total temporary disability (time loss): The claimant is temporarily unable to return to any type of reasonably continuous gainful employment as a direct result of an accepted condition. Time loss compensation will be paid if the victim was employed on the date of their criminal injury, or, if not, if the victim was employed three or more consecutive months during the twelve months immediately preceding the date of the assault.

Utilization review: The assessment of a claimant's mental health care for assurance that it is necessary and of good quality. Assessments typically consider the appropriateness of the place of care, level of care, and the duration, frequency or quantity of services provided in relation to the accepted condition being treated.

Victim: A person who suffers bodily injury or death as the proximate result of a criminal act of another person, the claimant's own good faith and reasonable effort to prevent a criminal act, or his or her good faith effort to apprehend a person reasonably suspected of engaging in a criminal act. For the purposes of receiving benefits, "victim" is interchangeable with "employee" or "worker" as defined in the Industrial Insurance Act. For the purpose of these rules "bodily injury" means any harmful or offensive touching, and includes severe emotional distress where no touching takes place as defined and under the conditions outlined in WAC 296-30-010(2).

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-31-020, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-020, filed 11/13/92, effective 12/14/92.]

WAC 296-31-030 General provider requirements—Who may treat. (1) Mental health providers who may treat claimants under the Crime Victims Act must register with the crime victims compensation program and qualify as an approved provider under these rules. The department must register the mental health provider before the mental health provider is eligible for payment for services.

(2) Washington permanently licensed psychiatrists, psychologists and advanced registered nurse practitioners with a specialty in psychiatric and mental health nursing, and registered and/or certified master level counselors whose master's degree is in a field of study related to mental health services including but not limited to, social work, marriage and family therapy or mental health counseling, who are registered with the crime victims program are authorized to provide treatment in accordance with these rules to claimants.

Out-of-state providers must be licensed, registered and/or certified in accordance to the licensing requirements within the state in which they practice. Copies of license, registration and/or certification must be provided when applying for approval to treat Washington state crime victims.

In areas where the department has determined licensed, and/or certified providers are not available, the department may consider registration exceptions on an individual case basis.

(3) The department has a duty to supervise provision of proper and necessary mental health care that is delivered promptly,
efficiently, and economically. The department may deny, revoke, suspend, limit, or impose conditions on a mental health care provider's authorization to treat victims under the Crime Victims Act. Reasons for imposing any of the above restrictions include, but are not limited to the following:

(a) Negligence or incompetence which results in injury to a claimant or which creates an unreasonable risk that a claimant may be harmed.

(b) The illegal possession, use, prescription for use, or distribution of controlled substances, legend drugs, or addictive, habituating, or dependency-inducing substances in any way other than for therapeutic purposes.

(c) Any temporary or permanent probation, suspension, revocation, or other relevant type of limitation of a provider's license, certification or registration to practice by any court, board, or administrative agency.

(d) The commission of any act involving moral turpitude, dishonesty, or corruption relating to the practice of the provider's profession. The act need not constitute a crime. If a conviction or finding of such an act is reached by a court or other tribunal pursuant to plea, hearing, or trial, a certified copy of the conviction or finding is conclusive evidence of the violation.

(e) Failure to comply with the department's orders, rules, or policies.

(f) Failure, neglect, or refusal to:

(i) Submit copies of license, certification and/or registration and degree to the department.

(ii) Maintain and provide records requested by the department pursuant to a health care services review or an audit.

(iii) Submit complete, adequate, and detailed reports or additional reports requested or required by the department regarding the treatment and condition of a claimant.

(g) The submission of, or collusion in the submission of, false or misleading reports or bills to any government agency.

(h) Billing a claimant for:

(i) Treatment of a condition for which the department has accepted responsibility; or

(ii) Any amount more than the amount paid by the department under the maximum allowable fee set forth in these rules and any other charge with the exception of "no show" appointment charges. The department has no provision to pay charges for missed appointments, except for independent assessments arranged by the department. Claimants may be billed directly for missed or "no show" appointments.

(i) Repeated failure to recognize emotional and social factors impeding recovery of a claimant who is being treated under the Crime Victims Act.

(j) Repeated unreasonable refusal to comply with the recommendations of board certified or qualified consultants who have examined or reviewed a claim for the department.

(k) Repeated use of:

(i) Treatment of controversial or experimental nature;

(ii) Contraindicated or hazardous treatment; or

(iii) Treatment past stabilization of the condition or after maximum mental health improvement has been obtained.

(l) Declaration of mental incompetency by a court or other tribunal.

(m) Failure to comply with the applicable code of professional conduct or ethics.

(n) Failure to inform the department of any disciplinary action issued by order or formal letter taken against the provider's license, certification or registration to practice.

(o) The finding of any peer group review body of reason to take action against the provider's practice privileges.

(p) Misrepresentation or omission of any material information in the application for authorization to treat claimants.

(q) Repeated billing of the department for services that are available to claimants from public or private insurance sources. The crime victims compensation program is a secondary insurer. Providers should bill the department only after all benefits available to the claimant from public or private insurance are exhausted.

(4) If the department finds reason to take corrective action, the department may also order one or more of the following:

(a) Recoupment of payments made to the provider, including interest; at the rate of one percent per month or portion of a month beginning on the thirty-first day after payment was made.

(b) Denial or reduction of payment;

(c) Placement of the provider on a prepayment review status requiring the submission of supporting documents prior to payment;

(d) Requirement to satisfactorily complete education courses and/or programs; and

(e) Imposition of other appropriate restrictions or conditions on the provider to include revocation of the privilege to be reimbursed for treating victims under the Crime Victims Act.

(5) The department shall forward a copy of any corrective action taken against a provider to the applicable disciplinary authority.

(6) Appeal and protest rights: A provider may file a written protest to any department order, decision, or award. An appeal or protest to an order or decision demanding repayment of sums must be submitted to the department or the board of industrial insurance appeals within twenty days from receipt of the order or decision. An appeal or protest to an order or decision regarding other issues, e.g., ongoing treatment or provider eligibility, must be filed within sixty days from receipt of the order or decision. Appeal and protest rights are governed under chapter 51.52 RCW and RCW 7.68.110.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-030, filed 11/13/92, effective 12/14/92.]

WAC 296-31-040 Special programs. (1) The department may enter into special agreements for services or special treatment modalities or services provided by community based mental health treatment centers, rape crisis centers, domestic violence shelters, medical facilities, and medical facility based sexual assault treatment centers, provided under the direction of registered providers authorized to bill the department. Special agreements are for services or treatment modalities other than routine services or treatment modalities covered under the fee schedule, and may include, but are not limited to, group counseling, crisis counseling, and emergency assistance and referral programs, or multidisciplinary or inter-disciplinary programs such as day treatment, drug, alcohol, and chemical dependency treatment.

(2) The department shall establish payment rates for special agreements or treatment modalities, and may establish outcome criteria, measures of effectiveness, minimum

staffing levels, certification requirements, special reporting requirements, and such other criteria as will ensure that claimants receive good quality and effective services treatment at the least cost, consistent with necessary services.

(3) Special agreements shall be purchased or authorized at the discretion of the department. The department may terminate special programs from the crime victims compensation program upon thirty days notice to the provider.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-040, filed 11/13/92, effective 12/14/92.]

WAC 296-31-050 Initial treatment and application for benefits. (1) It is the responsibility of the crime victim to notify the provider if the claimant has reason to believe his or her condition is related to a criminal assault. If the attending provider discovers a condition which he or she believes to be crime related or has reason to believe a condition is crime related, he or she must so notify the claimant. It is the provider's responsibility to ascertain whether he or she is the first attending provider. If so, the following action shall be taken by the attending provider:

(a) Provide crisis intervention if necessary.

(b) Immediately complete the provider portion of the application for benefits.

(c) Instruct and give assistance to the crime victim in completing his or her portion of the application for benefits.

In completing a claim or application, the following information is necessary so there is no delay in adjudication of the claim or payment of compensation:

(i) Complete history of the condition, physical findings if appropriate, and symptomatology resulting from the crime.

(ii) Specific diagnosis with ICD-9-CM or DSM III-R code(s), including axes 1 through 5, or a description of symptoms, consistent with and connected to the diagnostic criteria contained within DSM III-R, relating to the injury.

(iii) Type of treatment rendered.

(iv) Known emotional, or social conditions which may influence recovery or cause complications.

(v) Estimate of time loss (if any) due to the injury.

(2) If the claimant remains under the provider's care, continue with necessary treatment in accordance with mental health rules.

If the provider is not the original attending provider, he or she should question the claimant to determine whether an application for benefits has been filed for the condition. If no application has been previously filed, it should be completed immediately and forwarded to the department with information as to the name and address of the original provider if known, so that he/she may be contacted for necessary information. If an application has been filed, it is necessary to have the claimant submit in writing a request for transfer as outlined in WAC 296-31-065, if the claimant and provider agree that a change of provider is desirable.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-050, filed 11/13/92, effective 12/14/92.]

WAC 296-31-060 Reporting requirements. The department may require reports at any time as is necessary in order to determine initial or continued authorization of benefits or services. However, the department requires the following reports at various stages of a claim in order to authorize mental health treatment or services, time loss compensation, and bill payments for innocent victims of crime:

(1) **Initial report of injury**: To establish a claim, an application for benefits must be completed and submitted to the department. The provider may bill under code 90001 for the filing of the application. In addition, the examination or assessment charge may be billed. Reimbursement of these services will be paid if the claim is allowed by the department. Billing for an extended or comprehensive visit of more than one hour may require submission of additional reports.

(2) **Initial evaluation report**: This report may be submitted with the application for benefits by either the provider or claimant, or no later than thirty days from the date of first treatment. The report must include the preliminary diagnosis and symptoms, proposed treatment plan and treatment goals, and expected length of treatment. It must also include a diagnosis of any preexisting conditions and their potential effect on the condition resulting from the assault. Any change in session frequency from that stated in this report will require authorization.

(3) **Office notes and follow-up visits**: Legible copies of office or progress notes or other work products may be, as determined by the department, required documentation to substantiate all follow-up visits or treatment following the initial evaluation. Office notes are not acceptable in lieu of requested narrative reports.

(4) **Ninety-day narrative reports**: When treatment is to continue beyond ninety days from the first date of treatment, submission of a narrative report is required every ninety days to substantiate the need for continued care. A narrative report must contain the basic information outlined in these rules. A narrative report should be billed under code 99080 and described as a ninety-day report. Treatment in excess of ninety days may be authorized by the department only after receipt and review of the ninety-day narrative report. Absence of a response from the department to a report shall constitute authorization for continued treatment. When treatment beyond ninety days will not be authorized or is authorized with limits on frequency or provider type, notification will be sent by the department giving a thirty-day transition period. In the case of a contested decision, a claimant or a provider may file a written protest to the department or appeal to the board of industrial insurance appeals. The information required for the narrative report is contained under WAC 296-31-090.

(5) **Hospital reports**: When the claimant is hospitalized, it is the responsibility of the attending mental health provider to submit his or her reports to the hospital for submission with the hospital billing. The attending mental health provider may bill for hospital visits without attaching copies of the reports.

(6) **Consultation reports**: To substantiate treatment of more than one hundred eighty days, a consultation with a consultant chosen by the attending mental health provider is required. The department may require the claimant to be examined by the consultant as part of the consultation process with supervisory approval. Although no prior authorization is required for such consultations, the department must be notified when such consultation is arranged. The consultant is responsible for submitting a copy of the

report as outlined in these rules within fifteen days from the date of the consultation. Treatment may only be authorized to extend beyond one hundred eighty days in mental health cases after the department has received this report. Absence of response, by the department upon receipt of the report shall constitute authorization for additional treatment. When extended treatment will not be authorized or will be terminated, notification will be sent by the department giving a thirty-day transition period. See WAC 296-20-01002 for consultation report requirements.

(7) **Ninety-day follow-up reports**: Following the one hundred eighty-day report and consultation, additional narrative reports are still required at ninety-day intervals. The department may request additional consultations and/or independent assessments as warranted by the individual case.

(8) **Termination reports**: When a mental health practitioner discontinues treatment of a claimant because the condition for which treatment was provided is fixed and stable or for any other reason, a termination report shall be completed and provided to the program within sixty days of the last visit.

(9) **Reopening application**: On claims closed over sixty days, the department will pay for completion of a reopening application (Code 90097), an office visit and diagnostic studies necessary to complete the application, (see WAC 296-20-01002). No other benefits will be paid until the adjudication decision is rendered.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-31-060, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-060, filed 11/13/92, effective 12/14/92.]

WAC 296-31-065 Ongoing treatment. (1) Cases that remain open more than one hundred eighty days: When the claimant requires treatment beyond one hundred eighty days, a consult with another mental health provider is necessary to determine and/or establish the need for continued treatment and/or payment of time-loss compensation. This may be accomplished by the attending mental health provider in consultation with a provider who also satisfies the department requirements. A detailed consultation report must be provided to the department.

Three levels of consultation are recognized: Limited, extensive and complex. Detailed descriptions of each type of consultation are included in the publication entitled *Crime Victims Compensation Mental Health Treatment Rules and Fees*.

(2) Procedures and/or continued treatment requiring consultation: In the event of complication, controversy, or dispute over the treatment aspects of any claim, the department will not authorize continued treatment until the complication, controversy, or dispute has been resolved and the department has received notification of any findings and reviewed any recommendations.

(a) The department may consider claims as complicated, controversial or disputed when involving treatment or conditions as follows:

(i) All individual counseling or psychotherapy, pertaining to immediate family members, requiring treatment sessions of more than twelve visits.

(ii) All family therapy visits, not including the claimant, requiring more than twelve visits.

(iii) All conditions not related to the accepted condition involving emotional, psychiatric, or social problems which are likely to complicate recovery.

(iv) All therapeutic procedures of a controversial nature or type not in common use for the specific condition.

(v) Cases where there are complications or unfavorable circumstances such as age, preexisting conditions, or, because of occupational requirements, etc.

(vi) Elective nonemergent hospital admission.

(vii) Any other circumstance that the department may define.

(b) The department may resolve issues of claim complication, controversy, or dispute using consultants, independent assessments and/or requesting a review of policies or procedures by the department's mental health advisory committee. The committee may recommend courses of action to resolve these issues to including, but not limited to, recommendation of an independent assessment.

(c) In cases presenting diagnostic or therapeutic problems difficult to resolve to the attending mental health provider (psychiatrist, psychologist and/or counselor), consultation with a specialist will be allowed without prior authorization. The consultant must submit his or her findings and recommendations immediately to the attending provider and the department. See WAC 296-31-095 and 296-20-035 for report contents and requirements.

(i) Whenever possible, the referring mental health provider should make his or her records available to the consultant to avoid unnecessary duplication. Consultants may proceed with indicated and reasonable diagnostic studies as permitted within their scope of practice.

(ii) Consultations must be held within the local geographic area of the claimant's residence, if possible, and with a consultant not having a mutual proprietary or business interest with the attending mental health provider. Exceptions to this requirement may be made only with department preauthorization. The department does not prohibit the use of members of the same professional or social associations.

(iii) The mental health provider will not arrange a consultation if notification has been received that an independent assessment is being arranged by the department. If a recent consultation has been completed and the attending mental health provider is notified that the department is arranging an assessment, the department must be advised immediately of the consultation.

(iv) The consultation fee will be paid only if a consultation report is complete (see WAC 296-20-035) and contains all psychological findings as well as all pertinent negative or normal findings. The report must be received in the department within fifteen days from the date of the consultation. No fee may be paid to the consultant, by the department, if the claimant misses/fails to attend the appointment. However, the claimant may be billed directly.

(v) The consultant may not order, prescribe, or provide treatment without the consent of the claimant. No transfer will be made to the consultant without the written request of the claimant.

(3) Concurrent treatment: In some cases, treatment by more than one provider may be allowed. The department will consider authorization of concurrent treatment when the accepted condition requires specialty or multidisciplinary care. When requesting consideration of concurrent treat-

ment, the attending mental health provider must provide the department with the following: The name, address, discipline, and specialty of all other providers requested to assist in the treatment of the claimant and an outline of their responsibility in the case and an estimate of the length of the period of concurrent care. When concurrent care is allowed, the department will recognize one primary attending mental health provider, who will be responsible for directing the over-all treatment program; providing copies of all reports and other data received from the involved providers and, in time loss cases, providing the adequate certification evidence of the claimant's inability to work. The department will approve concurrent care on an individual case basis.

(4) Transfer of attending provider: All transfers from one provider to another must be approved by the department. Normally transfers will be allowed only after the claimant has been under the care of the attending mental health provider for sufficient time for the provider to: Complete the necessary diagnostic studies, establish an appropriate treatment regimen, and evaluate the efficacy of the therapeutic program. Under RCW 51.36.010 claimants are entitled to free choice of attending provider subject to the limitations of RCW 7.68.130. Except as provided under (a) through (g) of this subsection, no reasonable request for transfer will be denied. The claimant must be advised when and why a transfer is denied. The department reserves the right to require a claimant to select another provider for treatment, under the following conditions:

(a) When more conveniently located providers, qualified to provide the necessary treatment, are available.

(b) When the attending provider fails to cooperate in observance and compliance with the department rules.

(c) In time loss cases where reasonable progress towards return to work is not shown.

(d) Cases requiring specialized treatment, which the attending provider's authority is not qualified to render, or is outside the scope of the attending provider's authority to practice.

(e) Where the department finds a transfer of provider to be appropriate and has requested the claimant to transfer in accordance with this rule, the department may select a new attending provider if the claimant unreasonably refuses or delays in selecting another attending provider.

(f) In cases where the attending provider is not qualified to treat each of several accepted conditions. This does not preclude concurrent care where indicated.

(g) No transfer will be approved to a consultant without the written request of the claimant. Transfers will be authorized for the foregoing reasons or where the department in its discretion finds that a transfer is in the best interest of returning the claimant to a productive role in society.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-31-065, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-065, filed 11/13/92, effective 12/14/92.]

WAC 296-31-069 Independent assessments. (1) Independent assessments may be ordered by the department or requested of the department by the attending provider. Such assessments are usually ordered or requested after consultations for one of the following purposes:

(a) To establish a diagnosis. Prior diagnoses may be controversial or ill-defined.

(b) To outline the treatment rationale, where treatment or progress is vague or controversial.

(c) To establish therapeutic data to determine if the condition requiring treatment is related to conditions sustained and allowed by the department as a result of a specific criminal act.

(d) To determine the extent and duration of aggravation of any preexisting mental health condition.

(e) To establish when the claimant has reached maximum benefit from treatment.

(f) To establish a percentage rating of any permanent impairment, for mental health conditions when maximum recovery is reached.

(g) To determine indications for reopening of a claim for further treatment on basis of the aggravation of the accepted condition.

(h) To determine eligibility qualifications of claimants applying under RCW 7.68.060(3), the repressed memory provision of the Crime Victims Act.

(2) Independent assessments for mental health conditions may be ordered by claims adjudicators without supervisory approval to rate permanent impairment when treatment has been completed, to determine the department's responsibility for treatment that has been rendered retroactively where significant causal relationship questions exist and to determine eligibility qualifications of claimants applying under RCW 7.68.060(3), the repressed memory provision of the Crime Victims Act. All other reasons for ordering independent assessments for mental health conditions require supervisory approval.

(3) The following shall be reported by the assessing practitioner:

(a) Independent assessments must be specific and factual.

(b) The claimant's medical and mental health history must be checked for accuracy, variation or exaggeration compared to documented history provided to the examiner for this assessment.

(c) Diagnosis: Must be specific and describe the mental health condition and symptomatology found using DSM III-R, and be substantiated by history.

(d) Conclusions: Must be specific and must definitely express an opinion concerning the purpose for which the assessment was requested, and should be consistent with the history and diagnosis reported.

(e) Permanent disability: Ratings must be supported by sufficient data to establish the category disability rating; also the report must demonstrate and articulate a definite causal relationship to the accepted condition(s) on a more probable than not basis.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-069, filed 11/13/92, effective 12/14/92.]

WAC 296-31-070 Provider obligations—Acceptance of rules and fees. (1) The filing of a crime victims compensation claim, or the rendering of treatment to a victim who comes under the department's jurisdiction constitutes acceptance of the department's crime victims compensation mental health rules and mental health fees and compliance

with its rules and fees. In accordance with RCW 7.68.060(1) of the Crime Victims Act, when a mental health provider renders treatment to a victim entitled to benefits under the law, it shall be the duty of the mental health provider to inform the victim of his or her rights under this title and to lend all necessary assistance in making the application for compensation and such proof of other matters as required by the rules of the department without charge to the victim; a victim shall not be billed for treatment rendered for his or her accepted condition. The department may be contacted to obtain brochures and copies of the act.

When there is questionable eligibility, (e.g., service is not usually allowed for crime victims when a investigation or claim determination is pending), the provider may require the claimant to pay for the treatment rendered. In cases of questionable eligibility where the provider has billed the claimant or other insurance, and the claim is subsequently allowed, the provider shall refund the claimant in full within thirty days of notification of allowance of claim and bill the department for services rendered at usual and customary charges. Cases in which there is a question of ethics or quality of care will be referred to the department of health.

(2) The department must be notified immediately when an unrelated condition is being treated concurrently with an accepted condition. See WAC 296-20-055 for specific information required.

(3) Penalties. The reporting requirements and penalty provision for physicians contained in RCW 51.36.060 and 51.48.060 shall be the same for physicians under these rules pursuant to RCW 7.68.100.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-070, filed 11/13/92, effective 12/14/92.]

WAC 296-31-071 Keeping of records. A provider who requests payment from the department for services shall maintain all patient and billing records necessary for the director's authorized auditors to audit the provision of services. A provider shall keep all records necessary to disclose the extent of services furnished to claimants or their family members. These records shall be provided to department representatives upon request and at a minimum, these records shall include specific documentation of the level and type of service for which payment is sought. Records must be maintained for audit purposes for a minimum of five years from the date of the last treatment of the claimant.

The confidentiality concerning the safeguarding and release of claimant personal information is governed under RCW 7.68.140 and 7.68.145 of the Crime Victims Act. The department may be contacted for brochures and copies of the act.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-071, filed 11/13/92, effective 12/14/92.]

WAC 296-31-072 Review of mental health services providers. (1) The department may review providers' patient and billing related records to ensure claimants are receiving proper and necessary care and to ensure providers' compliance with the department's rules, fee schedules, and policies. A records review may be the basis for corrective action against the provider.

(2) The department may review records before, during, or after delivery of services. Records reviews may be conducted for cause or at random and may include the utilization of statistical sampling methodologies and projections based upon sample findings. Records reviews may be conducted at or away from the provider's places of business, at the department's discretion.

(3) The department will give ten working days written notification to any provider, except as authorized in WAC 296-18A-460, that the provider's patient and billing related records will be reviewed by an auditor at the provider's place(s) of business to determine compliance with mental health rules and standards.

(4) The provider shall provide, in lieu of originals, legible copies of providers' records if requested by the department. Providers shall furnish copies of the requested records within thirty calendar days of receipt of the request.

(5) The department will not remove original records from provider's premises.

(6) For information regarding the formal appeals process, refer to chapter 51.52 RCW.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-072, filed 11/13/92, effective 12/14/92.]

WAC 296-31-073 Utilization management. The department, as a trustee of funds appropriated by legislature, has a duty to supervise the provision of proper and necessary mental health care that is delivered promptly, efficiently, and economically. Toward this end, the department uses utilization management programs. These programs are designed to monitor and control the proper and necessary use and cost of services.

These programs include, but are not limited to, managed care contracting, prior authorization for services, and alternative reimbursement systems.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-073, filed 11/13/92, effective 12/14/92.]

WAC 296-31-075 Excess recoveries. In cases where a recovery has been made resulting in an excess recovery subject to offset from the future benefits or compensation due, the department is not liable for payment for services rendered by providers. The claimant is responsible for payment at department fee schedule rates. The claimant should be treated and the department billed in accordance with these mental health treatment rules and instructions, and in accordance with the rules and instructions contained in chapters 296-20 through 296-23A WAC. When bills are processed against the amount of the excess recovery, the department will notify the provider. The department will resume financial responsibility to or on behalf of the claimant when the amount of such excess has been reduced to zero.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-075, filed 11/13/92, effective 12/14/92.]

WAC 296-31-080 Billing procedures. (1) All services rendered must be in accordance with these mental health treatment rules. The department may reject bills for services rendered in violation of these rules. The claimant may not be billed for services rendered in violation of these

rules. However, claimants may be billed if they fail to keep or miss a properly scheduled appointment.

(a) Bills must be itemized on department forms or other forms which have been approved by the department. Physicians, advanced registered nurse practitioners, psychologists, and masters level mental health counselors may use the National Standard HCFA 1500 Health Insurance Claim Form or the department's statement for crime victim services. When billing for treatment of a family member other than the claimant, you must identify the family member by name and relationship to the claimant. Hospitals use the UB-92 billing form for institution services and the National Standard HCFA 1500 Health Insurance Claim Form for professional services.

(b) Bills must specify the date and type of service, the appropriate procedure code, the condition treated, and the charges for each service.

(c) Every bill submitted to the department must be completed to include the following:

(i) Claimant's name and address;

(ii) Claimant's claim number;

(iii) Date of injury;

(iv) Referring provider's name;

(v) Dates of service;

(vi) Place of service;

(vii) Type of service;

(A) Psychiatrists and psychologists use type of service 3.

(B) Master level counselors use type of service M.

(C) Advanced registered nurse practitioners (ARNP) use type of service N.

(viii) Appropriate procedure code or hospital revenue code,

(ix) Description of service; if mental health patient is not the claimant, give name and relationship to the claimant;

(x) Charge;

(xi) Units of service;

(xii) Total bill charge;

(xiii) Provider of service;

(xiv) Group, clinic, center, or facility name;

(xv) Billing address;

(xvi) Federal tax information;

(A) Federal tax identification number; or

(B) Social Security number.

(xvii) Date of billing;

(xviii) Submission of supporting documentation required under (f) of this subsection;

(xix) Private or public insurance eligibility and amounts paid.

(d) Responsibility for the completeness and accuracy of the description of services and charges billed rests with the provider rendering the service, regardless of who actually completes the bill form.

(e) Providers are urged to bill on a monthly basis. Bills must be submitted within ninety days from the date of service to be considered for payment. If insurance or public agency collateral resources exist bills must be received within ninety days following payment or rejection by the resource. A copy of the payment or rejection must accompany the bill.

(f) The following supporting documentation must be maintained and submitted when billing for services, as may be appropriate:

(i) Intake evaluation;

(ii) Progress reports;

(iii) Consultation reports;

(iv) Special or diagnostic study reports;

(v) Independent assessment or closing exam reports;

(vi) For BR procedures - see WAC 296-31-090 for requirements;

(vii) Claimant public or private insurance information.

(g) The claim number must be placed in the upper right hand corner on each bill and on each page of reports and other correspondence.

(h) Rebills. If a provider does not receive payment or notification from the department within ninety days, services may be rebilled. Rebills must be submitted for services denied if a claim is closed or rejected and subsequently reopened or allowed. Rebills should be identical to the original bill: Same charges, codes, and billing date. The statement "rebill" must appear on the bill.

(i) Any inquiries regarding adjustment of charges must be submitted within ninety days from the date of payment to be considered.

(j) Any denied charge may be protested in writing to the department or appealed to the board of industrial insurance appeals.

(2) Allowance and payment for medication. The department will pay for medications or supplies dispensed for the treatment of conditions resulting from a crime victim injury and/or conditions which are retarding the recovery from the claimant's condition, for which the department has accepted temporary responsibility. Specific information governing allowance and payment for medication is contained in WAC 296-20-17001.

(3) Payment of out-of-state providers.

(a) Providers of mental health services in the bordering states of Oregon and Idaho shall bill and be paid according to Washington state rules.

(b) Providers of health services in other states and other countries shall be paid at rates which take into account:

(i) Payment levels allowed under the state of Washington crime victims compensation program rules;

(ii) Payment levels allowed under crime victims compensation or workers compensation programs in the state of the provider's place of business; and

(iii) The usual, customary, and reasonable charges in the state and city of the provider's place of business.

(c) In all cases these payment levels are the maximum allowed to providers of services to claimants. Should a provider's charge exceed the payment amount allowed under the state of Washington crime victim compensation program rules, the provider is prohibited from charging the claimant for the difference between the provider's charge and the allowable rate. Providers violating this provision are ineligible to treat claimants as provided by these mental health rules and are subject to other applicable penalties.

(d) Only those diagnostic and treatment services authorized under the state of Washington mental health rules may be allowed by the department. As determined by the department, the scope of practice of providers in bordering states may be recognized for payment purposes, except that

in all cases WAC 296-20-03002 (treatment not authorized) shall apply. Specifically, services permitted under crime victims compensation programs in the provider's place of business, but which are not allowed chapters 296-20, 296-30, and 296-31 WAC of the state of Washington, may not be reimbursed. When in doubt, the provider should verify coverage of a service with the department.

(e) Out-of-state hospitals will be paid according to WAC 296-30-081.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-31-080, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-080, filed 11/13/92, effective 12/14/92.]

WAC 296-31-090 Mental health fees. (1) Rules and billing procedures are presented in detail in the previous sections, some commonalities are repeated here for the convenience of mental health providers referring to the mental health fee section. Definitions and items unique to billing procedures and fees are also included.

Psychiatric care may be billed without time dimensions according to the procedure or service as are medical or surgical procedures. In billing psychotherapy procedures, time is only one aspect and may be expressed as is customary in the local area. For example, the usual appointment length of an individual psychotherapy procedure may be signified by the procedure code alone. The modifier '-52' may be used to signify a service that is reduced or less extensive than the usual procedure. The modifier '-22' may be used to indicate a more extensive service. For example procedure code 90801 may be billed with modifier '-22' if the evaluation and report writing take more than an hour to complete. Thus, psychotherapy procedures may be reported by the procedure code alone or by the procedure code with a modifier.

Facility charges are not payable when a provider elects to use hospital facilities or other outpatient facilities in lieu of maintaining a private practice office.

(2) Definitions.

By report - BR (by report) in the value column indicates that the value of this service is too unusual, variable or new to be assigned a unit value. The report shall provide an adequate definition or description of the services or procedures that explain why the services or procedures are too unusual, variable, or complex to be assigned a relative value unit, using any of the following as indicated:

(a) Diagnosis - ICD9 - DSM III.

(b) Whenever possible, list the nearest similar procedure by number according to this schedule.

The department may adjust BR procedures when such action is indicated.

Maximum fees - The maximum allowable fee for a procedure is the fee contained in the publication entitled *Crime Victims Compensation Mental Health Treatment Rules and Fees*. Prior to the establishment or amendment of the fee schedules, the department will give at least thirty calendar days notice by mail to interested persons who have made timely request for advance notice of the establishment or amendment of the fee schedules. To request advance notice of the establishment or amendment of the fee schedules, interested persons must contact the department at the following address:

Department of Labor and Industries
Crime Victims Compensation Section
P.O. Box 44520
Olympia, WA 98504-4520

No fee is payable by the department for missed appointments unless the appointment is for an examination arranged by the department. Claimants may be billed directly for missed or "no show" appointments.

Mental health modifiers - Listed values for most procedures may be modified under certain circumstances. When applicable, the modifying circumstance should be identified by the addition of the appropriate "modifier code number" after the usual procedure number. The value should be listed as a single modified total for the procedure.

Report required - The values for procedures for which a report is required include the report fee. **Do not bill separately for these reports.**

Unusual or unlisted procedure - Value of unlisted services or procedures should be substantiated "by report" (BR). Refer to the definition of **By report** for reporting requirements.

(3) Advanced registered nurse practitioners are reimbursed at ninety percent of values listed for psychologists or psychiatrists.

(4) Mental health services. The following graduated listing of services is an attempt to reflect the relative values of the time and skills required at the various service levels. The listed values apply only when performed by mental health providers registered with and authorized by the department to provide services to claimants through this program.

Modifier	Unit Value
-22 UNUSUAL SERVICES: When the services provided are greater than those usually required for the listed procedure, identify by adding this modifier to the usual procedure number. Requires written justification	BR
-52 REDUCED VALUES: Under certain circumstances, the listed value for a procedure is reduced or eliminated because of ground rules, common practice, or at the mental health provider's election. Under these or similar circumstances, the services provided can be identified by their usual procedure numbers and the use of a reduced value indicated by adding this modifier to the procedure number. (Use of this modifier provides a means of reporting services at a reduced charge without disturbing usual relative values.)	BR
-8N CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PROVIDER: When the claimant's condition requires the additional services of more than one provider, each provider may identify his or her services by adding this modifier to the service procedure code	BR

-96 SPECIAL AGREEMENT WITH CRIME VICTIMS COMPENSATION PROGRAM: This modifier is to be used by providers who have a special agreement with the crime victims compensation program for certain designated procedures. Any request for special agreement should be directed to:

Crime Victims Compensation Program
Special Claim Unit
PO Box 44523
Olympia WA 98504-4523

THE VALUES FOR PROCEDURES FOR WHICH A REPORT IS REQUIRED INCLUDE THE REPORT FEE. DO NOT BILL SEPARATELY FOR THESE REPORTS.

[Statutory Authority: Chapter 7.68 RCW. 94-02-015, § 296-31-090, filed 12/23/93, effective 1/24/94. Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-090, filed 11/13/92, effective 12/14/92.]

WAC 296-31-100 Severability. If any provision of these rules, or their application to any person or circumstance is held invalid, the remainder of the rules, or the application of the provision to other persons or circumstances is not affected.

[Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-100, filed 11/13/92, effective 12/14/92.]

Chapter 296-32 WAC
SAFETY STANDARDS FOR TELECOMMUNICATIONS

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-32-001 Foreword—Effective date. [Foreword, effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-010 Statements of fact—Construction of rules. [Rules (part), effective 4/1/66; Regulations 1.3, 1.4, 1.7, 1.8, 1.9, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-011 Procedure for settling controversy. [Rules (part), effective 4/1/66; Regulation 1.6, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-020 Causes of accident. [Rules (part), effective 4/1/66; Regulation 1.10, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-030 Causes of accident—Safety. [Rules (part), effective 4/1/66; Regulation 1.11, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-040 Definitions. [Definitions, effective 4/1/66; Regulations 1.12—1.25, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-050 Employer's responsibility. [Rules (part), effective 4/1/66; Regulations 2.1—2.11, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-060 Foreman's responsibility. [Rules (part), effective 4/1/66; Regulations 2.12—2.23, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-070 Employee's responsibility. [Rules (part), effective 4/1/66; Regulations 2.24—2.31, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-080 First-aid. [Rules (part), effective 4/1/66; Regulations 3.1—3.4, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-090 Industrial hygiene. [Rules (part), effective 4/1/66; Regulations 3.5—3.7, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-094 Overhead work. [Rules (part), effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-098 Molten solder handling. [Rules (part), effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-100 Aerial plant. [§ VI, Rules 6.010—6.100, effective 4/1/66; Regulations 4.1—4.15, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-110 Underground plant. [§ VII, Rules 7.010—7.120, effective 4/1/66; Regulations 5.1—5.12, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-120 Central office plant. [§ IV, Rules 4.010—4.060, effective 4/1/66; Regulations 6.1—6.7, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-130 Tools and protective devices. [§ II, Rules 2.010—2.460, effective 4/1/66; Regulations 7.1—7.50, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-140 Motor vehicles, work equipment and transportation. [§ III, Rules 3.010—3.160, effective 4/1/66; Regulations 8.1—8.14, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-150 Power exposures. [§ VIII, Rules 8.010—8.200, effective 4/1/66; Regulations 9.1—9.20, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-160 General safety requirements. [§ I, Rules 1.010—1.120, effective 4/1/66; Rules 10.2—10.7, 10.10, 10.11, 10.14, 10.15, 10.16, 10.17, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-170 Manlift equipment. [§ V, Rules 5.010—5.090, effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-180 Electronic communication equipment. [§ IX, Rules 9.010—9.120, effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

WAC 296-32-200 Scope and application. (1) This chapter sets forth safety and health standards that apply to the work conditions, practices, means, methods, operations, installations and processes performed at telecommunications centers and at telecommunications field installations, which are located outdoors or in building spaces used for such field installations. "Center" work includes the installation, operation, maintenance, rearrangement, and removal of communications equipment and other associated equipment in telecommunications switching centers. "Field" work includes the installation, operation, maintenance, rearrangement, and removal of conductors and other equipment used for signal or communication service, and of their supporting or containing structures, overhead or underground, on public or private rights of way, including buildings or other structures.

(2) These standards do not apply:

(a) To construction work, as defined in chapter 296-155 WAC, nor

(b) To installations under the exclusive control of electric utilities used for the purpose of communications or metering, or for generation, control, transformation, transmission, and distribution of electric energy, which are located in buildings used exclusively by the electric utilities for such purposes, or located outdoors on property owned or leased by the electric utilities or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(3) Operations or conditions not specifically covered by this chapter are subject to all the applicable standards contained in chapter 296-24 WAC, general safety and health standards. Operations which involve construction work, as defined in chapter 296-155 WAC are subject to all the applicable standards contained in chapter 296-155 WAC, safety standards for construction work.

(4) This standard shall augment the Washington state general safety and health standards, general occupational health standards, electrical workers safety rules, and any other standards which are applicable to all industries governed by chapter 80, Laws of 1973, Washington Industrial Safety and Health Act. In the event of any conflict between any portion of this chapter and any portion of any of the general application standards, the provisions of this chapter 296-32 WAC, shall apply.

(5) In exceptional cases where compliance with specific provisions of this chapter can only be accomplished to the serious detriment and disadvantage of an operation, variance from the requirement may be permitted by the director of the department of labor and industries after receipt of application for variance which meets the requirements of WAC 296-24-010, general safety and health standards.

[Order 76-38, § 296-32-200, filed 12/30/76; Order 75-41, § 296-32-200, filed 12/19/75.]

WAC 296-32-210 Definitions. (1) The terms used in these standards shall be interpreted in the most commonly accepted sense consistent with the communications industry. The words "shall" and "must," are used to indicate the provisions which are mandatory.

(2) "Aerial lifts." Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to jobsites above ground:

(a) Extensible boom platforms,

(b) Aerial ladders,

(c) Articulating boom platforms,

(d) Vertical towers,

(e) A combination of any of the above defined in ANSI A92.2-1969. These devices are made of metal, wood, fiberglass, reinforced plastic (FRP), or other material; are powered or manually operated and are deemed to be aerial lifts whether or not they are capable of rotating above a substantially vertical axis.

(3) "Aerial splicing platform." This consists of a platform, approximately 3 feet x 4 feet, used to perform aerial cable work. It is furnished with fiber or synthetic ropes for supporting the platform from aerial strand, detachable guy ropes for anchoring it, and a device for raising and lowering it with a handline.

(4) "Aerial tent." A small tent usually constructed of vinyl coated canvas which is usually supported by light metal or plastic tubing. It is designed to protect employees in inclement weather while working on ladders, aerial splicing platforms, or aerial devices.

(5) "Alive or live (energized)." Electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of the earth in the vicinity. The term "live" is sometimes used in the place of the term "current-carrying," where the intent is clear, to avoid repetition of the longer term.

(6) "Barricade." A physical obstruction such as tapes, cones, or "A" frame type wood and/or metal structure intended to warn and limit access to a work area.

(7) "Barrier." A physical obstruction which is intended to prevent contact with energized lines or equipment, or to prevent unauthorized access to work area.

(8) "Bond." An electrical connection from one conductive element to another for the purpose of minimizing potential differences or providing suitable conductivity for fault current or for mitigation of leakage current and electrolytic action.

(9) "Cable." A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors insulated from one another (multiple-conductor cable).

(10) "Cable sheath." A protective covering applied to cables.

Note: A cable sheath may consist of multiple layers of which one or more is conductive.

(11) "Circuit." A conductor or system of conductors through which an electric current is intended to flow.

(12) "Clearance."

(a) The certification by the proper authority that a specified line or piece of equipment is de-energized; that the proper precautionary measures have been taken and that the line or equipment is being turned over to the workers.

(b) Separation or protection by the use of protective devices to prevent accidental contact by persons or objects on approach to a point of danger.

(13) "Climbing space." The vertical space reserved along the side of poles or structures to permit ready access for lineworkers to equipment and conductors located on poles or structures.

(14) "Communication lines." The conductors and their supporting or containing structures for telephone, telegraph, railroad signal, data, clock, fire, police-alarm, community television antenna and other systems which are used for public or private signal or communication service, and which operate at potentials not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When communications lines operate at less than 150 volts to ground, no limit is placed on the capacity of the system. Specifically designed communications cables may include communication circuits not complying with the preceding limitations, where such circuits are also used incidentally to supply power to communication equipment.

(15) "Communication plant." The conductors and their associated equipment required to provide public or private signals or communicative service.

(16) "Competent or qualified person." A person who is familiar with the construction of, or operation of, such lines and/or equipment that concerns their position and who is fully aware of the hazards connected therewith OR one who has passed a journeyman's examination for the particular branch of the trades with which they may be connected. In case of dispute, competency shall be established by a committee appointed by the director or assistant director of the department of labor and industries consisting of representatives of all interested parties.

(17) "Conductor." A material, usually in the form of a wire, cable, or bus bar, suitable for carrying an electric current.

(18) "Effectively grounded." Intentionally connected to earth through a ground connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent the build-up of voltages which may result in undue hazard to connected equipment or to persons.

(19) "Emergency." When an unusual condition exists that endangers life and/or property.

(20) "Energized." Electrically connected to a source of potential difference or electrically charged so as to have a potential different from that of the earth or different from that of adjacent conductors or equipment. For the purpose of these rules, potential differences less than 100 volts shall not apply. This definition does not include communication lines of less than 300 volts.

(21) "Equipment." A general term which includes materials, fittings, devices, appliances, fixtures, apparatus, and similar items used as part of, or in connection with, a supply or communications installation.

(22) "Crewleader or person-in-charge." That person directly in charge of workers doing the work regardless of title.

(23) "Ground (reference)." That conductive body usually earth, to which an electric potential is referenced.

(24) "Ground (as a noun)." A conductive connection, whether intentional or accidental, by which an electric circuit or equipment is connected to reference ground.

(25) "Ground (as a verb)." The connecting or establishment of a connection, whether by intention or accident, of an electric circuit or equipment to reference ground.

(26) "Grounding." The act of placing shorts and grounds on conductors and equipment for the purpose of protecting workers from dangerous voltages while working on such lines or equipment.

(27) "Ground tent." A small tent usually constructed of vinyl coated canvas supported by a metal or plastic frame. Its purpose is to protect employees from inclement weather while working at buried cable pedestal sites or similar locations.

(28) "Grounded conductor." A system or circuit conductor which is intentionally grounded.

(29) "Grounded systems." A system of conductors in which at least one conductor or point (usually the middle wire, or the neutral point of transformer or generator windings) is intentionally grounded, either solidly or through a current-limiting device (not a current-interrupting device).

(30) "Grounding electrode conductor (grounding conductor)." A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode.

(31) "Guard or guarded." Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, platforms, or warning signs or devices to remove the possibility of dangerous contact on approach by other persons or objects to a point of danger.

(32) "Insulated." Separated from other conducting surfaces by a dielectric substance (including air space) offering a high resistance to the passage of current.

Note: When any object is said to be insulated, it is understood to be insulated in suitable manner for the conditions to which it is subjected. Otherwise, it is, within the purpose of these standards, uninsulated. Insulating coverings of conductors is one means of making the conductor insulated.

(33) "Insulation (as applied to cable)." That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

(34) "Joint use." The sharing of a common facility, such as a manhole, trench or pole, by two or more different kinds of utilities, (e.g., power and telecommunications).

(35) "Ladder platform." A device designed to facilitate working aloft from an extension ladder. A typical device consists of a platform (approximately 9" x 18") hinged to a welded pipe frame. The rear edge of the platform and the bottom crossmember of the frame are equipped with latches to lock the platform to ladder rungs.

(36) "Ladder seat." A removable seat used to facilitate work at an elevated position on rolling ladders in telecommunication centers.

(37) "Manhole." A subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating, and maintaining submersible equipment and/or cable.

(38) "Manhole platform." A platform consisting of separate planks which are laid across steel platform supports. The ends of the supports are engaged in the manhole cable racks.

(39) "Manlift equipment." Such types of portable truck-mounted equipment as mechanical, electric or hydraulic ladders and boom-mounted buckets or cages.

(40) "Microwave transmission." The act of communicating or signaling utilizing a frequency between 1 GH_z (gigahertz) and 300 GH_z inclusively.

(41) "Nominal voltage." The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The actual voltage may vary above or below this value.

(42) "Pole balcony or seat." A balcony or seat used as a support for workers at pole-mounted equipment or terminal boxes. A typical device consists of a bolted assembly of steel details and a wooden platform. Steel braces run from the pole to the underside of the balcony. A guard rail (approximately 30" high) may be provided.

(43) "Pole platform." A platform intended for use by a worker in splicing and maintenance operations in an elevated position adjacent to a pole. It consists of a platform equipped at one end with a hinged chain binder for securing the platform to a pole. A brace from the pole to the underside of the platform is also provided.

(44) "Protection from hazardous voltage." The isolation from or de-energizing of equipment to prevent accidental contact by persons or objects on approach to point of danger.

(45) "Protective devices." Those devices such as rubber gloves, rubber blankets, line hose, rubber hoods or other insulating devices, which are specially designed for the protection of workers.

(46) "Public highway." Every way, land, road, street, boulevard, and every way or place in the state open as matter of right to public vehicular travel, both inside and outside the limit of cities and towns.

(47) "Qualified employee." Any worker who by reason of their training and experience has demonstrated an ability to safely perform their duties.

(48) "Qualified line-clearance tree trimmer." A tree worker who through related training and on-the-job experience is familiar with the special techniques and hazards involved in line clearance.

(49) "Qualified line-clearance tree-trimmer trainee." Any worker regularly assigned to a line-clearance tree-trimming crew and undergoing on-the-job training who, in the course of such training, has demonstrated their ability to perform duties safely at their level of training.

(50) "Sheath." As applied to sharp tools that effectively covers the tool.

(51) "System operator/owner." The person or organization that operates or controls the electrical conductors involved.

(52) "Telecommunications center." An installation of communication equipment under the exclusive control of an organization providing telecommunications service, that is located outdoors or in a vault, chamber, or a building space used primarily for such installations.

Note: Telecommunication centers are facilities established, equipped and arranged in accordance with engineered plans for the purpose of providing telecommunications service. They may be located on premises owned or leased by the organization providing telecommunication service, or on the premises owned or leased by others. This definition includes switch rooms (whether electromechanical, electronic, or computer controlled), terminal rooms, power rooms, repeater rooms, transmitter and receiver rooms, switchboard operating rooms, cable vaults, and miscellaneous communications equipment rooms. Simulation rooms of telecommunication centers for training or developmental purposes are also included.

(53) "Telecommunications derricks." Rotating or nonrotating derrick structures permanently mounted on vehicles for the purpose of lifting, lowering, or positioning hardware and materials used in telecommunications work.

(54) "Telecommunication line truck." A truck used to transport workers, tools, and material, and to serve as a traveling workshop for telecommunication installation and maintenance work. It is sometimes equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material or workers.

(55) "Telecommunication service." The furnishing of a capability to signal or communicate at a distance by means such as telephone, telegraph, police and fire-alarm, community antenna television, or similar system, using wire, conventional cable, coaxial cable, wave guides, microwave transmission, or other similar means.

(56) "Unvented vault." An enclosed vault in which the only openings are access openings.

(57) "Vault." An enclosure above or below ground which personnel may enter, and which is used for the purpose of installing, operating, and/or maintaining equipment and/or cable which need not be of submersible design.

(58) "Vented vault." An enclosure as described in subsection (57) of this section, with provision for air changes using exhaust flue stack(s) and low level air intake(s), operating on differentials of pressure and temperature providing for air flow.

(59) "Voltage communications." Voltage used for electronic communications equipment to which workers or protective equipment may be subjected.

(a) *High* means over 600 volts to ground—RMS AC or DC or over 1,000 volts RMS across bare parts.

(b) *Medium high* means 151 to 600 volts to ground—RMS AC or DC or 301 to 1,000 volts RMS AC across any bare parts.

(60) "Voltage electric supply." The maximum effective line voltage to which the workers or protective equipment may be subjected.

(a) *Low* includes voltages from 100 to 750 volts.

(b) *High* means those voltages in excess of 750 volts.

(61) "Voltage of an effectively grounded circuit." The voltage between any conductor and ground unless otherwise indicated.

(62) "Voltage of a circuit not effectively grounded." The voltage between any two conductors. If one circuit is directly connected to and supplied from another circuit of higher voltage (as in the case of an autotransformer), both are considered as of the higher voltage, unless the circuit of lower voltage is effectively grounded, in which case its voltage is not determined by the circuit of higher voltage. Direct connection implies electric connection as distinguished from connection merely through electromagnetic or electrostatic induction.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-210, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-210, filed 12/30/76; Order 75-41, § 296-32-210, filed 12/19/75.]

WAC 296-32-215 Safe place standard. (1) No employer shall require any employee to go or be in any employment or place of employment which is not safe.

(2) No employer shall fail or neglect:

(a) Provide safe access to the work site.

(b) To provide and use safety devices and safeguards.

(c) To adopt and use methods and processes to render the employment and place of employment safe.

(d) To do every other thing reasonably necessary to protect the life and safety of employees.

[Order 76-38, § 296-32-215, filed 12/30/76.]

WAC 296-32-220 General. (1) Buildings containing telecommunications centers.

(a) Illumination. Lighting in telecommunication centers shall be provided in an amount such that continuing work operations, routine observations, and the passage of employees can be carried out in a safe and healthful manner.

(b) Specific tasks in centers, such as splicing cable and the maintenance and repair of equipment frame lineups, the employer shall install permanent lighting or portable supplemental lighting to attain a higher level of illumination.

(c) Refer to WAC 296-62-09003 (general occupational health standards) which shall apply as minimum standards of illumination for industrial interiors.

(d) Illumination of field work. Whenever natural light is insufficient to illuminate the worksite, artificial illumination shall be provided to enable the employee to perform the work safely.

(2) Working surfaces.

(a) Working surfaces shall be in conformance with the latest edition of the general safety and health standard WAC 296-24-735 through 296-24-76523.

(b) Guard rails and toe boards may be omitted on distribution frame mezzanine platforms to permit access to equipment. This exemption applies only on the side or sides of the platform facing the frames and only on those portions of the platform adjacent to equipped frames.

(3) Working spaces.

(a) Space shall be provided for access to all medium high and high voltage equipment.

(b) Every structure, new or old, designed for human occupancy shall be provided with exits to permit the prompt escape of occupants in case of fire or other emergency. The means of egress shall be a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consist of three separate and distinct parts; the way of exit access, the exit and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts and yards.

(c) "Maintenance aisles," or "wiring aisles," between equipment frame lineups are working spaces and are not a means of egress for purposes of WAC 296-24-550.

(4) Special doors.

(a) When blastproof or power actuated doors are installed in specially designed hardsite security buildings and spaces, they shall be designed and installed so that they can be used as a means of egress in emergencies.

(b) When high voltage apparatus is isolated in a supplementary enclosure, interlocks shall be provided on all access doors. Warning signs shall be provided, which are visible both when the guard or cover is in place or removed.

(5) Equipment, machinery and machine guarding.

(a) When power plant machinery in telecommunications centers is operated with commutators and couplings uncovered, the adjacent housing shall be clearly marked to alert personnel to the rotating machinery.

(b) All power switches on power panels shall be in an open position when they are not controlling an operating circuit. Before opening any power circuit, the load shall be reduced. "Men working" signs, or similar wording shall be placed on switches associated with motors or generators under repair.

(c) When working on the brushes of a machine in operation, employees shall use care not to break a circuit. When it is necessary to remove a brush from the holder, the machine shall be shut down.

(d) Only fuse pullers specifically designed for that purpose shall be used when replacing cartridge type fuses.

(6) Battery handling.

(a) Eye protection devices which provide side as well as frontal eye protection for employees shall be provided when measuring storage battery specific gravity or handling electrolyte, and the employer shall ensure that such devices are used by the employees.

(b) The employer shall also ensure that acid resistant gloves and aprons shall be worn for protection against spattering.

(c) Facilities for quick drenching or flushing of the eyes and body shall be provided unless the storage batteries are of the enclosed type and equipped with explosion proof vents, in which case sealed water rinse or neutralizing packs may be substituted for the quick drenching or flushing facilities.

(d) Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.

(e) Electrolyte (acid or base, and distilled water) for battery cells shall be mixed in a well ventilated room. Acid or base shall be poured gradually, while stirring, into the water. Water shall never be poured into concentrated (greater than 75 percent) acid solutions. Electrolyte shall never be placed in metal containers nor stirred with metal objects.

(f) When taking specific gravity readings, the open end of the hydrometer shall be covered with an acid resistant material while moving it from cell to cell to avoid splashing or throwing the electrolyte.

(g) Ventilation, shall be provided to ensure diffusion of the gasses from the battery to prevent the accumulation of an explosive type mixture.

(h) Racks and trays shall be substantial and treated to be resistant to the electrolyte.

(i) Floors shall be of acid resistant construction or be protected from acid accumulation.

(7) Hazardous materials.

(a) Highway mobile vehicles and trailers stored in garages in accordance with WAC 296-24-47513 (4)(b) may be equipped to carry more than one LP-gas container, but the total capacity of LP-gas containers per work vehicle stored in garages shall not exceed 100 pounds of LP-gas.

(b) All container valves shall be closed when not in use.

(8) Compressed gas.

(a) When using or transporting nitrogen cylinders, special compartments, racks, or blocking shall be provided to prevent cylinder movement.

(b) Regulators shall be removed or guarded before a cylinder is transported.

(9) Support structures.

(a) No employee, or any material or equipment, shall be supported or permitted to be supported on any portion of a pole structure, platform, ladder, walkway or other elevated structure or aerial device unless the employer ensures that the support structure is first inspected by a competent person and it is determined to be strong, in good working condition and properly secured in place.

(b) Workers shall not throw anything from pole to ground, from pole to pole or from ground to pole.

(10) Power exposures.

(a) The employer shall ensure that no employee approaches or takes any conductive object closer to any

electrically energized overhead power lines and parts than prescribed in Table 1 unless:

(i) The employee is insulated or guarded from the energized parts (insulating gloves rated for the voltage involved shall be considered adequate insulation), or

(ii) The energized parts are insulated or guarded from the employee and any other conductive object at a different potential, or

(iii) The power conductors and equipment are deenergized and grounded.

(b) While handling communication wires, metal sheaths, or communication equipment, contact shall be avoided with street lamp brackets, trolley span wires, power guys, transformer cases and any other power equipment that may be energized. The safest possible working position shall be assumed before starting work.

(c) Communication employees shall never work in the pole space on jointly used poles between normal primary and secondary attachments.

(d) Where a hazard of a power contact exists, due to use of long handled tools, proper rubber equipment shall be used.

TABLE 1

APPROACH DISTANCES TO EXPOSED ENERGIZED OVERHEAD POWER LINES AND PARTS

Voltage Range (phase to phase, RMS)	Approach Distance (inches)
300 V and less	(1)
Over 300 V, not over 750 V	12
Over 750 V not over 2 kV	18
Over 2 kV, not over 15 kV	24
Over 15 kV, not over 37 kV	36
Over 37 kV, not over 87.5 kV	42
Over 87.5 kV, not over 121 kV	48
Over 121 kV, not over 140 kV	54

(1)Avoid contact.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-220, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-220, filed 12/30/76; Order 75-41, § 296-32-220, filed 12/19/75.]

WAC 296-32-230 Training. (1) Employers shall provide training in the various precautions and safe practices described in this section and shall insure that employees do not engage in the activities to which this chapter applies until such employees have received proper training in the various precautions and safe practices required by this section. However, where the employer can demonstrate that an employee is already trained in the precautions and safe practices required by this section prior to their employment, training need not be provided to that employee in accordance with this section.

(2) Where training is required, it shall consist of on-the-job training or classroom-type training or a combination of both.

(3) The training program shall include a list of the subject courses and the types of personnel required to receive such instruction. A written description of the training program and a record of employees who have received such training shall be maintained for the duration of the employee's employment and shall be made available upon request to the director of the department of labor and industries, or his/her authorized representative.

(4) Such training shall, where appropriate, include the following subjects:

(a) Recognition and avoidance of dangers relating to encounters with harmful substances, and animal, insect, or plant life.

(b) Procedures to be followed in emergency situations, and

(c) First aid training, including instruction in artificial respiration.

(5) It shall be the responsibility of the employer to hold monthly safety meetings at practical points throughout the operation and insist upon employees attending said meetings. Minutes shall be kept of each safety meeting and retained for a period of one year.

(6) It shall be the responsibility of management to develop and maintain a hazard communication program as required by chapter 296-62 WAC, Part C which will provide information to all employees relative to hazardous chemicals or substances to which they are exposed, or may become exposed, in the course of their employment.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-230, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-32-230, filed 5/15/89, effective 6/30/89; Order 76-38, § 296-32-230, filed 12/30/76; Order 75-41, § 296-32-230, filed 12/19/75.]

WAC 296-32-240 Employee protection in public work areas. (1)(a) Before work is begun in the vicinity of vehicular or pedestrian traffic which may endanger employees, warning signs and/or flags or other traffic control devices shall be placed conspicuously to alert and channel approaching traffic. Where further protection is needed, barriers shall be utilized.

(b) At night, warning lights shall be prominently displayed, and excavated areas shall be enclosed with protective barricades.

(2) When work exposes energized or moving parts that are normally protected, danger signs shall be displayed and barricades erected to warn other personnel in the area.

(3) The employer shall insure that an employee finding any crossed or fallen wires which create or may create a hazardous situation at the work area:

(a) Remains on guard or adopts other adequate means to warn other employees of the danger, and

(b) Has the proper authority notified at the earliest practical moment.

[Order 76-38, § 296-32-240, filed 12/30/76; Order 75-41, § 296-32-240, filed 12/19/75.]

WAC 296-32-250 Tools and personal protective equipment—General. (1) Personal protective equipment, protective devices and special tools needed for the work of employees shall be provided and the employer shall ensure that they are used by employees.

(a) Before each day's use the employer shall ensure that these personal protective devices, tools, and equipment are carefully inspected by a competent person to ascertain that they are in good condition.

(b) Tools found to be defective shall be taken out of service.

(2) Head protection. Class B protective helmets shall be provided whenever there is exposure to overhead hazards and/or possible high voltage electrical contact.

(a) Employees working in areas where there is a possible danger of head injury from impact, falling or flying objects, shall be protected by protective helmets.

(b) Criteria for protective helmets.

(i) Protective helmets purchased after February 20, 1995, shall comply with ANSI Z89.1-1986, "American National Standard for Personnel Protection—Protective Headwear for Industrial Workers—Requirements," which is incorporated by reference, or shall be demonstrated to be equally effective.

(ii) Protective helmets purchased before February 20, 1995, shall comply with the ANSI standard "American National Standard Safety Requirements for Industrial Head Protection," ANSI Z89.1-1969, or shall be demonstrated by the employer to be equally effective.

(3) Eye protection. Protective eye and face equipment shall be required where there is a possibility of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors.

Note: See chapter 296-24 WAC, Part A-2, for additional personal protective equipment requirements.

(4) Tent heaters, torches and open flame. Open flames shall not be used within ground tents or on platforms within aerial tents unless:

(a) The tent covers are constructed of fire resistant materials, and

(b) Ventilation is provided to maintain safe oxygen levels and avoid harmful buildup of combustion products and combustible gases.

(5) Portable power equipment.

(a) All portable power equipment used in the telecommunications industry shall be grounded.

(b) Nominal 120V, or less, portable generators used for providing power at work locations do not require grounding if the output circuit is completely isolated from the frame of the unit.

(c) Grounding shall be omitted when using soldering irons, guns or wire-wrap tools on telecommunication circuits.

(6) Vehicle-mounted utility generators. Vehicle-mounted utility generators used for providing nominal 240V AC or less for powering portable tools and equipment need not be grounded to earth if all of the following conditions are met:

(a) One side of the voltage source is solidly strapped to the metallic structure of the vehicle;

(b) Grounding-type outlets are used, with a "grounding" conductor between the outlet grounding terminal and the side of the voltage source that is strapped to the vehicle;

(c) All metallic encased tools and equipment that are powered from this system are equipped with three-wire cords and grounding-type attachment plugs, except as designated in subsection (7) of this section.

(7) Portable lights, tools and appliances. When operated from commercial power such metal parts of these devices shall be grounded, unless these tools or appliances are protected by a system of double insulation, or its equivalent. Where such a system is employed, the equipment shall be distinctively marked to indicate double insulation.

(8) Lead work. When operated from commercial power the metal housing of electric solder pots shall be grounded. Electric solder pots may be used with the power equipment described in this subsection, without a grounding conductor.

The employer shall ensure that wiping gloves or cloths and eye protection are used in lead wiping operations. A drip pan to catch hot lead drippings shall also be provided and used.

(9) Fire extinguishers.

(a) Fire extinguishers shall be provided for the protection of both the building structure and the occupancy hazards contained therein.

(b) Employees shall be familiar with the location and operation of fire extinguishers.

(c) Any fire extinguishers showing defects shall be removed from service.

(d) Fire extinguishers shall be thoroughly examined and/or recharged or repaired to insure operability and safety once every year.

(e) Each fire extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initials or signature of the person performing this service.

[Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-32-250, filed 9/30/94, effective 11/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-32-250, filed 6/11/82; Order 76-38, § 296-32-250, filed 12/30/76; Order 75-41, § 296-32-250, filed 12/19/75.]

WAC 296-32-260 Rubber insulating equipment. (1) Rubber insulating equipment designed for the voltage levels to be encountered shall be provided and the employer shall ensure that they are used by employees as required by this section. This equipment shall meet the electrical and physical requirements contained in ANSI J6.6-1971 "Standard Specifications for Rubber Insulating Gloves," and ANSI J6.4-1971 "Standard Specifications for Rubber Insulating Blankets," with the exception that the maximum proof test current for a 14-inch Class I glove shall be no more than 14mA, and with the further exception that existing 14-inch Class I rubber gloves that meet a maximum proof test current of 14 mA and a minimum breakdown voltage of 10,000 volts (RMS) acquired prior to January 1, 1976, may be used as long as these gloves comply with the retest requirements of subsection (2) of this section.

(2) The employer is responsible for periodic retesting of all insulating gloves, blankets, and other rubber insulating equipment. This retesting shall be electrical, visual and mechanical. The following maximum retesting intervals shall apply:

Gloves, Blankets, and Other Insulating Equipment	Natural Rubber (Months)	Synthetic Rubber (Months)
New	12	18
Reissued	9	15

(3) Protector for gloves. Approved protectors must be worn at all times over rubber gloves. Inner liners may be worn if desired.

(4) Protective equipment fabricated of material other than rubber shall provide electrical and mechanical protection at least equal to that of the rubber equipment.

(5)(a) Gloves and blankets shall be marked to indicate compliance with the retest schedule and shall be marked with the date the next test date is due.

(b) Any rubber gloves found to be defective shall be removed from service and marked as being defective.

(6) Insulating gloves and blankets shall be stored away from direct sunlight, steampipes, radiators and other sources of excessive heat.

(7) Gloves and blankets shall not be folded while in storage. A separate container shall be provided for rubber blankets and blankets shall be wiped clean and rolled before placing in container.

(8) Inspect rubber goods. Before using a pair of rubber gloves or rubber blankets, workers shall personally inspect each glove for defects and give an air test, and the blanket shall be visually inspected for cracks or cuts before using.

Note: Grasp the cuff at opposite sides and twirl the gloves so as to roll it up the cuff and produce air pressure within the glove, then look for leaks and thin places in the rubber.

(9) Patching rubber goods is prohibited; rubber protective equipment shall not be vulcanized or patched.

(10) Rubber gloves for workers. (a) A pair of rubber gloves, specifically designed for the protection of workers, shall be assigned each worker when required to work on or be exposed to energized parts.

(b) Rubber gloves when not in use shall be carried in a bag provided and designed for that purpose.

[Order 76-38, § 296-32-260, filed 12/30/76; Order 75-41, § 296-32-260, filed 12/19/75.]

WAC 296-32-270 Personal climbing equipment. (1) General. Safety belts and straps shall be provided and the employer shall ensure their use when work is performed at positions more than 4 feet above ground, on poles, and on towers, except as provided in WAC 296-32-340 (7)(8) of this chapter. No safety belts, safety straps or lanyards acquired after January 1, 1976, may be used unless they meet the tests set forth in chapter 296-45 WAC. The employer shall ensure that all safety belts and straps are inspected by a competent person prior to each day's use to determine that they are in safe working condition.

(2) Telecommunication lineman's body belts, safety straps and lanyards, general requirements. Hardware for lineman's body belts, safety straps and lanyards shall be drop forged or pressed steel and shall have a corrosion resistant finish tested to meet the requirements of the American Society for Testing and Materials B117-64 (50-hour test).

Exception: Lineman's body belts shall be at least four inches in width.

(3) Pole climbers.

(a) Pole climbers may not be used if the gaffs are less than 1-1/4 inches in length as measured on the underside of the gaff.

(b) The gaffs of pole climbers shall be covered with safety caps when not being used for their intended use.

(c) The employer shall ensure that pole climbers are inspected by a competent person for the following conditions: Fractured or cracked gaffs or leg irons, loose or dull gaffs, broken straps or buckles. If any of these conditions exist, the defect shall be corrected before the climbers are used.

(d) Pole climbers shall be inspected as required in this subsection before each day's use and a gaff cut-out test performed at least weekly when in use.

(e) Pole climbers shall not be worn when:

(i) Working in trees (specifically designed tree climbers shall be used for tree climbing),

(ii) Working on ladders,

(iii) Working in an aerial lift,

(iv) Driving a vehicle,

(v) Walking on rocky, hard, frozen, brushy or hilly terrain.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-270, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-270, filed 12/30/76; Order 75-41, § 296-32-270, filed 12/19/75.]

WAC 296-32-280 Ladders. (1) The employer shall ensure that no employee nor any material or equipment shall be supported or permitted to be supported on any portion of a ladder unless it is first determined, by inspections and checks conducted by a competent person that such ladder is free of defects, in good condition and secured in place.

(2) The spacing between steps or rungs permanently installed on poles and towers shall be no more than 18 inches (36 inches on any one side). This requirement also applies to fixed ladders on towers, when towers are so equipped. Spacing between steps shall be uniform above the initial unstepped section, except where working, standing, or access steps are required. Fixed ladder rungs and step rungs for poles and towers shall have a minimum diameter of 5/8 inch. Fixed ladder rungs shall have a minimum clear width of 12 inches. Steps for poles and towers shall have a minimum clear width of 4-1/2 inches. The spacing between detachable steps may not exceed 30 inches on any one side, and these steps shall be secured when in use.

(3) After October 31, 1975, portable wood ladders intended for general use shall not be painted but may be coated with a translucent nonconductive coating. Portable wood ladders shall not be longitudinally reinforced with metal.

(4) Portable wood ladders that are not being carried on vehicles and are not in active use shall be stored where they will not be exposed to the elements and where there is good ventilation.

(5) Rolling ladders.

(a) Rolling ladders used in telecommunication centers shall have a width between the side rails, inside to inside, of at least 12 inches.

(b) Except in working spaces that are not a means of egress, the ladders shall have a minimum inside width, between the side rails, of at least eight inches.

(6) Climbing ladders or stairways on scaffolds used for access and egress shall be affixed or built into the scaffold by proper design and engineering, and shall be so located

that their use will not disturb the stability of the scaffold. The rungs of the climbing device shall be equally spaced, but may not be less than 12 inches nominal nor more than 16 inches nominal apart. Horizontal end rungs used for platform support may also be utilized as a climbing device if such rungs meet the spacing requirement of this subsection, and if clearance between the rung and the edge of the platform is sufficient to afford a secure handhold. If a portable ladder is affixed to the scaffold, it shall be securely attached and shall have rungs meeting the spacing requirements of this subsection. Clearance shall be provided in the back of the ladder of not less than 6 inches from center of rung to the nearest scaffold structural member.

(7) When a ladder is supported by an aerial strand, and ladder hooks or other supports are not being used, the ladder shall be extended at least 2 feet above the strand and shall be secured to it (e.g. lashed or held by a safety strap around the strand and ladder side rail). When a ladder is supported by a pole, it shall be securely lashed to the pole unless the ladder is specifically designed to prevent movement when used in this application.

(8) Portable wood straight ladders, when in use, shall be equipped with safety shoes.

(9) Ladders shall be inspected by a competent person prior to each use. Ladders which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "dangerous do not use."

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-280, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-280, filed 12/30/76; Order 75-41, § 296-32-280, filed 12/19/75.]

WAC 296-32-290 Vehicle-mounted material handling devices and other mechanical equipment. (1) General.

(a) The employer shall ensure that visual inspections are made of the equipment by a competent person each day the equipment is to be used to ascertain that it is in good condition.

(b) The employer shall ensure that tests shall be made at the beginning of each shift by a competent person to insure the vehicle brakes and operating systems are in proper working condition.

(2) Scrapers, loaders, dozers, graders and tractors.

All mobile, self-propelled scrapers, mobile front end loaders, mobile dozers, agricultural and industrial tractors, crawler tractors, crawler-type loaders, and motor graders, with or without attachments, that are used in telecommunications work shall have rollover protective structures that meet the requirements of WAC 296-155-950 through 296-155-965.

(3) Aerial manlift equipment.

(a) These devices shall not be operated with any conductive part of the equipment closer to exposed energized power lines than the clearances set forth in Table 1 of this chapter.

(b) Only qualified drivers shall be permitted to operate aerial manlift equipment and shall possess a current motor vehicle operator's license.

(c) When performing work from aerial manlift equipment, the worker shall wear a safety belt attached to the boom.

(d) When any aerial manlift equipment is parked at the jobsite, the brakes shall be set. Wheel chocks shall be used to prevent uncontrolled movement. If equipped with outriggers, the outriggers shall be implanted on firm footing.

(e) Manufacturer's recommended maximum load limit shall be posted near each set of controls, kept in legible condition and the maximum load limit shall not be exceeded.

(f) Flashing warning lights shall be installed and maintained on all aerial manlift equipment used on public thoroughfares.

(4)(a) The operation of all motor vehicles and trailers shall be in conformance with the motor vehicle laws, the general safety and health standards of the state of Washington and all local traffic ordinances.

(b) When it is necessary for the worker to work in the bucket at an elevated position with the vehicle in motion, there shall be direct communication between the worker and the vehicle operator.

(5) Derrick trucks and similar equipment.

(a) This equipment shall not be operated with any conductive part of the equipment closer to exposed energized power lines than the clearances set forth in Table 1 of this chapter.

(b) When derricks are used to handle poles near energized power conductors, these operations shall comply with the requirements contained in WAC 296-32-220(10) and 296-32-330(11) of this chapter.

(c) Moving parts of equipment and machinery carried on or mounted on telecommunications line trucks shall be guarded. This may be done with barricades as specified in WAC 296-32-240(2) of this chapter.

(d) Derricks and the operation of derricks shall comply with the following requirements:

(i) Manufacturer's specifications, load ratings and instructions for derrick operation shall be strictly observed.

(ii) Rated load capacities and instructions related to derrick operation shall be conspicuously posted on a permanent weather-resistant plate or decal in a location on the derrick that is plainly visible to the derrick operator.

(iii) Prior to derrick operation the parking brake must be set and the stabilizers extended if the vehicle is so equipped. When the vehicle is situated on a grade, at least two wheels must be chocked on the downgrade side.

(iv) Only persons trained in the operation of the derrick shall be permitted to operate the derrick.

(v) Hand signals to derrick operators shall be those prescribed by ANSI B30.6-1969, "Safety Code for Derricks."

(vi) The employer shall ensure that the derrick and its associated equipment are inspected by a competent person at intervals set by the manufacturer but in no case less than once per year. Records shall be maintained including the dates of inspections, and necessary repairs made.

(vii) Modifications or additions to the derrick and its associated equipment that alter its capacity or affect its safe operation shall be made only with written certification from the manufacturer, or other equivalent entity, such as a nationally recognized testing laboratory, that the modification results in the equipment being safe for its intended use. Such changes shall require the changing and posting of revised capacity and instruction decals or plates. These new ratings or limitations shall be as provided by the manufacturer or other equivalent entity.

(viii) Wire rope used with derricks shall be of improved plow steel or equivalent. Wire rope safety factors shall be in accordance with American National Standards Institute B30.6-1969.

(ix) Wire rope shall be taken out of service, or the defective portion removed, when any of the following conditions exist:

(A) The rope strength has been significantly reduced due to corrosion, pitting, or excessive heat, or

(B) The thickness of the outer wires of the rope has been reduced to two-thirds or less of the original thickness, or

(C) There are more than six broken wires in any one rope lay, or

(D) There is excessive permanent distortion caused by kinking, crushing, or severe twisting of the rope.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-290, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-290, filed 12/30/76; Order 75-41, § 296-32-290, filed 12/19/75.]

WAC 296-32-300 Materials handling and storage. (1) Poles.

(a) When working with poles in piles or stacks, work shall be performed from the ends of the poles and precautions shall be taken for the safety of employees at the other end of the pole.

(b) During pole hauling operations, all loads shall be secured to prevent displacement. Lights, reflectors and/or flags shall be displayed on the end and sides of the load.

(c) The requirements for installation, removal, or other handling of poles in pole lines are prescribed in WAC 296-32-330 which pertains to overhead lines.

(d) In the case of hoisting machinery equipped with a positive stop load-holding device, it shall be permissible for the operator to leave their position at the controls (while a load is suspended) for the sole purpose of assisting in positioning the load prior to landing it.

(e) Prior to unloading steel, poles, crossarms, and similar material, the load shall be thoroughly examined to ascertain that the load has not shifted, that binders or stakes have not broken, and that the load is not otherwise hazardous to employees.

(2) Cable reels. Cable reels and poles in storage shall be checked or otherwise restrained to prevent uncontrollable movement.

(3) All tools and materials shall be stored in a safe and orderly manner.

(4) Workers shall not carry loose materials, tools, or equipment on or in vehicles in a manner that would constitute a hazard.

(5) All buildings, storage yards, equipment and other property shall be kept in a clean and orderly manner.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-300, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-300, filed 12/30/76; Order 75-41, § 296-32-300, filed 12/19/75.]

WAC 296-32-310 Cable fault locating and testing. (1) Employees involved in using high voltages to locate trouble or test cables shall be instructed in the precautions necessary for their own safety and the safety of other employees.

(2) Before voltage is applied to equipment not isolated, all possible precautions shall be taken to insure that no employee can make contact with the energized conductors under test.

(3) Only trained and authorized personnel shall repair and test medium and high voltage equipment.

[Order 76-38, § 296-32-310, filed 12/30/76; Order 75-41, § 296-32-310, filed 12/19/75.]

WAC 296-32-320 Grounding for employee protection—Pole lines. (1) Power conductors. Electric power conductors and equipment shall be considered as energized until the employee can determine that they are bonded to one of the grounds as listed in subsection (4) of this section.

(2) Nonworking open wire. Nonworking open wire communications lines shall be bonded to one of the grounds listed in subsection (4) of this section.

(3) Vertical power conduit, power ground wires and street light fixtures.

(a) Metal power conduit on joint use poles, exposed vertical power ground wires, and street light fixtures which are below communications attachments or less than 20 inches above these attachments, shall be considered energized and shall be tested for voltage unless the employee can visually determine that they are bonded to the communications suspension strand or cable sheath.

(b) If no hazardous voltage is shown by the voltage test, a temporary bond shall be placed between such street light fixture, exposed vertical power grounding conductor, or metallic power conduit and the communications cable strand. Temporary bonds used for this purpose shall have sufficient conductivity to carry at least 500 amperes for a period of one second without fusing.

(4) Protective grounding. Acceptable grounds for protective grounding are as follows:

(a) A vertical ground wire which has been tested, found safe, and is connected to a power system multigrounded neutral or the grounded neutral of a power secondary system where there are at least three services connected;

(b) Communications cable sheath or shield and its supporting strand where the sheath or shield is:

(i) Bonded to an underground or buried cable which is connected to a central office ground, or

(ii) Bonded to an underground metallic piping system, or

(iii) Bonded to a power system multigrounded neutral or grounded neutral of a power secondary system which has at least three services connected;

(c) Guys which are bonded to the grounds specified in subdivisions (a) and (b) of this subsection and which have continuity uninterrupted by an insulator; and

(d) If all of the preceding grounds are not available, arrays of driven ground rods where the resultant resistance to ground will be low enough to eliminate danger to personnel or permit prompt operation of protective devices.

(5) Attaching and removing temporary bonds. When attaching grounds (bonds), the first attachment shall be made to the protective ground. When removing bonds, the connection to the line or equipment shall be removed first. Insulating gloves shall be worn during these operations.

(6) Temporary grounding of suspension strand.

(a) The suspension strand shall be grounded to the existing grounds listed in subsection (4) of this section when being placed on jointly used poles.

(b) Where power crossings are encountered on nonjoint lines, the strand shall be bonded to an existing ground listed in subsection (4) of this section as close as possible to the crossing. This bonding is not required where crossings are made on a common crossing pole unless there is an upward change in grade at the pole.

(c) Where traveling roller-type bonds are used, they shall be restrained so as to avoid stressing the electrical connections.

(d) Bonds between the suspension strand and the existing ground shall be at least No. 6AWG copper.

(e) Temporary bonds shall be left in place until the strand has been tensioned, dead-ended, and permanently grounded.

(f) The requirements of subdivision (a) through (e) of this subsection do not apply to the installation of insulated strand.

(7) Antenna work-radio transmitting stations 3-30 MHZ.

(a) Prior to grounding a radio transmitting station antenna, the employer shall insure that the rigger in charge:

(i) Prepares a danger tag signed with their signature,

(ii) Requests the transmitting technician to shutdown the transmitter and to ground the antenna with its grounding switch,

(iii) Is notified by the transmitting technician that the transmitter has been shutdown, and

(iv) Tags the antenna ground switch personally in the presence of the transmitting technician after the antenna has been grounded by the transmitting technician.

(b) Power shall not be applied to the antenna, nor shall the grounding switch be opened under any circumstances while the tag is affixed.

(c)(i) Where no grounding switches are provided, grounding sticks shall be used, one on each side of line, and tags shall be placed on the grounding sticks, antenna switch, or plate power switch in a conspicuous place.

(ii) To further reduce excessive radio frequency pickup, ground sticks or short circuits shall be placed directly on the transmission lines near the transmitter in addition to the regular grounding switches.

(iii) In other cases, the antenna lines may be disconnected from ground and the transmitter to reduce pickup at the point in the field.

(d) All radio frequency line wires shall be tested for pickup with an insulated probe before they are handled either with bare hands or with metal tools.

(e) The employer shall insure that the transmitting technician warn the riggers about adjacent lines which are, or may become energized.

(f) The employer shall insure that when antenna work has been completed, the rigger in charge of the job returns to the transmitter, notifies the transmitting technician in charge that work has been completed, and personally removes the tag from the antenna ground switch.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-320, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-320, filed 12/30/76; Order 75-41, § 296-32-320, filed 12/19/75.]

WAC 296-32-330 Overhead lines. (1) Handling suspension strand.

(a) The employer shall insure that when handling cable suspension strand which is being installed on poles carrying exposed energized power conductors, employees shall wear insulating gloves and shall avoid body contact with the strand until after it has been tensioned, dead-ended and permanently grounded.

(b) The strand shall be restrained against upward movement during installation:

(i) On joint-use poles, where there is an upward change in grade at the pole, and

(ii) On nonjoint-use poles, where the line crosses under energized power conductors.

(2) Need for testing wood poles. Unless temporary guys or braces are attached, the following poles shall be tested in accordance with subsection (3) of this section and determined to be safe before employees are permitted to climb them:

(a) Dead-end poles, except properly braced or guyed "Y" or "T" cable junction poles,

(b) Straight line poles which are not storm guyed and where adjacent span lengths exceed 165 feet.

(c) Poles at which there is a downward change in grade and which are not guyed or braced corner poles or cable junction poles.

(d) Poles which support only telephone drop wire, and

(e) Poles which carry less than ten communication line wires. On joint use poles, one power line wire shall be considered as two communication wires for purposes of this subdivision (2)(e).

(3) Methods for testing wood poles. The following method or an equivalent method shall be used for testing wood poles:

(a) Rap the pole sharply with a lineman's hammer, starting near the ground line and continuing upwards circumferentially around the pole to a height of approximately 6 feet. The hammer will produce a clear sound and rebound sharply when striking sound wood. Decay pockets will be indicated by a dull sound and/or a less pronounced hammer rebound. When decay pockets are indicated, the pole shall be considered unsafe.

(b) The pole shall be prodded as near the ground line as possible using a pole prod or a screwdriver with a single blade at least five inches long.

(c) If the pole is found unsafe, it shall be guyed or braced or supported in such a manner as to allow workers to safely perform their work.

(4) Unsafe poles or structures.

(a) Poles or structures determined to be unsafe by test or observation may not be climbed until made safe by guying, bracing or other means.

(b) Poles determined to be unsafe to climb shall, until they are made safe, be marked in a conspicuous place to alert and warn all employees of the unsafe condition.

(5) Test requirements for cable suspension strand.

(a) Before attaching a splicing platform to a cable suspension strand, the strand shall be tested and determined to have strength sufficient to support the weight of the platform and the employee. Where the strand crosses above power wires or railroad tracks it may not be tested but shall

be inspected in accordance with subsection (6) of this section.

(b) The following method or an equivalent method shall be used for testing the strength of the strand: A rope, at least three-eighths inches in diameter, shall be thrown over the strand. On joint lines, the rope shall be passed over the strand using tree pruner handles or a wire raising tool. If two employees are present, both shall grip the double rope and slowly transfer their entire weight to the rope and attempt to raise themselves off the ground. If only one employee is present, one end of the rope which has been passed over the strand shall be tied to the bumper of the truck, or other equally secure anchorage. The employee then shall grasp the other end of the rope and attempt to raise himself off the ground.

(6) Inspection of strand. Where strand passes over electric power wires or railroad tracks, it shall be inspected from an elevated working position at each pole supporting the span in question. The strand may not be used to support any splicing platform, scaffold or cable car, if any of the following conditions exist:

(a) Corrosion so that no galvanizing can be detected,

(b) One or more wires of the strand are broken,

(c) Worn spots, or

(d) Burn marks such as those caused by contact with electric power wires.

(7) Outside work platforms. Unless railings are provided, safety straps and body belts shall be used while working on elevated work platforms such as aerial splicing platforms, pole platforms, ladder platforms and terminal balconies.

(8) Other elevated locations. Safety straps and body belts shall be worn when working at elevated positions on poles, towers or similar structures, which do not have guarded work areas.

(9) Installing and removing wire and cable. Before installing or removing wire or cable, the pole or structure shall be guyed, braced, or otherwise supported, as necessary, to prevent failure of the pole or structure.

(10) Avoiding contact with energized power conductors or equipment. When cranes, derricks, or other mechanized equipment are used for setting, moving, or removing poles, all necessary precautions shall be taken to avoid contact with energized power conductors or equipment.

(11) Handling poles near energized power conductors.

(a) Joint use poles may not be set, moved, or removed where the nominal voltage of open electrical power conductors exceeds 34.5 kV phase to phase or 20 kV phase to ground.

(b) Poles that are to be placed, moved or removed during heavy rains, sleet or wet snow in joint lines carrying more than 8.7 kV phase to phase voltage or 5 kV phase to ground shall be guarded or otherwise prevented from direct contact with overhead energized power conductors.

(c)(i) In joint lines where the power voltage is greater than 750 volts but less than 34.5 kV phase to phase or 20 kV phase to ground, wet poles being placed, moved or removed shall be insulated with either a rubber insulating blanket, a fiberglass box guide, or equivalent protective equipment.

(ii) In joint lines where the power voltage is greater than 8.7 kV phase to phase or 5 kV phase to ground but less than 34.5 kV phase to phase or 20 kV phase to ground, dry poles being placed, moved, or removed shall be insulated with either a rubber insulating blanket, a fiberglass box guide, or equivalent protective equipment.

(iii) Where wet or dry poles are being removed, insulation of the pole is not required if the pole is cut off 2 feet or more below the lowest power wire and also cut off near the ground line.

(d) Insulating gloves shall be worn when handling the pole with either hands or tools, when there exists a possibility that the pole may contact a power conductor. Where the voltage to ground of the power conductor exceeds 15 kV to ground, Class II gloves (as defined in ANSI J6.6-1971) shall be used. For voltages not exceeding 15 kV to ground, insulating gloves shall have a breakdown voltage of at least 17 kV.

(e) The guard or insulating material used to protect the pole shall meet the appropriate 3 minute proof test voltage requirements contained in the ANSI J6.4-1971.

(f) When there exists a possibility of contact between the pole or the vehicle-mounted equipment used to handle the pole, and an energized power conductor, the following precautions shall be observed:

(i) When on the vehicle which carries the derrick, avoid all contact with the ground, with persons standing on the ground, and with all grounded objects such as guys, tree limbs, or metal sign posts. To the extent feasible, remain on the vehicle as long as the possibility of contact exists.

(ii) When it is necessary to leave the vehicle, step onto an insulating blanket and break all contact with the vehicle before stepping off the blanket and onto the ground. As a last resort, if a blanket is not available, the employee may jump cleanly from the vehicle.

(iii) When it is necessary to enter the vehicle, first step onto an insulating blanket and break all contact with the ground, grounded objects and other persons before touching the truck or derrick.

(12) Working position on poles. Climbing and working are prohibited above the level of the lowest electric power conductor on the pole (exclusive of vertical runs and street light wiring), except:

(a) Where communications facilities are attached above the electric power conductors, and a rigid fixed barrier is installed between the electric power facility and the communications facility, or

(b) Where the electric power conductors are cabled secondary service drops carrying less than 300 volts to ground and are attached 40 inches or more below the communications conductors or cables.

(13) Metal tapes and ropes.

(a) Metal measuring tapes, metal measuring ropes, or tapes containing conductive strands shall not be used when working near exposed energized parts.

(b) Where it is necessary to measure clearances from energized parts, only nonconductive devices shall be used.

[Order 76-38, § 296-32-330, filed 12/30/76; Order 75-41, § 296-32-330, filed 12/19/75.]

WAC 296-32-340 Underground lines and cable vaults. The provisions of this section apply to the guarding of manholes and street openings, and to the ventilation and testing for gas in manholes and unvented vaults, where

telecommunications field work is performed on or with underground lines.

(1) Guarding manholes and street openings.

(a) When covers of manholes or vaults are removed, the opening shall be promptly guarded by a railing, temporary cover, or other acceptable temporary barrier to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.

(b) When work is to be performed on underground plant, the immediate foreman in charge and the craftsman assigned to do the work shall make a complete evaluation of the work location in regard to the hazards that are created or that could exist prior to beginning the work in underground plant.

(c) The immediate foreman and the craftsman responsible for the job completion shall be in agreement of the proper method of eliminating or reducing any hazards that are present or could be caused by the location of the work site, before the job proceeds.

(2) Requirements prior to entry of manholes and unvented vaults.

(a) The internal atmosphere shall be tested for combustible gas.

(b) Mechanical forced air ventilation shall be in operation at all times when workers are required to be in the manhole.

(c) The mechanical forced air equipment provided shall be of a quantity to replace the exhausted air and shall be tempered when necessary.

(d) Ventilation equipment shall be designed in such a manner that workers will not be subjected to excessive air velocities.

(3) Joint power and telecommunication manholes. While work is being performed in a manhole occupied jointly by an electric utility and a telecommunication utility, an employee with basic first aid training shall be available in the immediate vicinity to render emergency assistance as required. This employee is not to be precluded from occasionally entering a manhole to provide assistance other than in an emergency. The requirement of WAC 296-32-340(3) does not preclude a qualified employee, working alone, from entering for brief periods of time, a manhole where energized cables or equipment are in service, for the purpose of inspection, housekeeping, taking readings, or similar work if such work can be performed safely.

(4) Ladders.

(a) Ladders shall be used to enter and exit manholes exceeding four feet in depth.

(b) Metal manhole ladders shall be free of structural defects and free of accident hazards such as sharp edges and burrs. The metal shall be protected against corrosion unless inherently corrosion-resistant.

(c) These ladders may be designed with parallel side rails, or with side rails varying uniformly in separation along the length (tapered) or with side rails flaring at the base to increase stability.

(d) The spacing of rungs or steps shall be on 12-inch centers.

(e) Connections between rungs or steps and side rails shall be constructed to ensure rigidity as well as strength.

(f) Rungs and steps shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize the possibility of slipping.

(g) Ladder hardware shall meet the ladder's component parts and shall be of a material that is protected against corrosion unless inherently corrosion-resistant. Metals shall be so selected as to avoid excessive galvanic action.

(5) Flames. When open flames must be used in manholes, the following precautions shall be taken to protect against the accumulation of combustible gas:

(a) A test for combustible gas shall be made immediately before using any open flame device, and

(b) A fuel tank (e.g., acetylene) may not be in the manhole unless in actual use.

[Order 76-38, § 296-32-340, filed 12/30/76; Order 75-41, § 296-32-340, filed 12/19/75.]

WAC 296-32-350 Microwave transmission. (1) Eye protection. Employers shall insure that employees do not look into an open waveguide which is connected to an energized source of microwave radiation.

(2) Hazardous area. Accessible areas associated with microwave communication systems where the electromagnetic radiation level exceeds the radiation protection guide given in WAC 296-62-09005 shall be posted as described in that section. The lower half of the warning symbol shall include the following:

Radiation in this area may exceed hazard limitations and special precautions are required. Obtain specific instruction before entering.

(3) Protective measures. When an employee works in an area where the electromagnetic radiation exceeds the radiation protection guide, the employer shall institute measures that insure that the employee's exposure is not greater than that permitted by the radiation guide. Such measures shall include, but not be limited to those of an administrative or engineering nature or those involving personal protective equipment.

[Order 76-38, § 296-32-350, filed 12/30/76; Order 75-41, § 296-32-350, filed 12/19/75.]

WAC 296-32-360 Tree trimming—Electrical hazards. (1) General.

(a) Employees engaged in pruning, trimming, removing, or clearing trees from lines shall be required to consider all overhead and underground electrical power conductors to be energized with potentially fatal voltages, never to be touched (contacted) either directly or indirectly.

(b) Employees engaged in line-clearing operations shall be instructed that:

(i) A direct contact is made when any part of the body touches or contacts an energized conductor, or other energized electrical fixture or apparatus.

(ii) An indirect contact is made when any part of the body touches any object in contact with an energized electrical conductor, or other energized fixture or apparatus.

(iii) An indirect contact can be made through conductive tools, tree branches, truck equipment, or other objects, or as a result of communications wires, cables, fences, or guy wires being accidentally energized.

(iv) Electric shock will occur when an employee, by either direct or indirect contact with an energized conductor, energized tree limb, tool, equipment, or other object, provides a path for the flow of electricity to a grounded object or to the ground itself. Simultaneous contact with two energized conductors will also cause electric shock which may result in serious or fatal injury.

(c) Before any work is performed in proximity to energized conductors, the system operator/owner of the energized conductors shall be contacted to ascertain if they know of any hazards associated with the conductors which may not be readily apparent. This rule does not apply when operations are performed by the system operator/owner.

(2) Working in proximity to electrical hazards.

(a) Employers shall ensure that a close inspection is made by the employee and by the crewleader or supervisor in charge before climbing, entering, or working around any tree, to determine whether an electrical power conductor passes through the tree, or passes within reaching distance of an employee working in the tree. If any of these conditions exist either directly or indirectly, an electrical hazard shall be considered to exist unless the system operator/owner has caused the hazard to be removed by deenergizing the lines, or installing protective equipment.

(b) Only employees or trainees, familiar with the special techniques and hazards involved in line clearance, shall be permitted to perform the work if it is found that an electrical hazard exists.

(c) During all tree working operations aloft where an electrical hazard of more than 750 volts exists, there shall be a second employee or trainee qualified in line clearance tree trimming within normal voice communication.

(d) Where tree work is performed by employees qualified in line-clearance tree trimming and trainees qualified in line-clearance tree trimming, the clearances from energized conductors given in Table 2 shall apply.

TABLE 2

Minimum Working Distances From Energized Conductors For Line-Clearance Tree Trimmers and Line-Clearance Tree-Trimmer Trainees

Voltage Range (Phase to Phase) (kilovolts)	Minimum Working Distance
2.1 to 15.0	2 ft. 0 in.
15.1 to 35.0	2 ft. 4 in.
35.1 to 46.0	2 ft. 6 in.
46.1 to 72.5	3 ft. 0 in.
72.6 to 121.0	3 ft. 4 in.
138.0 to 145.0	3 ft. 6 in.
161.0 to 169.0	3 ft. 8 in.
230.0 to 242.0	5 ft. 0 in.
345.0 to 362.0	7 ft. 0 in.
500.0 to 552.0	11 ft. 0 in.
700.0 to 765.0	15 ft. 0 in.

(e) Branches hanging on an energized conductor may only be removed using insulated equipment by a qualified electrical worker.

(f) Rubber footwear, including lineman's overshoes, shall not be considered as providing any measure of safety from electrical hazards.

(g) Ladders, platforms, and aerial devices, including insulated aerial devices, shall not be brought in contact with an electrical conductor. Reliance shall not be placed on their dielectric capabilities.

(h) When an aerial lift device contacts an electrical conductor, the truck supporting the aerial lift device shall be considered as energized.

(3) Storm work and emergency conditions.

(a) Since storm work and emergency conditions create special hazards, only authorized representatives of the electric utility system operator/owner and not telecommunication workers may perform tree work in these situations where energized electrical power conductors are involved.

(b) When an emergency condition develops due to tree operations, work shall be suspended and the system operator/owner shall be notified immediately.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-32-360, filed 7/20/94, effective 9/20/94; Order 76-38, § 296-32-360, filed 12/30/76; Order 75-41, § 296-32-360, filed 12/19/75.]

WAC 296-32-370 Buried facilities—Communications lines and power lines in the same trench. [Reserved.]

Chapter 296-36 WAC
SAFETY STANDARDS—COMPRESSED AIR WORK

WAC

WAC 296-36-010 Definitions. As used herein, the following terms mean:

(1) **Approved.** In compliance with a subsisting resolution of approval adopted by the department of labor and industries, division of safety.

(2) **Adequate.** The term when applied to materials, devices, structures, methods and procedures is synonymous with effective, equal, equivalent, firm, necessary, proper, safe, secure, substantial, sufficient, suitable and shall denote such kind and quality as a reasonable and prudent man experienced in compressed air work would require in order to provide safe working conditions for himself in the performance of the work.

(3) **Bulkhead.** An upright partition in tunnels separating compartments; a structure or partition capable of resisting pressure and separating a high pressure compartment from a low pressure compartment.

(4) **Caisson.** A structure in or by means of which excavation in a predominantly vertical direction is carried is carried on by persons working in a compressed air environment.

(5) **Compressed air worker.** A person performing any work or duty in compressed air. This term does not include divers.

(6) **Designated person.** A person selected and directed by an employer to perform a specified task or duty.

(7) **Director.** The director of the department of labor and industries, state of Washington.

(8) **Effective, equal, equivalent.** See (2), "adequate."

(9) **Firm.** See (2), "adequate."

(10) **Job.** The site, buildings, equipment and operations proximately associated with the work in compressed air.

(11) **Lock.** A chamber designed to facilitate the passage of men, materials and equipment from one ambient air pressure to another ambient air pressure.

(a) Emergency lock. A lock chamber designed to hold and to permit the quick passage of an entire shift of compressed air workers.

(b) Man lock. A lock chamber through which only men pass.

(c) Materials lock. A lock chamber designed and used normally for the passage of materials and equipment.

(d) Medical lock. A special lock chamber in which men suffering from decompression illness are placed for medical attention and treatment. Also used as a facility for preemployment physical examinations.

(12) **Necessary.** See (2), "adequate."

(13) **Owner.** The person, real or corporate, for whom the construction is being done.

(14) **Pressure.**

(a) Absolute. Gage pressure plus one atmosphere; viz, at sea level with a gage pressure of 30 pounds per square inch, the absolute pressure is 30+14.7=44.7 pounds per square inch.

(b) Ambient. That which encompasses on all sides, surrounds. Usually taken as the gage pressure.

(c) Atmospheric. A pressure of one atmosphere at sea level; the pressure of air at sea level, used as a unit of measurement, equivalent to 14.7 pounds per square inch. One atmosphere of pressure is also zero pounds per square inch gage pressure.

(d) Gage. That pressure measured by gage and indicating the pressure in pounds per square inch exceeding one atmosphere.

(e) Normal. Atmospheric pressure of 14.7 pounds per square inch at sea level or zero gage pressure.

(f) Total. Total pressure is a pressure of one atmosphere plus gage pressure. See (14)(a), "absolute."

(15) **Safe, secure.** See (2), "adequate."

(16) **Shaft.** An excavation made from the surface of the ground the longer of axis of which forms an angle with the horizontal greater than twenty degrees.

(17) **Shafting.** An air and watertight enclosure built in the roof of a caisson and extended upward until above the ground or water level.

(18) **Shall.** The word "shall" is always mandatory.

(19) **Substantial, sufficient, suitable.** See (2), "adequate."

(20) **Supervisor.** The supervisor of safety, department of labor and industries, state of Washington.

(21) **Tunnel.** The underground excavation for a passageway including all shafts and other openings leading to or from such excavation, and all places, buildings and equipment used in connection therewith. Tunnels which are administered as distinct units constitute separate jobs.

(22) **Working chamber.** The space or compartment in which the excavating is being done in compressed air.

[Rule I, filed 12/28/62; Part One (Definitions), filed 3/23/60.]

WAC 296-36-020 Responsibility. (1) **The owner's responsibility.** There shall be on every job involving work in compressed air an owner's representative who shall be experienced in compressed air work and who shall represent the owner in all matters of joint responsibility under the Washington labor laws and the standards of safety for the work. The owner shall advise the director of the department of labor and industries in writing of the name and address of each such representative within 24 hours after starting work on the job.

(2) **The superintendent.** There shall be on every job, while work in compressed air is in progress, a superintendent experienced in compressed air work representing the employer of compressed air workers and who shall be in full charge of the job. The employer shall advise the director of the department of labor and industries in writing of the name and address of each such superintendent within 24 hours after starting work on the job.

(3) **Employees' responsibilities.** Every employee shall be responsible for carrying out all rules which immediately concern or affect his conduct and he shall use the safety devices and means furnished for his protection.

[Rules (Part II A, B, and C), filed 12/28/62; § 22, filed 3/23/60.]

WAC 296-36-030 General operating requirements—General duty to provide safety. Every reasonable precaution shall be taken to insure the safety of the workmen whether provided herein or not.

[Rules (Part III A), filed 12/28/62.]

WAC 296-36-035 General operating requirements—Safety miner. (1) A safety miner shall be selected by the crew on each shift. He shall have at least five years' experience as a practical miner and shall be the holder of an unexpired first-aid certificate from the Red Cross, U.S. Bureau of Mines, or the department of labor and industries. His duties shall be to check conditions to eliminate common work hazards such as loose rock, faulty timbers, poor rails, insufficient lighting, defective ladders and scaffolds, fan pipes, firing lines and other equipment directly related to the work of a miner. If such defects are found he shall immediately report the same to the superintendent.

(2) It shall be the duty of the superintendent, upon ascertaining such defects or hazards, to take immediate steps to remedy the same in compliance with the rules hereinafter set forth. A record of inspections made on each operation shall be kept on file and a copy thereof shall be submitted to the safety division of the department of labor and industries.

(3) In the event that disagreement arises out of the interpretation of these rules, then the question shall be referred to the division of safety of the department of labor and industries for its decision in accordance with the laws of the state, the safety standards, or rules and regulations issued hereunder, and a decision thus rendered shall be binding.

[Rules (Part III B), filed 12/28/62; § 15, filed 3/23/60.]

WAC 296-36-040 General operating requirements—Maintenance. All machinery, equipment, appliances, materials, structures and places on the job shall at all times be maintained in a safe condition and in good repair. Every person observing any defects shall immediately advise his immediate or higher superior.

[Rules (Part III C), filed 12/28/62; Rule 2203, § 22, filed 3/23/60.]

WAC 296-36-045 General operating requirements—Daily inspection. While work in compressed air is in progress, a competent person designated by the superintendent shall make a regular inspection at least once every day of all machinery, equipment, appliances, structures and places. Immediately upon discovery of any defect, he shall report the same in writing on forms provided by the state department of labor and industries to the person present in charge of the job. A copy of the report shall be sent immediately to the safety division of the department of labor and industries.

[Rules (Part III D), filed 12/28/62.]

WAC 296-36-050 General operating requirements—Maximum permissible pressure. No person shall be subjected to pressure exceeding 50 pounds per square inch gage except in case of emergency.

[Rules (Part III E), filed 12/28/62; § 1, filed 3/23/60.]

WAC 296-36-055 General operating requirements—Temperature in working chamber. Every effort shall be made by the best available means to prevent the wet bulb temperature exceeding 80 degrees F. A wet bulb thermometer, in good working order, shall be provided in every working chamber.

[Rules (Part III F), filed 12/28/62; § 20, Rule 2006, filed 3/23/60.]

WAC 296-36-060 General operating requirements—Bracing of working chamber, shafts and passageways. The working chamber, shafts and passageways of tunnels and caissons shall be provided with bracing as may be necessary to safely resist any superimposed loads or any forces which may cause excessive deformation of the walls.

[Rules (Part III G), filed 12/28/62; § 19, filed 3/23/60.]

WAC 296-36-065 General operating requirements—Communication. A telephone intercommunication system ready for use at all times shall be maintained between the working chamber, the power house, the source of compressed air, the place of compressed air control, the first-aid room and the superintendent's office.

Exception: Where the working chamber of a caisson is less than 150 square feet in area, such system shall be maintained between the working chamber, outside the lock and the place of compressed air control or the superintendent's office.

[Rules (Part III H), filed 12/28/62; § 8, filed 3/23/60.]

WAC 296-36-070 General operating requirements—Liquor. No person under the influence of intoxicating liquor shall be permitted to enter upon the job; nor shall any person carry any liquor on the job.

[Rules (Part III I), filed 12/28/62; § 24, Rule 2402, filed 3/23/60.]

WAC 296-36-075 General operating requirements—Identification badge. Every compressed air worker employed in the work shall wear an identification badge furnished by the employer both on and off the job. The badge shall be of durable plastic designed to be worn next to the body. The badge shall state that the wearer is employed as a compressed air worker, shall bear the address and telephone number of the medical lock, and shall contain instructions that in case of an emergency of unknown or doubtful cause or illness, the wearer shall be rushed to the medical facilities and not to a hospital.

[Rules (Part III J), filed 12/28/62; § 24, Rule 2412, filed 3/23/60.]

WAC 296-36-080 General operating requirements—Notification of civil authorities, hospitals, etc. When workmen are employed in compressed air, the owner shall see that all general hospitals, city and county health departments, local medical societies, police and fire rescue, and the county sheriff in the locality are acquainted with the fact that such work is being undertaken. These authorities and organizations shall be furnished with the names, addresses and telephone numbers of the designated medical officers as well as the location and telephone number of the medical lock. The same civil authorities shall be further notified when compressed air operations on the site are completed.

[Rules (Part III K), filed 12/28/62.]

WAC 296-36-085 General operating requirements—Instructions to be posted. The following instructions as well as supplemental instructions deemed advisable by the medical officer for the guidance of compressed air workers shall be printed and conspicuously posted in the change house and in the man locks:

(1) Never go on shift with an empty stomach.

(2) Avoid all alcoholic liquors.

(3) Eat moderately.

(4) Sleep at least seven hours daily.

(5) Take extra outer clothing into the tunnel when going on shift and wear it during decompression to avoid chilling during that period.

(6) Take a warm bath after each shift.

(7) Do not give men, suffering from compressed air illness, any intoxicating liquor.

(8) After you have had a cold, or if your ears are uncomfortable, or if you do not feel well for any reason, report at once to the medical lock for a checkup.

(9) If you are taken sick away from the plant, communicate at once with the physician-in-charge, Dr. . . . . ., telephone . . . . . .

(10) Wear your identification badge so it will be known what to do with you in an emergency.

(11) See that you are reexamined as required by the rules.

(12) Proper decompression means safety and freedom from compressed air illness.

(13) No person shall smoke or carry lighted smoking materials in compressed air. No matches, mechanical or chemical igniters will be permitted in the working chamber except those necessary for welding or flame cutting operations.

It shall be the duty and responsibility of each employee to observe and abide by the posted instructions and regulations.

[Rules (Part III L), filed 12/28/62; Rule 2204, filed 3/23/60.]

WAC 296-36-100 Compression and decompression of workmen—General. Subject to subsections 1-5 below, compression and decompression of workmen shall be carried out in accordance with the rules hereinafter prescribed:

(1) Compression or decompression may be carried out in accordance with such alternative regulations as are approved by the state department of labor and industries in writing.

(2) Except in an emergency, no workman shall be compressed to a pressure exceeding 50 pounds per square inch gage unless regulations for the decompression of such workman have been approved under the foregoing paragraph of this rule.

(3) The monograph "Decompression sickness and its prevention among compressed air workers" prepared by Gerald J. Duffner, M.D. (Captain, Medical Corps, U.S. Navy) and dated 6 November 1962, establishes the criteria for and shall be the guide in the determination of decompression methods and procedures and the preparation of decompression tables. Copies of the monograph are available from the supervisor of safety, department of labor and industries, state of Washington.

(4) A special low-pressure decompression chamber of sufficient size to accommodate the entire force of workmen being decompressed at the end of a shift shall be provided under the following circumstances:

Excepting the infrequent, occasional or emergency condition, when any regularly established routine term or schedule of work includes a working period requiring a total time of decompression exceeding seventy-five minutes, the special low-pressure decompression chamber shall be provided and shall be used as a facility to accomplish the final stage or phase of decompression. The special chamber shall conform with and shall be operated in accordance with sections WAC 296-36-130 and 296-36-120(2) example No. 2 respectively.

(5) When a workman has, within the immediately preceding period of 8 hours, been exposed to a pressure greater than 13 pounds per square inch gage and has to be compressed in a man lock other than the lock in which he was last decompressed, he shall, before compression, produce to the lock attendant written particulars signed by the lock attendant of the lock where he was last decompressed indicating his last working period. For the purposes of these regulations, the term "working period" shall mean the period or the sum of the periods during which, since last subject to ordinary atmospheric pressure for at least 8 consecutive hours, a workman has been under pressure in a working chamber or chambers; the written particulars shall be specific in stating the length of time the workman was exposed to compressed air, the gage pressure to which he was subjected, the schedule of decompression used, the total length of time devoted to decompression procedures and the hour at which decompression was completed. As soon as practicable, all data shall be entered in the prescribed register or log at the lock where he is compressed and the data shall, as soon as practicable, be communicated to the attendant at any other lock from which the workman is liable to return to the open air.

[Rules (Part IV A), filed 12/28/62; § 2, filed 3/23/60.]

WAC 296-36-105 Compression and decompression of workmen—Compression. During the compression of workmen, the pressure shall not, in the first minute after starting compression, be increased to more than 3 pounds per square inch gage. When the pressure of 3 pounds per square inch gage is reached, the pressure shall not be further

increased until after the lapse of a period sufficiently long to enable the lock attendant to ascertain whether any workman in the man lock complains of discomfort. After the lapse of that period, the pressure shall not be increased at a rate faster than 10 pounds per square inch gage per minute and a pause similar to that provided at 3 pounds per square inch gage shall also be provided at a pressure not exceeding 7 pounds per square inch gage. In all instances the pressure shall be increased gradually so as to insure, as far as practicable, that no workman suffers discomfort. If a workman complains of discomfort, and such complaint is signified to the lock attendant, any compression then proceeding shall be immediately stopped, and, unless the workman who has complained of the discomfort reports within 5 minutes that the discomfort has ceased and such report is conveyed to the lock attendant, the lock attendant shall without further delay gradually reduce the pressure in the lock until the workman reports that the discomfort has ceased; but, if he does not so report, the pressure shall be reduced gradually to atmospheric pressure and the workman released from the lock.

[Rules (Part IV B), filed 12/28/62.]

WAC 296-36-110 Compression and decompression of workmen—Decompression—General. (1) **Working period.** The "working period" shall include the time or period or the sum of periods during which, since last subject to ordinary atmospheric pressure for at least 8 consecutive hours, a workman has been under pressure in a working chamber or chambers.

(2) **Work pressure.** The "work pressure" means the highest pressure to which the workman has been exposed in the course of his working period: *Provided,* That,

(a) Sudden and exceptional variations of pressure involving excess pressure for not more than 15 minutes may be disregarded;

(b) Where, during the whole of his working period a workman about to be decompressed has been in a working chamber in which (as in tidal waters) the pressure has been gradually varied by more than 5 pounds per square inch in the course of that period, the work pressures shall be the mean of the pressures half way through that period and at the end of it.

(3) **Decompression required.** No person employed in compressed air shall be permitted to pass from the place in which the work is being done to atmospheric pressure, except after decompression in accordance with the procedures hereinafter established.

[Rules (Part IV C), filed 12/28/62; §§ 1 and 2, filed 3/23/60.]

WAC 296-36-115 Compression and decompression of workmen—Method and procedure. Decompressions shall be accomplished in accordance with the following methods and procedures:

(1) **Normal condition.** A normal condition is one during which exposure to compressed air is limited to a single continuous "working period" followed by a single decompression in any given 24 hour period; the total time of exposure to compressed air during the single continuous "working period" is not interrupted by exposure to normal atmospheric pressure; and a second exposure to compressed air does not occur until at least 8 consecutive hours of exposure to normal atmospheric pressure has elapsed since the workman has been under pressure in a working chamber. Decompression for normal condition shall be in accordance with the decompression tables.

(2) **Multiple exposures or emergency conditions.** The appointed physician shall be responsible for the preparation and establishment of methods and procedures of decompression applicable to multiple exposures and emergency conditions. The decompression times and stages shall be calculated and the methods and procedures determined and placed into effect in accordance with the instructions contained in the monograph "Decompression sickness and its prevention among compressed air workers" referred to in WAC 296-36-100(3).

[Rules (Part IV D), filed 12/28/62.]

WAC 296-36-120 Compression and decompression of workmen—Decompression tables. (1) **Explanation.**

(a) The decompression tables are computed for working chamber pressures from 14 to 50 pounds per square inch gage inclusive by 2 pound increments and for exposure times for each pressure extending from 1/2 to over 8 hours inclusive. Decompressions will be conducted by two or more stages with a maximum of 4 stages, the latter for a working chamber pressure of 40 pounds per square inch gage or over.

(b) Stage 1, consists of a reduction in ambient pressure ranging from 10 to a maximum of 16 pounds per square inch but in no instance will the pressure be reduced below 4 pounds at the end of stage 1. This reduction in pressure in stage 1 will always take place at a rate of 5 pounds per minute.

(c) Further reduction in pressure will take place during stage 2 and subsequent stages as required at a slower rate but in no event at a rate greater than one pound per minute.

(d) Decompression table No. 1 indicates in the body of the table the total decompression time in minutes for various combinations of working chamber pressure and exposure time.

(e) Decompression table No. 2 in several sheets indicates for the same various combinations of working chamber pressure and exposure time the following:

(i) The number of stages required;

(ii) The reduction in pressure and the terminal pressure for each required stage;

(iii) The time in minutes through which the reduction in pressure is accomplished for each required stage;

(iv) The pressure reduction rate in minutes per pound for each required stage;

Important note: The pressure reduction in each stage is accomplished at a uniform rate. Do not interpolate between values shown on the tables. Use the next higher value of working chamber pressure or exposure time should the actual working chamber pressure or the actual exposure time, respectively, fall between those for which calculated values are shown in the body of the tables.

(2) **Examples.**

(a) **Example No. 1.** 4 hour working period at 20 pounds gage.

Decompression table No. 1.
20 pounds for 4 hours,

Total decompression time 43 minutes

Decompression table No. 2.

Stage 1
Reduce pressure from 20 pounds to 4 pounds at the uniform rate of 5 pounds per minute. Elapsed time stage 1:

$$\frac{16}{5} = 3 \text{ minutes}$$

Stage 2 (final stage)
Reduce pressure at a uniform rate from 4 pounds to zero pounds gage over a period of 40 minutes.
Rate = 0.10 pounds per minute or 10.00 minutes per pound
Stage 2 (final) elapsed time 40 minutes

Total time 43 minutes

(b) **Example No. 2.** 5 hour working period at 24 pounds gage

Decompression table No. 1
24 pounds for 5 hours
Total decompression time 117 minutes

Decompression table No. 2

Stage 1
Reduce pressure from 24 pounds to 8 pounds at the uniform rate of 5 pounds per minute
Elapsed time stage 1,

$$\frac{16}{5} = 3 \text{ minutes}$$

Stage 2
Reduce pressure at a uniform rate from 8 pounds to 4 pounds over a period of 4 minutes.
Rate, 1 pound per minute
Elapsed time, stage 2 4 minutes

Transfer men to special decompression chamber maintaining the 4 pound pressure during the transfer operation

Stage 3 (Final stage)
In the special decompression chamber reduce the pressure at a uniform rate from 4 pounds to zero pounds gage over a period of 110 minutes.
Rate, 0.037 pounds per minute or 27.5 minutes per pound
Stage 3 (final stage) Elapsed time 110 minutes

Total time 117 minutes

(3)

DECOMPRESSION TABLE NO. 1

Work Pressure	Total Decompression Time - Minutes Working Period Hours										
psig	1/2	1	1-1/2	2	3	4	5	6	7	8	Over 8
0-14	6	6	6	6	6	6	6	6	16	16	32
16	7	7	7	7	7	7	17	33	48	48	63
18	7	7	7	3	11	17	48	63	63	73	87
20	7	7	8	15	15	43	63	73	83	103	113
22	9	9	16	24	38	68	93	103	113	128	133
24	11	12	23	27	52	92	117	122	127	137	151
26	13	14	29	34	69	104	126	141	142	142	163
28	15	23	31	41	98	127	143	153	153	165	183
30	17	28	38	62	105	143	165	168	173	188	204
32	19	35	43	85	126	163	178	193	203	213	226
34	21	39	58	98	151	178	195	218	223	233	248
36	24	44	63	113	170	198	223	233	243	253	273
38	28	49	73	128	178	203	223	238	253	263	278
40	31	49	84	143	183	213	233	248	258	268	288
42	37	56	102	144	189	215	245	260	263	268	293
44	43	64	118	154	199	234	254	264	269	269	293
46	44	74	139	171	214	244	269	274	289	299	318
48	51	89	144	189	229	269	299	309	319	319	-
50	58	94	164	209	249	279	309	329	-	-	-

(4)

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Stage No.	Decompression Data Pressure Reduction Psig From	To	Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours				Minutes	Min/Pound	Minutes
14	1/2	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	1	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	1-1/2	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	2	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	3	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	4	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	5	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	6	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	7	1	14	4	2	0.20	
		2	4	0	14	3.50	16

	8	1	14	4	2	0.20	
		2	4	0	14	3.50	16
	Over 8	1	14	4	2	0.20	
		2	4	0	30	7.50	32
16	1/2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	1-1/2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	3	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	4	1	14	4	3	0.20	
		2	4	0	4	1.00	7
	5	1	14	4	3	0.20	
		2	4	0	14	3.50	17
	6	1	14	4	3	0.20	
		2	4	0	30	7.50	33
	7	1	14	4	3	0.20	
		2	4	0	45	11.25	48
	8	1	14	4	3	0.20	
		2	4	0	45	11.25	48
	Over 8	1	14	4	3	0.20	
		2	4	0	60	15.00	63
18	1/2	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	1-1/2	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	2	1	18	4	3	0.20	
		2	4	0	5	1.25	8
	3	1	18	4	3	0.20	
		2	4	0	8	2.00	11
	4	1	18	4	3	0.20	
		2	4	0	14	3.50	17
	5	1	18	4	3	0.20	
		2	4	0	45	11.25	48
	6	1	18	4	3	0.20	
		2	4	0	60	15.00	63
	7	1	18	4	3	0.20	
		2	4	0	60	15.00	63
	8	1	18	4	3	0.20	
		2	4	0	70	17.50	73
	Over 8	1	18	4	3	0.20	
		2	4	0	84	21.00	87
20	1/2	1	20	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	20	4	3	0.20	
		2	4	0	4	1.00	7
	1-1/2	1	20	4	3	0.20	
		2	4	0	5	1.25	8
	2	1	20	4	3	0.20	
		2	4	0	12	3.00	15
	3	1	20	4	3	0.20	
		2	4	0	12	3.00	15
	4	1	20	4	3	0.20	
		2	4	0	40	10.00	43
	5	1	20	4	3	0.20	
		2	4	0	60	15.00	63
	6	1	20	4	3	0.20	
		2	4	0	70	17.50	73
	7	1	20	4	3	0.20	
		2	4	0	80	20.00	83
	8	1	20	4	3	0.20	
		2	4	0	100	25.00	103
	Over 8	1	20	4	3	0.20	
		2	4	0	110	27.50	113
22	1/2	1	22	6	3	0.20	
		2	6	0	6	1.00	9
	1	1	22	6	3	0.20	
		2	6	0	6	1.00	9
	1-1/2	1	22	6	3	0.20	
		2	6	0	13	2.20	16
	2	1	22	6	3	0.20	
		2	6	0	21	3.50	24
	3	1	22	6	3	0.20	
		2	6	0	35	5.85	38
	4	1	22	6	3	0.20	
		2	6	0	65	10.83	68
	5	1	22	6	3	0.20	
		2	6	0	90	15.00	93
	6	1	22	6	3	0.20	
		2	6	0	100	16.67	103
	7	1	22	6	3	0.20	
		2	6	0	110	18.35	113
	8	1	22	6	3	0.20	
		2	6	0	125	20.80	128
	Over 8	1	22	6	3	0.20	
		2	6	0	130	21.70	133
24	1/2	1	24	3	3	0.20	
		2	8	4	4	1.00	
		3	4	0	4	1.00	11
	1	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	5	1.25	12

	1-1/2	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	16	4.00	23
	2	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	20	5.00	27
	3	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	45	11.25	52
	4	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	85	21.25	92
	5	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	110	27.50	117
	6	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	115	28.80	122
	7	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	120	30.00	127
	8	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	130	32.50	137
	Over 8	1	24	8	3	0.20	
		2	8	4	8	1.00	
		3	4	0	140	35.00	151
26	1/2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	4	1.00	13
	1	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	5	1.25	14
	1-1/2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	20	5.00	29
	2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	25	6.25	34
	3	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	60	15.00	69
	4	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	95	23.75	104
	5	1	26	10	3	0.20	
		2	10	4	8	1.33	
		3	4	0	115	28.80	126
	6	1	26	10	3	0.20	
		2	10	4	8	1.33	
		3	4	0	130	32.50	141
	7	1	26	10	3	0.20	
		2	10	4	9	1.50	
		3	4	0	130	32.50	142
	8	1	26	10	3	0.20	
		2	10	4	9	1.50	
		3	4	0	130	32.50	142
	Over 8	1	26	10	3	0.20	
		2	10	4	30	5.00	
		3	4	0	130	32.50	163
28	1/2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	4	1.00	15
	1	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	12	3.00	23
	1-1/2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	20	5.00	31
	2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	30	7.50	41
	3	1	28	12	3	0.20	
		2	12	4	10	1.25	
		3	4	0	85	21.20	98
	4	1	28	12	3	0.20	
		2	12	4	14	1.75	
		3	4	0	110	27.50	127
	5	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	120	30.00	143
	6	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	130	32.50	153
	7	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	130	32.50	153
	8	1	28	12	3	0.20	
		2	12	4	32	4.00	
		3	4	0	130	32.50	165
	Over 8	1	28	12	3	0.20	
		2	12	4	50	6.25	
		3	4	0	130	32.50	183
30	1/2	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	4	1.00	17
	1	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	15	3.75	28
	1-1/2	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	25	6.25	38
	2	1	30	14	3	0.20	
		2	14	4	14	1.40	
		3	4	0	45	11.25	62
	3	1	30	14	3	0.20	
		2	14	4	17	1.70	
		3	4	0	85	21.20	105
	4	1	30	14	3	0.20	
		2	14	4	30	3.00	
		3	4	0	110	27.50	143

	5	1	30	14	3	0.20	
		2	14	4	35	3.50	
		3	4	0	130	32.50	165
	6	1	30	14	3	0.20	
		2	14	4	35	3.50	
		3	4	0	130	32.50	168
	7	1	30	14	3	0.20	
		2	14	4	45	4.50	
		3	4	0	130	32.50	178
	8	1	30	14	3	0.20	
		2	14	4	55	5.50	
		3	4	0	130	32.50	188
	Over 8	1	30	14	3	0.20	
		2	14	4	71	7.10	
		3	4	0	130	32.50	204
32	1/2	1	32	16	3	0.20	
		2	16	4	12	1.00	
		3	4	0	4	1.00	19
	1	1	32	16	3	0.20	
		2	16	4	12	1.00	
		3	4	0	20	5.00	35
	1-1/2	1	32	16	3	0.20	
		2	16	4	15	1.25	
		3	4	0	25	6.25	43
	2	1	32	16	3	0.20	
		2	16	4	22	1.83	
		3	4	0	60	15.00	85
	3	1	32	16	3	0.20	
		2	16	4	28	2.33	
		3	4	0	95	23.75	126
	4	1	32	16	3	0.20	
		2	16	4	40	3.33	
		3	4	0	120	30.00	163
	5	1	32	16	3	0.20	
		2	16	4	45	3.75	
		3	4	0	130	32.50	178
	6	1	32	16	3	0.20	
		2	16	4	60	5.00	
		3	4	0	130	32.50	193
	7	1	32	16	3	0.20	
		2	16	4	70	5.83	
		3	4	0	130	32.50	203
	8	1	32	16	3	0.20	
		2	16	4	80	6.67	
		3	4	0	130	32.50	213
	Over 8	1	32	16	3	0.20	
		2	16	4	93	7.75	
		3	4	0	130	32.50	226
34	1/2	1	34	18	3	0.20	
		2	18	4	14	1.00	
		3	4	0	4	1.00	21
	1	1	34	18	3	0.20	
		2	18	4	14	1.00	
		3	4	0	22	5.50	39
	1-1/2	1	34	18	3	0.20	
		2	18	4	25	1.80	
		3	4	0	30	7.50	58
	2	1	34	18	3	0.20	
		2	18	4	35	2.50	
		3	4	0	60	15.00	98
	3	1	34	18	3	0.20	
		2	18	4	43	3.10	
		3	4	0	105	26.25	151
	4	1	34	18	3	0.20	
		2	18	4	55	3.93	
		3	4	0	120	30.00	178
	5	1	34	18	3	0.20	
		2	18	4	62	4.43	
		3	4	0	130	32.50	195
	6	1	34	18	3	0.20	
		2	18	4	85	6.07	
		3	4	0	130	32.50	218
	7	1	34	18	3	0.20	
		2	18	4	90	6.43	
		3	4	0	130	32.50	223
	8	1	34	18	3	0.20	
		2	18	4	100	7.15	
		3	4	0	130	32.50	233
	Over 8	1	34	18	3	0.20	
		2	18	4	115	8.23	
		3	4	0	130	32.50	248
36	1/2	1	36	20	3	0.20	
		2	20	4	16	1.00	
		3	4	0	5	1.25	24
	1	1	36	20	3	0.20	
		2	20	4	16	1.00	
		3	4	0	25	6.25	44
	1-1/2	1	36	20	3	0.20	
		2	20	4	30	1.88	
		3	4	0	30	7.50	63
	2	1	36	20	3	0.20	
		2	20	4	40	2.50	
		3	4	0	70	17.50	113
	3	1	36	20	3	0.20	
		2	20	4	52	3.25	
		3	4	0	115	28.75	170
	4	1	36	20	3	0.20	
		2	20	4	65	4.06	
		3	4	0	130	32.50	198
	5	1	36	20	3	0.20	
		2	20	4	90	5.63	
		3	4	0	130	32.50	223
	6	1	37	20	3	0.20	
		2	20	4	100	6.25	
		3	4	0	130	32.50	233
	7	1	36	20	3	0.20	
		2	20	4	110	6.88	
		3	4	0	130	32.50	243
	8	1	36	20	3	0.20	
		2	20	4	120	7.50	
		3	4	0	130	32.50	253

	Over 8	1	36	20	3	0.20	
		2	20	4	140	8.75	
		3	4	0	130	32.50	273
38	1/2	1	38	22	3	0.20	
		2	22	6	16	1.00	
		3	6	0	9	1.50	28
	1	1	38	22	3	0.20	
		2	22	6	16	1.00	
		3	6	0	30	5.00	49
	1-1/2	1	38	22	3	0.20	
		2	22	6	20	1.25	
		3	6	0	50	8.34	73
	2	1	38	22	3	0.20	
		2	22	6	30	1.88	
		3	6	0	95	15.83	128
	3	1	38	22	3	0.20	
		2	22	6	35	2.19	
		3	6	0	140	23.35	178
	4	1	38	22	3	0.20	
		2	22	6	50	3.12	
		3	6	0	150	25.00	203
	5	1	38	22	3	0.20	
		2	22	6	55	3.44	
		3	6	0	165	27.50	223
	6	1	38	22	3	0.20	
		2	22	6	70	4.38	
		3	6	0	165	27.50	238
	7	1	38	22	3	0.20	
		2	22	6	85	5.32	
		3	6	0	165	27.50	253
	8	1	38	22	3	0.20	
		2	22	6	95	5.93	
		3	6	0	165	27.50	263
	Over 8	1	38	22	3	0.20	
		2	22	6	110	6.88	
		3	6	0	165	27.50	278
40	1/2	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	4	1.00	
		4	4	0	8	2.00	31
	1	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	5	1.25	
		4	4	0	25	6.25	49
	1-1/2	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	20	5.00	
		4	4	0	45	11.25	84
	2	1	40	24	3	0.20	
		2	24	8	25	1.56	
		3	8	4	20	5.00	
		4	4	0	95	23.75	143
	3	1	40	24	3	0.20	
		2	24	8	30	1.88	
		3	8	4	30	7.50	
		4	4	0	120	30.00	183
	4	1	40	24	3	0.20	
		2	24	8	45	2.81	
		3	8	4	35	8.75	
		4	4	0	130	32.50	213
	5	1	40	24	3	0.20	
		2	24	8	47	2.94	
		3	8	4	53	13.25	
		4	4	0	130	32.50	233
	6	1	40	24	3	0.20	
		2	24	8	55	3.44	
		3	8	4	60	15.00	
		4	4	0	130	32.50	248
	7	1	40	24	3	0.20	
		2	24	8	65	4.06	
		3	8	4	60	15.00	
		4	4	0	130	32.50	258
	8	1	40	24	3	0.20	
		2	24	8	75	4.70	
		3	8	4	60	15.00	
		4	4	0	130	32.50	268
	Over 8	1	40	24	3	0.20	
		2	24	8	95	5.93	
		3	8	4	60	15.00	
		4	4	0	130	32.50	288
42	1/2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	6	1.00	
		4	4	0	12	3.00	37
	1	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	12	2.00	
		4	4	0	25	6.25	56
	1-1/2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	23	3.83	
		4	4	0	60	15.00	102
	2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	30	5.00	
		4	4	0	95	23.75	144
	3	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	50	8.34	
		4	4	0	120	30.00	189
	4	1	42	26	3	0.20	
		2	26	10	17	1.06	
		3	10	4	65	10.83	
		4	4	0	130	32.50	215
	5	1	42	26	3	0.20	
		2	26	10	27	1.69	
		3	10	4	85	14.18	
		4	4	0	130	32.50	245
	6	1	42	26	3	0.20	
		2	26	10	27	1.69	
		3	10	4	100	16.67	
		4	4	0	130	32.50	260
	7	1	42	26	3	0.20	
		2	26	10	30	1.88	
		3	10	4	100	16.67	
		4	4	0	130	32.50	263

	8	1	42	26	3	0.20	
		2	26	10	35	2.19	
		3	10	4	100	16.67	
		4	4	0	130	32.50	268
	Over 8	1	42	26	3	0.20	
		2	26	10	60	3.75	
		3	10	4	100	16.67	
		4	4	0	130	32.50	293
44	1/2	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	8	1.00	
		4	4	0	16	4.00	43
	1	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	20	2.50	
		4	4	0	25	6.25	64
	1-1/2	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	27	3.38	
		4	4	0	72	18.00	118
	2	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	40	5.00	
		4	4	0	95	23.75	154
	3	1	44	23	3	0.20	
		2	28	12	16	1.00	
		3	12	4	60	7.50	
		4	4	0	120	30.00	199
	4	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	85	10.62	
		4	4	0	130	32.50	234
	5	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	105	13.13	
		4	4	0	130	32.50	254
	6	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	115	14.38	
		4	4	0	130	32.50	264
	7	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	120	15.00	
		4	4	0	130	32.50	269
	8	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	120	15.00	
		4	4	0	130	32.50	269
	Over 8	1	44	28	3	0.20	
		2	28	12	40	2.50	
		3	12	4	120	15.00	
		4	4	0	130	32.50	293
46	1/2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	10	1.00	
		4	4	0	15	3.75	44
	1	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	25	2.50	
		4	4	0	30	7.50	74
	1-1/2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	35	3.50	
		4	4	0	85	21.20	139
	2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	47	4.70	
		4	4	0	105	26.25	171
	3	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	65	6.50	
		4	4	0	130	32.50	214
	4	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	95	9.50	
		4	4	0	130	32.50	244
	5	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	120	12.00	
		4	4	0	130	32.50	269
	6	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	125	12.50	
		4	4	0	130	32.50	274
	7	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	140	14.00	
		4	4	0	130	32.50	289
	8	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	150	15.00	
		4	4	0	130	32.50	299
	Over 8	1	46	30	3	0.20	
		2	30	14	25	1.56	
		3	14	4	160	16.00	
		4	4	0	130	32.50	318
48	1/2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	12	1.00	
		4	4	0	20	5.00	51
	1	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	35	2.92	
		4	4	0	35	8.75	89
	1-1/2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	45	3.75	
		4	4	0	80	20.00	144
	2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	60	5.00	
		4	4	0	110	27.50	189
	3	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	90	7.50	
		4	4	0	120	30.00	229
	4	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	120	10.00	
		4	4	0	130	32.50	269

	5	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	140	11.67	
		4	4	0	130	32.50	299
	6	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	160	13.33	
		4	4	0	130	32.50	309
	7	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	170	14.17	
		4	4	0	130	32.50	319
	8	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	170	14.17	
		4	4	0	130	32.50	319
50	1/2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	14	1.00	
		4	4	0	25	6.25	58
	1	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	40	2.86	
		4	4	0	35	8.75	94
	1-1/2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	55	3.93	
		4	4	0	90	22.50	164
	2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	70	5.00	
		4	4	0	120	30.00	209
	3	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	100	7.15	
		4	4	0	130	32.50	249
	4	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	130	8.58	
		4	4	0	130	32.50	279
	5	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	160	11.42	
		4	4	0	130	32.50	309
	6	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	180	12.85	
		4	4	0	130	32.50	329

DO NOT INTERPOLATE, USE NEXT HIGHER VALUE FOR CONDITIONS NOT COMPUTED

[Rules (Part IV E), filed 12/28/62; § 2, filed 3/23/60.]

WAC 296-36-125 Man locks. (1) **Use of man locks.** Except when prevented by an emergency, compressed air workers shall pass only through the man lock when passing into or out of a compressed air area. *Exception:* Caissons having a working area less than 150 square feet may use a combination material and man lock.

(2) **Size and capacity.** The head room in man locks shall be not less than 6 feet and their cubical content shall provide at least 30 cubic feet of air space for each person. The capacity shall be based upon such minimum space per person and shall be posted at the entrance to the lock. The posted capacity shall not be exceeded except in case of an emergency.

(3) **Equipment.** Each man lock shall be equipped with the following:

(a) A recording pressure gage, fixed to the exterior of the lock on the atmospheric pressure side, shall be installed for showing the rate of decompression. The gage dial and chart shall be of such size that the amount of rise or fall in air pressure within 5 minutes will be readily discernible. The gage shall be protected by a locked box from interference or damage. This requirement will not be necessary when working at pressures of 13 pounds per square inch or less.

(b) A clock or clocks suitably placed so that the man lock attendant and persons in the man lock can readily ascertain the time.

(c) A recording pressure gage whose chart shall be of sufficient size to register a legible record of variations in pressure within the working chamber. This gage shall be readily accessible to the lock attendant.

(d) Pressure gages which will indicate to the man lock attendant the pressure in the man lock and the pressure in each working chamber to which the man lock affords direct or indirect access and to persons in the man lock the pressure in the man lock.

(e) Valves to enable the lock attendant to reduce or cut off the supply of compressed air into the man lock.

(f) Valves and pipes in connection with the air supply and exhaust which shall be so arranged that the lock and pressure can be controlled from within and without.

(g) Effective means of verbal intercommunication between the man lock attendant and (1) persons in the man lock, (2) persons in any working chamber and (3) the air compressor plant, and also some means to enable persons in the lock to convey visible or other nonverbal signals to the lock attendant.

(h) A glass bulls-eye in each end of the lock to permit observation of the occupants.

(4) **Seating facilities.** The seating facilities in man locks shall be so arranged as to provide a normal sitting posture without cramping. Seating space not less than 22 inches in width shall be provided per occupant. *Exception:* In caissons having a working area less than 150 square feet, portable seats shall be provided in the combination material and man lock.

(5) **Lighting and heating.** Every man lock shall be lighted by electricity. The lighting intensity shall be a minimum of 30 foot-candles as currently recommended for waiting rooms by the illuminating engineers society. It shall also be provided with a system of radiant (infra-red) heating using electricity, steam or hot water for heating the radiant surface. The radiant surface shall be so located and protected as to prevent thermal burns. The chamber shall be heated to a minimum dry bulb temperature of 70 degrees F.

(6) **Ventilation.** A minimum ventilation rate of 20 cubic feet per minute of standard air at the prevailing ambient pressure in the lock shall be provided for each occupant. In no event shall the carbon dioxide concentration be permitted to rise above 0.5 percent by volume.

(7) **Record of decompression.** Where the pressure in the working chamber is 13 pounds or more, a record of all persons passing into or out of the working chamber shall be kept by a lock attendant who shall be stationed at the low pressure side of the man lock. Such record shall show the period of stay in the working chamber and the length of time of each decompression. Such record shall be signed by the medical officer and shall be kept on the job subject to inspection by the director of the state department of labor and industries or his authorized representative.

(8) **Automatic controls.** Each man lock shall be equipped with a suitable automatic control which through taped programs or cams or similar apparatus shall automatically regulate compressions and decompressions. It shall also be equipped with a timing device and such manual control as will enable the lock attendant to override the automatic mechanism in an emergency.

[Rules (Part V A), filed 12/28/62; §§ 3 and 4, filed 3/23/60.]

WAC 296-36-130 Special decompression chamber. (1) **General.** The special low-pressure decompression chamber shall be provided for use when the nature of the work requires decompression times and procedures clearly within the scope of WAC 296-36-110(4).

(2) **Size and capacity.** The headroom in the special decompression chamber shall be not less than 7 feet and the cubical content shall provide at least 50 cubic feet of air space for each person. For each occupant there shall be provided 4 square feet of free walking area and 3 square feet of seating space exclusive of area required for lavatory and toilet facilities. The rated capacity shall be based on the stated minimum space per person and shall be posted at the chamber entrance. The posted capacity shall not be exceeded except in case of emergency.

(3) **Equipment.** Each special decompression chamber shall be equipped with the following:

(a) A clock or clocks suitably placed so that the attendant and the chamber occupants can readily ascertain the time;

(b) Pressure gages which will indicate to the attendant and to the chamber occupants the pressure in the chamber;

(c) Valves to enable the attendant to reduce or cut off the supply of compressed air into the chamber;

(d) Valves and pipes in connection with the air supply and exhaust arranged that the chamber pressure can be controlled from within and without;

(e) Effective means of verbal intercommunication between the attendant, occupants of the chamber and the air compressor plant;

(f) A glass bulls-eye at the entrance to permit observation of the chamber occupants.

(4) **Seating facilities.** Seating facilities in special decompression chambers shall be so arranged as to permit a normal sitting posture without cramping. Seating space not less than 18 inches by 24 inches in width shall be provided per occupant. Seat and back shall be padded or cushioned with a one-inch thickness of foam rubber or its equivalent.

(5) **Lighting and heating.** Lighting and heating shall comply with that for man locks, WAC 296-36-125(5).

(6) **Ventilation.** Ventilation shall comply with that for man locks, WAC 296-36-125(6).

(7) **Record of decompression.** Final stage decompression in the special chamber shall be part of the records required by WAC 296-36-125(7).

(8) **Automatic controls.** Special decompression chambers shall be equipped with automatic controls complying with WAC 296-36-125(8), for man locks.

(9) **Sanitation.** One toilet and one wash basin with hot and cold water in a screened or enclosed recess shall be provided for each 10 units of rated capacity as defined in WAC 296-36-130(2). An adequate supply of disposable towels, drinking water and disposable cups shall be provided. No refuse or discarded material of any kind shall be permitted to accumulate and the chamber shall be kept clean.

(10) **Location.** Where practicable the special decompression chamber shall be situated adjacent to the man lock on the atmospheric pressure side of the bulkhead. When located adjacent to the man lock a passageway shall be provided connecting the special chamber with the man lock to permit workmen in the process of decompression to move from the man lock to the special chamber without a reduction in the ambient pressure from that designated for the initial pressure of the final stage of decompression. The passageway shall be so arranged as to not interfere with the normal operation of the man lock nor with the release of the occupants of the special chamber to atmospheric pressure upon the completion of the decompression procedure.

In event that the special chamber is located remote from the man lock a means of pressurized transport shall be provided to move the men from the man lock to the special chamber without a reduction in the ambient pressure from that designated for the initial pressure of the final stage of decompression.

Under unusual circumstances or in an emergency and only with the express permission of the appointed physician, decanting procedures may be used to facilitate the movement of men at atmospheric pressure from the man lock to the special decompression chamber for the final stage of decompression. RECOMPRESSION OF THE MEN MUST TAKE PLACE WITHIN FIVE MINUTES IN THE SPECIAL CHAMBER. THE MEDICAL LOCK SHALL NOT BE USED FOR THE RECOMPRESSION.

(11) **Design.** The special decompression chamber and passageway or pressurized transport shall be designed for an operating pressure of 20 pounds per square inch gage pressure.

(12) **Fire protection.** All applicable provisions of WAC 296-36-190, fire prevention and fire fighting shall apply to special decompression chambers.

[Rules (Part V B), filed 12/28/62.]

WAC 296-36-132 Lock attendants. (1) Whenever any workman is in a man lock or in a working chamber to which the man lock affords direct or indirect access, each working man lock shall be in the charge of a competent lock attendant who shall perform no other duties except to operate the lock and shall be employed the same number of hours as the other employees working in compressed air. The lock attendant shall control the maximum rate of compressions and shall perform all decompressions except where such compressions and decompressions are automatically regulated, but in such case the lock attendant shall have means to

determine the pressures within the lock and working chamber at any time, and shall have also a timing device and such manual controls as will enable him to override the automatic mechanism in an emergency.

(2) Subject to the overall control by the lock attendant of the admission of compressed air into the lock, he may, if so authorized by the appointed physician, allocate to a competent person who is to be compressed in the lock, the duty to regulate from inside the lock the admission of compressed air, and duty to communicate to the lock attendant any complaint of discomfort by a workman in the lock and any report by that workman that the discomfort has ceased.

(3) Man lock attendants shall be under the direct supervision, control, discipline and training of the appointed physician and each man lock attendant shall be the holder of an unexpired first-aid certificate from the Red Cross, U.S. Bureau of Mines, or the Department of Labor and Industries. Lock attendants shall receive their wage payments directly from the head office of the employer and shall not be carried on or subject to the payroll procedures of the local office. A lock attendant shall not be relieved of his duties or discharged without consulting the appointed physician nor without the physician's assent.

[Rules (Part VI), filed 12/28/62; § 4, filed 3/23/60.]

WAC 296-36-135 Regulation of pressure and air quality in working areas—Gage tender. There shall at all times be a thoroughly experienced competent and reliable person on duty at the air control valves as a gage tender who shall regulate the pressure in the working areas. No gage tender shall be on duty more than 8 hours in any 24. During tunneling operations, one gage tender may regulate the pressure in not more than two headings provided that the gages and controls are all in one location. In caisson work there shall be a gage tender for each caisson.

[Rules (Part VII A), filed 12/28/62; Rule 303, filed 3/23/60.]

WAC 296-36-140 Regulation of pressure and air quality in working areas—Pressure monitoring. (1) **High pressure.** Every compressed air line used to maintain pressure in working areas shall have a pressure gage attached at a point in the immediate vicinity of the control valves to show the pressure on the high pressure side of the control valves. Such gages shall be so located and illuminated as to be easily read by the operator and shall be of such size and so graduated as to show clearly a change in pressure of one pound.

(2) **Back pressure.** Back pressure gages to show the pressure in the working areas shall be located on the low pressure side of the bulkhead, in the superintendent's office, at the air control valves and in the power house. Back pressure gages shall be maintained in accurate working order and shall be tested at least once every 24 hours and a record shall be kept of each such test. In addition to the foregoing back pressure gages, a continuous recording back pressure gage shall be installed to provide a record of variations and pressure in the working chamber. The record shall be kept in the superintendent's office and be available for inspection by the director of the state department of labor and industries. *Exception:* Caissons having a net working area less than 150 square feet shall have back pressure gages installed on the low pressure side of the caisson and at the air control valves.

[Rules (Part VII B), filed 12/28/62.]

WAC 296-36-145 Regulation of pressure and air quality in working areas—Air quality in working areas. (1) **Ventilation.** An automatic air quality monitoring system acceptable to the director, department of labor and industries, shall be installed in the pressurized working chamber and shall at all times be maintained in proper working condition. The system shall provide continuous sampling and monitoring of the air and shall indicate by visual and audible alarm the presence of dangerous air contaminants in excess of the following:

Carbon monoxide	0.01%	100 ppm
Carbon dioxide	0.50%	5000 ppm
Oxides of nitrogen	0.0005%	5 ppm
Methane	0.25%	2500 ppm
Hydrogen sulphide	0.002%	20 ppm

The director in his discretion may change these concentrations to conform with good practices as recommended by the American Conference of Governmental Industrial Hygienists.

The system shall also indicate and give alarm at any time the oxygen content is less than 19.5 percent.

The system shall be so arranged that the visual and audible alarm will give warning in the working chamber and at the lock tender's station at the low pressure side of the locks.

In addition to the specific requirements contained in these standards of safety chapter 296-62 WAC shall apply for rock dust and ventilation.

(2) **Protection against atmospheric containments:** The requirements of chapters 296-62 and 296-155 WAC, Part Q shall apply.

[Statutory Authority: Chapter 49.17 RCW. 90-17-051 (Order 90-10), § 296-36-145, filed 8/13/90, effective 9/24/90; Rules (Part VII C), filed 12/28/62; § 25, filed 3/23/60.]

WAC 296-36-150 Air supply. (1) **Clean air.** Compressed air supplied to working area shall not contain quantities of harmful or offensive air contaminants exceeding the limits set forth hereinbefore.

(2) **Amount.** Nor less than 30 cubic feet per minute per man, measured at the prevailing working chamber pressure, of outside air shall be supplied to the working areas under pressure.

(3) **Supply lines.** In addition to the compressed air lines supplying working areas under pressure, there shall be a second such line of the same size and similarly equipped which shall be maintained ready for immediate use between the working chamber side of the bulkhead and the compressed air source in case of failure of the first line.

(4) **Point of discharge.** The point of discharge of the supply line in use shall be as close to the working face as is practicable and the discharge end of both supply lines shall be provided with a check valve.

(5) **Air outlet or exhaust line.** Air outlet lines from areas under pressure shall be properly located so that injurious gases may be promptly removed. Such lines shall be provided with suitable valves.

(6) **Air tools.** The high pressure air supplied for air-operated tools, equipment and appliances shall comply with the quality requirements contained in WAC 296-36-145, Air quality in working areas.

[Rules (Part VIII), filed 12/28/62; Rule 2009, filed 3/23/60.]

WAC 296-36-155 Compressor plant. (1) **Capacity.** The capacity, arrangement and number of compressors shall be sufficient to maintain the necessary pressure without overloading the equipment and to assure maintenance of such pressure in the working chamber during periods of breakdown or other emergency. The compressor installation shall be capable of delivering not less than 50 cubic feet per minute of ventilating air for each man in the working chamber at the prevailing working chamber pressure. Additional stand-by compressor units shall be installed in accordance with the following tabulation:

Normal installation at 50 C.F./Man/Min. units	Stand-by units	Total units	Percent rated total capacity of stand-by units divided by normal units
1	1	2	100
2	2	4	100
3	2	5	67
4	2	6	50
5	2	7	40

(2) **Sources of power.** Where the power is generated on the job there shall be a sufficient number of power units to maintain the necessary compressor operation.

(3) **Power feeders.** Where power is obtained from a public utility there shall be at least two feeders to the compressor plant. Each feeder shall have a capacity sufficient to carry the entire load and normal overload. The feeders shall run over separate routes in such a way that a breakdown of one feeder will not cause any interruption of power from the other feeder. Each feeder or service extension shall enter the compressor plant through a separate and independent opening.

(4) **Bus bar connections.** There shall be duplicate feeder bus bars at the compressor plant. Feeder connections to the bus bar shall be such that either feeder can feed to each bus bar separately or simultaneously to both bus bars. The electrical connections from the bus bars to the compressor shall be arranged in such a way as to insure continuous operation of the compressor plant, in spite of any breakdown of an individual feeder, bus bar or compressor unit.

(5) **Alternate sources of power.** Any combination of power either generated at the job or generated off the job as set forth above, and which complies with the above requirements is permitted.

(6) **Maintenance.** All equipment including reserve sources of power and reserve compressor equipment used to maintain pressure in working areas shall at all times be maintained in good repair and ready for use. All reserve equipment shall be periodically inspected and shall be operated for a period of one hour or more at least once in every week, except where there is danger of sudden flooding, in which case reserve equipment shall be operated at least one hour in every 24 hours. An ample supply of spare parts shall be kept on hand.

[Rules (Part IX), filed 12/28/62; § 12, filed 3/23/60.]

WAC 296-36-160 Personnel facilities. (1) **General.** There shall be provided on every job a change house which shall have a dressing room and separate spaces for each of the following: drying clothes, shower baths, toilet facilities and rest room with seating facilities and tables.

(2) **Maintenance.** The change house shall be kept clean throughout.

(3) **Dressing room.** The dressing room shall be provided with benches and a full length metal or other approved noncombustible locker with facilities for locking for each compressed air worker.

(4) **Clothes drying.** Facilities for drying clothing shall be installed and sufficient heat shall be provided to dry the clothing within 12 hours.

(5) **Toilet facilities.** One toilet and one urinal shall be provided for every 8 men or part thereof employed on each shift.

(6) **Shower baths.** Shower baths with hot and cold water shall be installed in the change house in sufficient number to provide one unit for every 8 men coming off shift.

(7) **Wash basins.** At least one wash basin with hot and cold running water or equivalent facilities at wash fountains shall be provided for every 8 men coming off shift.

(8) **Temperature.** A minimum temperature of 72 degrees F. shall be maintained in the dressing room, wash room and bathroom.

(9) **Coffee.** A sufficient supply of hot coffee, cream, milk and sugar shall be supplied to men working in compressed air at the termination of shifts and during rest periods. Coffee shall be heated by means other than direct steam. Coffee containers shall be kept clean and covered. Unless drinking cups are of the single service type, individual cups shall be sterilized after each use.

(10) **Eating space underground.**

(a) General. Suitable eating space shall be provided in the working chamber in the event that established working periods are of sufficient length to normally include a meal time interval. *Exception:* This requirement is not applicable to caisson work.

(b) Facilities.

(i) Space requirements. The space provided shall have a minimum head room of 6 feet 6 inches and a minimum area of 6 square feet shall be provided per person occupying the space at any one time.

The area shall be dry and clean, shall be lighted, heated and ventilated in accordance with WAC 296-36-125 (5) and (6), man locks.

(ii) Equipment. The space shall be equipped with tables and comfortable seating facilities providing seating space not less than 22 inches in width per occupant; disposable towels; washing facilities with hot and cold water or in lieu thereof acceptable dry-cleansing tissues; and space outside the immediate eating area for the removal and temporary storage of protective clothing. Portable equipment, acceptable to the supervisor of safety, department of labor and industries,

which may be moved into the working chamber and removed therefrom, may be provided.

[Rules (Part X), filed 12/28/62; § 21, filed 3/23/60.]

WAC 296-36-165 Sanitation below ground. (1) **Toilet facilities.** At least one approved chemical toilet shall be provided in the working chamber. Such facilities shall be maintained in a sanitary condition and shall be used by the workers.

(2) **Housekeeping.** No refuse or discarded material of any kind shall be permitted to accumulate underground. The man lock shall be kept clean.

(3) **Drinking water.** An ample supply of clean and potable drinking water shall at all times be available in working areas. Where water is supplied in containers it shall be kept covered. The use of common drinking cups is prohibited.

[Rules (Part XI), filed 12/28/62; § 21, filed 3/23/60.]

WAC 296-36-170 Stairs and ladders. The requirements of chapter 296-155 WAC Parts K and J shall apply.

[Statutory Authority: Chapter 49.17 RCW. 90-17-051 (Order 90-10), § 296-36-170, filed 8/13/90, effective 9/24/90; Rules (Part XII), filed 12/28/62.]

WAC 296-36-175 Lighting and power equipment. (1) **All lighting underground shall be by electricity.**

(a) Lighting shall comply with chapter 296-155 WAC.

(b) Power equipment shall comply with chapter 296-155 WAC.

(2) **Emergency lighting.** The lighting circuits shall be connected to two independent sources of power supply. In addition to the lighting circuit, adequate and sufficient portable electric emergency lights shall be provided and maintained for immediate use. These shall be readily accessible to all employees working underground.

(3) **Lamp sockets.** The exterior of all lamp sockets shall be of nonmetallic material and all sockets shall be of the weatherproof type.

(4) **Location of lamps.** Lamps shall be so placed that they cannot come into contact with combustible materials and so that a clear space is provided all around.

(5) **Lamp guards.** All lamps shall be protected with wire cage guards.

[Statutory Authority: Chapter 49.17 RCW. 90-17-051 (Order 90-10), § 296-36-175, filed 8/13/90, effective 9/24/90; Rules (Part XIII), filed 12/28/62; § 6, filed 3/23/60.]

WAC 296-36-180 Signals and means of communication. (1) Effective and reliable signaling devices shall be maintained at all times to give instant communication between the bottom and top of shaft, and where considered necessary by the safety division, dual independent signal systems shall be installed.

(2) Special care shall be taken to keep the signaling apparatus in good order, and all proper precautions shall be taken to prevent electric signal and telephone wires from coming into contact with other electric conductors, whether insulated or not.

(3) Where it is necessary to use signals by means of bell or otherwise for hoisting or lowering, the following code shall be used:

Any code of signals used shall be printed and copies thereof shall be kept posted in a conspicuous place near entrances to work places and in such other places as may be necessary to bring them to the attention of all persons concerned.

1 bell:	Stop immediately if in motion.
2 bells:	Lower.
3-1 bells:	Hoisting men, run slowly.
3-2 bells:	Lowering men.
1-1 bells:	To hoist muck.
2-1-2 bells:	Release cage, skip, or bucket.
4 slow bells:	Blasting signal. (This is a caution signal and if the hoist operator is prepared to accept it he must acknowledge it by raising cage, skip or bucket a few feet then lowering it again. After accepting this signal, hoist operator must be prepared to hoist men away from blast as soon as signal 3-1 bells are given and must accept no other signal in the meantime.)
5 bells:	Water on or off.
6 bells:	Air on or off.
9 bells:	Danger signal (fire, accident or other danger), followed by station signal, calls cage, skip, or bucket to that station. This signal takes precedence over all others except an accepted blasting signal.

(4) Where tunnels are driven from shafts more than two hundred fifty feet deep, a telephone system shall be established and maintained, communicating with the surface at each such shaft, and with a station or stations readily and quickly accessible to the men at the working level.

[Statutory Authority: Chapter 49.17 RCW. 90-17-051 (Order 90-10), § 296-36-180, filed 8/13/90, effective 9/24/90; Rules (Part XIV), filed 12/28/62.]

WAC 296-36-185 Explosives—Blasting. (1) **Storage and supply.** Explosives including detonators shall not be stored or kept underground. The supply for each blast shall be taken directly from above ground to the face and immediately loaded. All explosives remaining after loading a round shall be removed to the magazine before the leading wires are connected.

(2) **Explosives in air locks.** While explosives are being locked through a tunnel bulkhead, the detonators and explosives shall be placed at the opposite ends of the lock and no person, other than the lock tender and those persons necessary for carrying, shall be permitted in the lock. No other material or equipment shall be locked through with explosives.

Explosives and detonators shall be taken separately into caissons.

(3) **Carrying containers.** Explosives other than detonators shall be conveyed in a suitable covered wooden box painted red and provided with handles. Detonators shall be

conveyed in a separate covered wooden box, painted red with a one-inch yellow stripe running horizontally entirely around the box. The box shall be provided with handles.

(4) **Blaster.** The blaster shall be a person designated by the superintendent and shall be in charge of all operations connected with preparations for blasting and shall fire all shots.

(5) **Duties of the blaster.** Before removing any explosives from the carrying containers, the blaster shall verify

(a) That the blasting switch is in "off" position and that its box is locked;

(b) That the "gap" in the blasting circuit is open; (Note: A gap of at least 5 feet on the incoming side of the switch, except during the firing operation, when connections at such gap are to be made by means of plugs, is required.)

(c) That the heading gang has been withdrawn to a safe distance or to a safe shelter, except such men from the gang as the blaster may direct to remain with him to assist in loading under his directions; and

(d) That all light and power circuits have been disconnected at a point not less than 100 feet from the place to be blasted. The blaster shall direct the loading of all holes and the making of the necessary connections in the blasting circuit; he shall sound a warning signal distinctly audible in any part of the working chamber, shield or any drift ahead of the shield where any person remaining would be exposed to injury from the blast.

(6) **Vacating blasting area.** All persons shall promptly vacate the blasting area when so directed by the blaster. When the blaster is satisfied that all persons have vacated the blasting area, he, alone, shall unlock the box that contains the blasting switch and fire the blast.

(7) **Return to blasting area.** No person shall return to the blasting area until the air in such area has been cleared of injurious concentrations of toxic fumes. The blaster shall be the first to return to the heading. He shall examine the effects of the blast and investigate the matter of possible misfires and he, alone, shall give the signal for the return of the workmen to the heading and for the restoration of light and power in the blasted area.

(8) **Hand lamps and cap lamps.** Electric hand lamps and cap lamps used by the blaster or his helpers or by any other person in the working chamber during the blasting operation shall be approved.

(9) **Blasting circuits.** All circuits used for blasting shall be ungrounded circuits. Damaged leading wires shall not be used.

[Rules (Part XV), filed 12/28/62; § 14, filed 3/23/60.]

WAC 296-36-190 Fire prevention and fire fighting. (1) **General.** Every building and every flammable structure above ground and all places underground shall be within easy range of fire fighting equipment, which shall at all times be maintained in proper working conditions and ready for use.

(2) **Smoking.** No person shall smoke or carry lighted smoking materials in compressed air. No matches, mechanical or chemical igniters will be permitted in the working chamber except those necessary for welding or flame cutting operations.

(3) **Welding or flame cutting.** While welding or flame cutting is being done in compressed air, a watchman with a fire hose or approved extinguisher shall stand by until such operation is completed. Acetylene shall not be used in compressed air at acetylene pressure exceeding 15 pounds per square inch gage, or 30 pounds per square inch absolute.

(4) **Fire hose.** Fire hose shall be at least 1-1/2 inches in nominal diameter; the water pressure shall at all times be adequate for efficient operation of the type of nozzle used; and the water supply shall be such as to insure an uninterrupted flow. Fire hose when not in use shall be so located or guarded to prevent injury thereto.

Every power house, compressor house and every building housing ventilating equipment shall be provided with at least one hose connection in the water line with the fire hose connected thereto. A fire hose shall be maintained within easy reach of structures of wood over or near shafts.

(5) **Shafts and caissons.** Every shaft and every caisson containing flammable material of any kind, either above or below ground, shall be provided with a water line and a fire hose connected thereto, so arranged that all points of the shaft or caisson are within easy reach of the hose stream.

(6) **Tunnels.** Every tunnel shall be provided with a water line extending into the working chamber and to within 100 feet of the working face. Such lines shall have hose outlets with 100 feet of fire hose properly attached and maintained as follows: One at the working face, one immediately inside of the bulkhead of the working chamber, and one immediately outside such bulkhead. In addition, hose outlets shall be provided at 200-foot intervals throughout the length of the tunnel and 100 feet of fire hose shall be attached to the outlet nearest to any location where flammable material is being kept or stored or where any flame is being used.

(7) **Fire extinguishers.** In addition to required fire hose protection, on every floor of every building used in connection with compressed air work, there shall be provided at least one extinguisher of adequate size approved for the class of hazard involved, except that extinguishers containing carbon tetrachloride or methyl bromide shall not be used. Extinguishers shall be so located as to be readily available and protected from damage.

[Rules (Part XVI), filed 12/28/62; § 7, filed 3/23/60.]

WAC 296-36-195 Special provisions for tunnels. (1) **Bulkheads.** The bulkheads separating the working chamber from areas of lower pressure shall be of sufficient strength to withstand safely the maximum pressure to which it may be subjected. Where there is a possibility of rapid flooding of the working chamber, such as might be present in subaqueous tunnels, the bulkhead shall be located sufficiently close to the face or shield to permit escape of the workers in case of an emergency. But in no case where there is such possibility shall such distance be more than 300 feet.

(2) **Safety curtain or screens.** Where danger of a blow or an in-rush of water exists in tunnels 12 feet or more in clear height, and the elevation of the top of the lining at the face and of the completed tunnel back to the emergency lock are such that a safety curtain will afford protection to the workman, a safety curtain shall be provided. It shall be

located where it will afford the maximum of protection in case of an emergency but not impracticably close to the face.

Safety curtains shall be of incombustible material and shall be installed in the crown of the tunnel. They shall provide an airtight seal with the tunnel lining and shall be properly reinforced and braced as may be necessary. Curtains or screens shall be installed at right angles to the axis of the tunnel with the bottom edge horizontal. In tunnels up to and including 24 feet in inside clear height, the safety curtain shall extend down to the center line of the tunnel. In tunnels over 24 feet inside clear height, it shall extend at least 12 feet below the inside clearance line of the roof of the tunnel.

(3) **Walkways.** In tunnels 16 feet or more in diameter, containing safety curtains or screens, hanging walkways shall be provided from the face to the man lock and shall be installed as high in the tunnel as is practicable. Such walkway shall be installed above the tunnel floor and shall have at least 6 feet of head room above the walkway. A railing 42 inches high and a toe board shall be securely installed throughout the length of walkways on open sides. In areas under pressure, the walkways, stairways, and ladders including railings shall be of incombustible material.

(4) **Maintenance of walkways.** Walkways and the stairs or ladders leading thereto shall be at all times maintained clear, in good repair, and in a condition to carry safely the loads to which they may be subjected.

(5) **Ramps.** Walkways shall be provided with ramps under safety screens. Such ramps shall be provided with cleats.

(6) **Man lock and material lock.** Every tunnel shall have at least two locks in proper working condition, one of which shall be used as a material and equipment lock and the other used exclusively as a man lock.

(7) **Emergency man lock.** In subaqueous tunnels where space permits, there shall be in addition to the man lock and the material lock, an emergency man lock which shall be large enough to hold an entire heading shift and which shall be kept open toward the face and maintained ready for use at all times.

(8) **Location of locks.** Man locks and emergency locks shall be located as high in the tunnel as space will permit but the emergency lock shall be located in the crown of the tunnel.

(9) **Track safeties and brakes.** An automatic stop block or derailing device shall be provided at the top of every slope or incline greater than 3 percent. In addition, such a device shall be installed at a point not less than 150 feet nor more than 200 feet upgrade from any point where runaway cars may cause damage to the shield or air lock. A holding device shall be provided for cars used on inclines. Such device shall be set in the holding position during loading.

[Rules (Part XVII), filed 12/28/62; §§ 10 and 18, filed 3/23/60.]

WAC 296-36-200 Special provisions for caissons. (1) **Number of locks.** Every caisson shall have at least two locks, one of which shall be used exclusively as a man lock. *Exception:* Caissons having a working area less than 150 square feet may have a single or combined man and material lock.

(2) **Location of man locks.** The bottom of the lowest door opening of locks shall not be less than 3 feet above the water level being controlled by the use of compressed air.

(3) **Lock platforms.** All caisson locks located above ground shall be provided with an exterior platform not less than 42 inches wide with stairs or ladders leading thereto. The platform and stairs shall have a substantial handrail with midrail and the platform shall have toeboards at least 4 inches high.

(4) **Ladderways and stairways in man shafts or shafting.** Ladderways or stairways shall be provided and shall be kept clear and in good condition. Stairways shall be lighted at every landing and ladderways shall be lighted at 10-foot intervals with guarded incandescent lamps. Ladders and landings shall be of incombustible material. Pockets in the wall of the shaft shall not be used in lieu of ladders. In caissons having a working area more than 150 square feet, the man shafts shall be separated from the hoisting shaft by a barrier. Where the man shaft is separated from the hoisting shaft, the ladderways shall be provided with platform landings at intervals not exceeding 15 feet. In caissons having a working area less than 150 square feet, the ladder shall be recessed to prevent interference between the bucket and the ladder.

(5) **Hoisting.** No person shall ride on a loaded car, cage or bucket. Where the ladderway and hoistway are not separated by a barrier, no hoisting shall be done while any person is ascending or descending the ladder, nor shall any person enter the shaft while the hoisting conveyance is in motion. Standard warning signals shall be provided and shall be given and acknowledged to affect compliance with this provision.

(6) **Shoring.** Where the bottom of the excavation is below the cutting edge of the caisson and there is danger of a cave-in, the sides of the excavation shall be securely shored.

[Rules (Part XVIII), filed 12/28/62; § 17, filed 3/23/60.]

WAC 296-36-210 Medical supervision and medical and first-aid facilities—Medical supervision. (1) **Appointed physician.** Where workmen are employed in compressed air, their employer shall make arrangements for their medical supervision by one or more licensed physicians trained in the physical requirements and the medical aspects of compressed air work and the treatment of decompression illness. The employer shall arrange for medical examination of all workmen employed in compressed air at a suitable place or places by the appointed physician in accordance with these regulations. The appointed physician or physicians shall be immediately available in case of emergency or accident. Each appointed physician shall be physically qualified to subject himself to a compressed air environment.

(2) **Appointed physician's duties and responsibilities.**

(a) General. All matters on the job pertaining to the health of employees, treatment on the job of illness and injuries, special first-aid and nursing personnel or assistants, lock attendants, and medical and first-aid equipment shall be under the supervision of the appointed physician.

(b) He shall make all required physical examinations.

(c) He shall make and sign all required reports of such examinations using the forms provided by the department of labor and industries.

(d) He shall make at least one inspection on the job every day of all treatment records and the required decompression record and he shall inspect or inquire into conditions which may constitute a potential hazard to the health of any employee.

(3) **Certified medical attendant.** There shall be on every job a certified medical attendant trained to the satisfaction of the appointed physician in administering first aid on compressed air jobs, and who shall be in attendance in the first-aid room while work in compressed air is going on and at such other times as the physician may direct. The medical attendant shall be in personal charge of the administration of first aid and such other duties as physician may direct. Under no circumstances shall female medical attendants be subjected to a compressed air environment.

(4) **First-aid personnel.**

(a) The superintendent and every foreman and at least one additional designated person on each shift below ground shall be trained to the satisfaction of the appointed physician in administering first aid.

(b) Where more than 10 but less than 50 men are employed per shift underground, there shall be at least 2 such additional designated trained persons on the job and available on call.

(c) Where more than 50 men are employed per shift underground, the designated trained personnel shall include all shift bosses and time keepers in addition to those required in subsection (b) above.

(d) All designated first-aid personnel shall have in their possession current first-aid certificates acceptable to the department of labor and industries.

(5) **First-aid meetings.** All designated first-aid personnel shall meet at least once in each 3 months or oftener if directed by the physician for further first-aid instruction by the physician.

(6) **First-aid room and equipment.** The employer shall provide a first-aid room properly heated and maintained within 100 yards of the principal entrance to the underground work. It shall be equipped with a first-aid kit, medical supplies and equipment consisting of not less than the minimum requirements listed in chapter 296-155 WAC, Part B-1.

(7) **First-aid equipment underground.** All the equipment and supplies which the appointed physician may deem necessary for first-aid underground shall be provided and maintained readily available in a suitable cabinet or cabinets. A list of the contents signed by the appointed physician shall be permanently attached to the inside of the cabinet door or cover. The cabinet shall be plainly marked with a red cross and the words "first aid."

In caissons, one such cabinet shall be conveniently located in the working chamber.

In tunnels where a bulkhead is installed, one such cabinet shall be located on each side of the bulkhead near the entrance to the man lock.

In tunnels having no bulkhead, one such cabinet shall be located within 100 yards of the working face.

[Statutory Authority: Chapter 49.17 RCW. 90-17-051 (Order 90-10), § 296-36-210, filed 8/13/90, effective 9/24/90; Rules (Part XIX A), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-215 Medical supervision and medical and first-aid facilities—Medical locks. (1) **Requirement and location.** When the pressure in a working chamber exceeds 13 pounds per square inch gage, a suitably constructed medical lock shall be provided and maintained and used solely for the treatment and examination of workmen working in compressed air. It shall be situated adjacent to a medical emergency room but separated therefrom to provide privacy for patient and doctor during treatment or examination.

(2) **Design and equipment.**

(a) The medical lock shall have not less than 6 feet of clear head room and shall consist of not less than two compartments so that the lock can be entered while under pressure. It shall be adequately ventilated, air conditioned, heated and lighted and be constructed and finished as to be readily kept in a clean and sanitary condition.

(b) The medical lock shall be designed for an operating pressure of 75 pounds per square inch gage pressure.

(c) It shall be equipped with pressure gages readily observed from inside and outside of the medical lock indicating the pressure on the inside of the lock.

(d) The air line supplying the medical lock shall be equipped with valves so arranged that the pressure may be controlled from inside or outside the lock.

(e) Oxygen inhalation apparatus shall at all times be maintained ready for use in the lock, but the source of supply shall be located outside of the lock. Oxygen and oxy-helium mixtures shall not be used until proper diagnosis is made by the appointed physician and shall be used only under his direction and supervision. The air compressing plant used for supplying compressed air to the medical lock shall have sufficient capacity to raise the pressure in the medical lock from zero pounds to 75 pounds per square inch gage within 5 minutes and shall be equipped to prevent excessively high temperature within the lock. The temperature within the lock shall not exceed 90 degrees F. at 75 pounds per square inch gage pressure.

(f) The medical lock shall be provided with suitable equipment including a couch not less than 6 feet in length, blankets, food lock, efficient means of verbal communication and of giving nonverbal signals between the inside and outside of the lock, and between the two compartments, and a window or windows through which workmen in either compartment can be observed from outside. Telephone communications shall be provided between the inside and outside of the medical lock. The telephone circuits shall, however, be so arranged that completion of calls originating inside the lock and destined for subscribers of the commercial communication system or calls the origin of which is from a subscriber of the commercial communication system and destined for the medical lock, must be completed by the lock attendant.

(g) All necessary apparatus, instruments, medical supplies and equipment as required by the appointed physician shall be kept in the lock at all times.

(3) **Use of medical lock.**

(a) The medical lock shall be kept ready for immediate use and, when any workman is actually employed in compressed air, shall be constantly in charge of a person trained in the use of a medical lock and suitably instructed as to the steps to be taken in the event of any workman suffering ill effects from compressed air.

(b) No workman shall enter or be treated in the medical lock in which pressure exists except at the direction of the appointed physician for the purpose of examination as to medical fitness or for the purpose of diagnosis of a suspected illness, or for treatment of the condition diagnosed by the appointed physician.

[Rules (Part XIX B), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-220 Medical supervision and medical and first-aid facilities—Decompression illness—Symptoms and treatment. Every compressed air worker, upon noticing any symptom of decompression illness and wherever he may be, on the job or off the job, shall proceed immediately to the first-aid room for examination and treatment. Treatment shall be rendered promptly as directed by the appointed physician. Recompression, if prescribed by the appointed physician, shall be as the appointed physician may direct. After such treatment, the worker shall return to work only as and when directed by the physician.

[Rules (Part XIX C), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-225 Medical supervision and medical and first-aid facilities—Decompression illness to be reported. Every case of decompression illness shall be reported by the physician to the _____. Distribution of the report shall be as directed by the _____. Responsibility for supervision of treatment and accuracy of the report shall rest with the physician.

[Rules (Part XIX D), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-250 Routine examination of employees—Preemployment examinations and reports. (1) Every person considered for work in compressed air on any job and before starting work shall be given a thorough medical and physical examination by the appointed physician who shall order special tests when deemed necessary. The physician's findings shall be entered on a form entitled "preemployment history" and a form entitled "physical examination" furnished by the department of labor and industries. A copy of his recommendation as to employability shall be submitted to the superintendent and shall be kept on the job. The physical examination shall include adequate X-rays to determine possible preexisting lung or bone disease, a test of the ability of the ear to adjust to pressure changes, an orthopedic examination, a clear tone audiogram, an inspection for gross obesity, a simple test for pulmonary and cardiac function, and an inquiry concerning metallic objects in the body.

(2) No workman shall be employed in compressed air unless he has been examined by the appointed physician and is certified by the physician, by a health certificate or a workman's compressed air health register, to be fit for such employment, and further that the date of such certificate is not more than 3 days earlier.

(3) Where work in compressed air is urgently required to be done, before it is reasonably practical, because of the inaccessibility of the appointed physician, to arrange for any examination to obtain any certificate required, an examination may be made by any duly qualified physician who may issue a temporary certificate of fitness. A reexamination of such a workman by the appointed physician shall be made as soon as practicable.

[Rules (Part XX A), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-255 Routine examination of employees—Beginners. Every person who has not previously worked in compressed air shall be tested in the medical lock as part of the preemployment examination before commencing such work. If he passes the test he shall not work more than 4 hours on his first day of work or not more than one-half the regular total work period whichever is the lesser in time, after which he shall be reexamined by the physician for physical fitness. The physician's recommendation shall be in writing and signed by him. A copy shall be submitted to the employer and shall be kept on the job.

[Rules (Part XX B), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-260 Routine examination of employees—Periodic examination. Every compressed air worker shall be examined at regular intervals to determine his fitness to continue work in compressed air. The interval between regular examinations shall not exceed 2 months when work pressures are 13 pounds or less. For pressures exceeding 13 pounds, the regular periodic examination shall be made at intervals not exceeding one month.

[Rules (Part XX C), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-265 Routine examination of employees—Resumption of work. (1) Every compressed air worker who has been absent from the job 10 days or more shall be examined by the physician before resuming work. The physician's findings shall be submitted in writing to the person in charge and shall be kept on the job.

(2) Any workman who is suffering from a cold in the head, a sore throat, ear ache, or any other ailment which is likely to render him unfit for employment in compressed air shall report the matter to his employer or to the person placed in charge of the operation or to the appointed physician, and he shall not be employed in compressed air until he has since, so reporting, been examined by the appointed physician and certified by him to be fit for such employment.

(3) The appointed physician may, on examining or reexamining a person who has been or who is proposed to be employed in compressed air, vary, qualify, or revoke, by written entry in the workman's certificate, any statement relative to his fitness for employment in compressed air. By the same process, the physician may limit the pressure to which the workman is to be subjected or restrict the hours of employment or exposure in compressed air.

[Rules (Part XX D), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-270 Routine examination of employees—Physical fitness requirements. (1) Only persons who

are able to readily equalize the pressure in their ears shall be accepted for work in compressed air.

(2) Persons having chronic alcoholism shall not be permitted to work in compressed air.

(3) Persons having chronic systemic disease or any impairing physical deformity or abnormality including excessive obesity shall not be engaged for work in compressed air.

(4) Persons having any disease of the ear or any systemic disease including skeletal, cardio-vascular, respiratory, genital urinary, or gastrointestinal, which may be aggravated by work in compressed air or which may prevent safe performance of such work, shall not be permitted to work in compressed air.

(5) A person engaged for work in compressed air shall demonstrate his ability to read, speak and comprehend the English language.

[Rules (Part XX E), filed 12/28/62.]

WAC 296-36-990 Severability. If any provision of this safety standard or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this safety standard which can be given effect without the invalid provisions or applications and to this end the provision of this safety standard are declared to be severable.

[Rules (Part XXI), filed 12/28/62.]

Chapter 296-37 WAC
STANDARDS FOR COMMERCIAL DIVING OPERATIONS

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-37-010 Scope and application. [Section I, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-020 Purpose. [Section II, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-030 Definitions. [Section III, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-040 Appointment and duties of committees. [Section IV, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-050 Classification of apparatus permitted and air purity. [Section V, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-060 Approval of equipment. [Section VI, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-070 Diver registration—Diver training or experience—Physical exam and medical history record. [Section VII, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-071 Form # 1. [Form # 1, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-072 Form # 2. [Form # 2, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-080 General requirements, procedures and techniques. [Section VIII, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-081 Form # 3. [Form # 3, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-082 Illustrations of flags and shapes. [Illustrations, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-090 Recompression chamber—Tables—Attendant. [Section IX, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-100 Identification. [Section X, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-110 Waiver or variance. [Section XI, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-300 Use of compressors in diving operations. [Rule 101, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-310 Equipment requirements—Divers air line, check valves, etc. [Rules 102 and 103, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-320 Equipment requirements—Barge operations. [Rule 104, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-330 Equipment requirements—Air tools used in underwater operations. [Rule 105, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-340 Equipment requirements—Inspection. [Rule 106, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-350 Safety rules—Generally. [Rule 107, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-360 Safety rules—Suggestions made by diver considered rule to govern. [Rule 108, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-370 Conditions on barge deck. [Rule 109, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-380 Use of two-way telephones. [Rule 110, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-390 Decompression chamber—When used. [Rule 111, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-395 Special stipulation regarding inexperienced divers and workmen. [Rule 112, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-400 Special stipulation regarding inexperienced divers and workmen—Diver may choose tender. [Rule 113, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-410 Judgment of diver to take precedent. [Rule 114, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-420 Requirement on all ship surveys. [Rule 115, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-430 Use of flood lights. [Rule 116, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-440 Rules for compressed air operations applicable to diving operations. [Rule 117, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-450 Availability of life preservers. [Rule 118, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-460 Care and replacement of equipment. [Rules 119 and 120, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

WAC 296-37-510 Scope and application. (1) The requirements included in this vertical chapter shall apply throughout the state wherever diving takes place within the jurisdiction of the department of labor and industries. These requirements shall also be applicable to those diving related and supportive work activities not at the diving site but which have a direct effect on the safety of the diving operations. Examples may include but are not limited to: The supply of breathing air or gas; the supply of materials, equipment or supplies required by this chapter; the maintenance of diving equipment.

(2) This standard applies to diving and related support operations conducted in connection with all types of work and employments, including general industry, construction, ship repairing, shipbuilding, shipbreaking and longshoring. However, this standard does not apply to any diving operation:

(a) Performed solely for instructional purposes, using open-circuit, compressed-air SCUBA and conducted within the no-decompression limits;

(b) Performed solely for search, rescue, or related public safety purposes by or under the control of a governmental agency; or

(c) Governed by 45 CFR Part 46 (Protection of Human Subjects, United States Department of Health and Human Services) or equivalent rules or regulations established by another federal agency, which regulate research, development, or related purposes involving human subjects.

(d) Defined as scientific diving and which is under the direction and control of a diving program containing at least the following elements:

(i) Diving safety manual which includes at a minimum: Procedures covering all diving operations specific to the program; procedures for emergency care, including recompression and evacuation; and criteria for diver training and certification.

(ii) Diving control (safety) board, with the majority of its members being active divers, which shall at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.

(3) This chapter shall augment the requirements of the general safety and health standard, chapter 296-24 WAC and the general occupational health standard, chapter 296-62 WAC. In instances where this chapter is in direct conflict with the requirements of any general horizontal standard, the requirements of this chapter shall apply.

(4) Hoisting gear used in diving operations shall be inspected and certified as required by chapter 296-56 WAC, safety standards for longshore, stevedore and related waterfront operations.

(5) Application in emergencies. An employer may deviate from the requirements of this standard to the extent necessary to prevent or minimize a situation which is likely to cause death, serious physical harm, or major environmental damage, provided that the employer:

(a) Notifies the assistant director of the department of labor and industries in Olympia or the regional administrator for the region within 48 hours of the onset of the emergency situation indicating the nature of the emergency and extent of the deviation from the prescribed regulations; and

(b) Upon request from the authority notified, submits such information in writing.

(6) Employer obligation. The employer shall be responsible for compliance with:

(a) All provisions of this standard of general applicability; and

(b) All requirements pertaining to specific diving modes to the extent diving operations in such modes are conducted.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-37-510, filed 7/20/94, effective 9/20/94. Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-510, filed 10/30/92, effective 12/8/92. Statutory

Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-510, filed 12/26/86; 81-07-048 (Order 81-4), § 296-37-510, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-510, filed 10/2/78.]

WAC 296-37-512 Variance and procedure. Realizing that conditions may exist in operations under which certain state standards will not have practical application, the director of the department of labor and industries or his/her authorized representative may, pursuant to this section, RCW 49.17.080 and/or 49.17.090 and appropriate administrative rules of this state and the department of labor and industries and upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when other means of providing an equivalent measure of protection are afforded. Such variation granted shall be limited to the particular case or cases covered in the application for variance and may be revoked for cause. The permit for variance shall be conspicuously posted on the premises and shall remain posted during the time it is in effect. All requests for variances from safety and health standards included in this or any other chapter of Title 296 WAC, shall be made in writing to the director of the department of labor and industries at Olympia, Washington, or his/her duly authorized representative, or the assistant director, Department of Labor and Industries, P.O. Box 44600, Olympia, Washington 98504-4600. Variance application forms may be obtained from the department upon request.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-37-512, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-512, filed 10/2/78.]

WAC 296-37-515 Definitions. As used in this standard, the listed terms are defined as follows:

(1) "Acfm": Actual cubic feet per minute.

(2) "ASME Code or equivalent": ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code, Section VIII, or an equivalent code which the employer can demonstrate to be equally effective.

(3) "ATA": Atmosphere absolute.

(4) "Bell": An enclosed compartment, pressurized (closed bell) or unpressurized (open bell), which allows the diver to be transported to and from the underwater work area and which may be used as a temporary refuge during diving operations.

(5) "Bottom time": The total elapsed time measured in minutes from the time when the diver leaves the surface in descent to the time that the diver begins ascent.

(6) "Bursting pressure": The pressure at which a pressure containment device would fail structurally.

(7) "Cylinder": A pressure vessel for the storage of gases.

(8) "Recompression/decompression chamber": A pressure vessel for human occupancy such as a surface decompression chamber, closed bell, or deep diving system used to decompress divers and to treat decompression sickness.

(9) "Decompression sickness": A condition with a variety of symptoms which may result from gas or bubbles in the tissues of divers after pressure reduction.

(10) "Recompression/decompression table": A profile or set of profiles of depth-time relationships for ascent rates and breathing mixtures to be followed after a specific depth-time exposure or exposures.

(11) "Dive location": A surface or vessel from which a diving operation is conducted.

(12) "Dive-location reserve breathing gas": A supply system of air or mixed-gas (as appropriate) at the dive location which is independent of the primary supply system and sufficient to support divers during the planned decompression.

(13) "Dive team": Divers and support employees involved in a diving operation, including the designated person-in-charge.

(14) "Diver": An employee working in water using underwater apparatus which supplies compressed breathing gas at the ambient pressure.

(15) "Diver-carried reserve breathing gas": A diver-carried supply of air or mixed gas (as appropriate) sufficient under standard operating conditions to allow the diver to reach the surface, or another source of breathing gas, or to be reached by a standby diver.

(16) "Diving mode": A type of diving requiring specific equipment, procedures and techniques (SCUBA, surface-supplied air, or mixed gas).

(17) "Fsw": Feet of seawater (or equivalent static pressure head).

(18) "Heavy gear": Diver-worn deep-sea dress including helmet, breastplate, dry suit, weighted shoes.

(19) "Hyperbaric conditions": Pressure conditions in excess of surface pressure.

(20) "Inwater stage": A suspended underwater platform which supports a diver in the water.

(21) "Liveboating": The practice of supporting a surfaced-supplied air or mixed gas diver from a vessel which is underway.

(22) "Mixed-gas diving": A diving mode in which the diver is supplied in the water with a breathing gas other than air.

(23) "No-decompression limits": The depth-time limits of the "no-decompression limits and repetitive dive group designation table for no-decompression air dives," U.S. Navy Diving Manual or equivalent limits which the employer can demonstrate to be equally effective.

(24) "Psi(g)": Pounds per square inch (gauge).

(25) "Scientific diving" means diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks. Scientific diving does not include performing any tasks usually associated with commercial diving such as: Placing or removing heavy objects underwater; inspection of pipelines and similar objects; construction; demolition; cutting or welding; or the use of explosives.

(26) "SCUBA diving": A diving mode independent of surface supply in which the diver uses open circuit self-contained underwater breathing apparatus.

(27) "Standby diver": A diver at the dive location properly equipped and available to assist a diver in the water.

(28) "Surface-supplied air diving": A diving mode in which the diver in the water is supplied from the dive location with compressed air for breathing.

(29) "Treatment table": A depth-time and breathing gas profile designed to treat decompression sickness.

(30) "Umbilical": The composite hose bundle between a dive location and a diver or bell, or between a diver and a bell, which supplies the diver or bell with breathing gas, communications, power, or heat as appropriate to the diving mode or conditions, and includes a safety line between the diver and the dive location.

(31) "Volume tank": A pressure vessel connected to the outlet of a compressor and used as an air reservoir.

(32) "Working pressure": The maximum pressure to which a pressure containment device may be exposed under standard operating conditions.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-515, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-515, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-515, filed 10/2/78.]

WAC 296-37-520 Qualifications of dive team. (1) General.

(a) Each dive team member shall have the experience or training necessary to perform assigned tasks in a safe and healthful manner.

(b) Each dive team member shall have experience or training in the following:

(i) The use of tools, equipment and systems relevant to assigned tasks;

(ii) Techniques of the assigned diving mode; and

(iii) Diving operations and emergency procedures.

(c) All dive team members shall be trained in cardiopulmonary resuscitation and first aid (American Red Cross standard course or equivalent).

(d) Dive team members who are exposed to or control the exposure of others to hyperbaric conditions shall be trained in diving-related physics and physiology.

(2) Assignments.

(a) Each dive team member shall be assigned tasks in accordance with the employee's experience or training, except that limited additional tasks may be assigned to an employee undergoing training provided that these tasks are performed under the direct supervision of an experienced dive team member.

(b) The employer shall not require a dive team member to be exposed to hyperbaric conditions against the employee's will, except when necessary to complete decompression or treatment procedures.

(c) The employer shall not permit a dive team member to dive or be otherwise exposed to hyperbaric conditions for the duration of any temporary physical impairment or condition which is known to the employer and is likely to affect adversely the safety or health of a dive team member.

(3) Designated person-in-charge.

(a) The employer or an employee designated by the employer shall be at the dive location in charge of all aspects of the diving operation affecting the safety and health of dive team members.

(b) The designated person-in-charge shall have experience and training in the conduct of the assigned diving operation.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-520, filed 10/2/78.]

WAC 296-37-525 Medical requirements. (1) General.

(a) The employer shall determine that dive team members who are, or are likely to be, exposed to hyperbaric conditions are medically fit to perform assigned tasks in a safe and healthful manner.

(b) The employer shall provide each dive team member who is, or is likely to be, exposed to hyperbaric conditions with all medical examinations required by this standard.

(c) All medical examinations required by this standard shall be performed by, or under the direction of, a physician at no cost to the employee.

(2) Frequency of medical examinations. Medical examinations shall be provided:

(a) Prior to initial hyperbaric exposure with the employer, unless an equivalent medical examination has been given within the preceding 12 months and the employer has obtained the results of the examination and an opinion from the examining physician of the employee's medical fitness to dive or to be otherwise exposed to hyperbaric conditions;

(b) At one year intervals from the date of initial examination or last equivalent examination; and

(c) After an injury or illness requiring hospitalization of more than twenty-four hours.

(3) Information provided to examining physician. The employer shall provide the following information to the examining physician:

(a) A copy of the medical requirements of this standard; and

(b) A summary of the nature and extent of hyperbaric conditions to which the dive team member will be exposed, including diving modes and types of work to be assigned.

(4) Content of medical examinations.

(a) Medical examinations conducted initially and annually shall consist of the following:

(i) Medical history;

(ii) Diving-related work history;

(iii) Basic physical examination;

(iv) The tests required by Table I; and

(v) Any additional tests the physician considers necessary.

(b) Medical examinations conducted after an injury or illness requiring hospitalization of more than 24 hours shall be appropriate to the nature and extent of the injury or illness as determined by the examining physician.

TABLE I

TESTS FOR DIVING MEDICAL EXAMINATION

Test	Initial Examination	Annual Reexamination
Chest x-ray	x	
Visual acuity	x	x

Color blindness	x	
EKG: Standard 12L[1]		
Hearing test	x	x
Hematocrit or hemoglobin.	x	x
Sickle cell index	x	
White blood count	x	x
Urinalysis	x	x

[1]To be given to the employee once, at age 35 or over.

(5) Physician's written report.

(a) After any medical examination required by this standard, the employer shall obtain a written report prepared by the examining physician containing:

(i) The results of the medical examination; and

(ii) The examining physician's opinion of the employee's fitness to be exposed to hyperbaric conditions, including any recommended restrictions or limitations to such exposure (see WAC 296-37-585).

(b) The employer shall provide the employee with a copy of the physician's written report.

(6) Determination of employee fitness.

(a) The employer shall determine the extent and nature of the dive team member's fitness to engage in diving or be otherwise exposed to hyperbaric conditions consistent with the recommendations in the examining physician's report.

(b) If the examining physician has recommended a restriction or limitation on the dive team member's exposure to hyperbaric conditions, and the affected employee does not concur, a second physician selected by the employee shall render a medical opinion on the nature and extent of the restriction or limitation, if any.

(c) If the recommendation of the second opinion differs from that of the examining (first) physician, and if the employer and employee are unable to agree on the nature and extent of the restriction or limitation, an opinion from a third physician selected by the first two physicians shall be obtained. The employer's determination of the dive team member's fitness shall be consistent with the medical opinion of the third physician, unless the employer and employee reach an agreement which is otherwise consistent with the recommendation or opinion of at least two of the physicians involved.

(d) Nothing in this procedure shall be construed to prohibit either a dive team member from accepting, or an employer from offering, an assignment which is otherwise consistent with at least one medical opinion while a final determination on the employee's fitness is pending.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-525, filed 10/2/78.]

WAC 296-37-530 Safe practices manual. (1) General. The employer shall develop and maintain a safe practices manual which shall be made available at the dive location to each dive team member.

(2) Contents.

(a) The safe practices manual shall contain a copy of this standard and the employer's policies for implementing the requirements of this standard.

(b) For each diving mode engaged in, the safe practices manual shall include:

(i) Safety procedures and checklists for diving operations;

(ii) Assignments and responsibilities of the dive team members;

(iii) Equipment procedures and checklists; and

(iv) Emergency procedures for fire, equipment failure, adverse environmental conditions, and medical illness and injury.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-530, filed 10/2/78.]

WAC 296-37-535 Predive procedures. (1) General. The employer shall comply with the following requirements prior to each diving operation, unless otherwise specified.

(2) Emergency aid. A list shall be kept at the dive location of the telephone or call numbers of the following:

(a) An operational decompression chamber (if not at the dive location);

(b) Accessible hospitals;

(c) Available physicians;

(d) Available means of transportation; and

(e) The nearest U.S. Coast Guard Rescue Coordination Center.

(3) First-aid supplies.

(a) A first-aid kit appropriate for the diving operation and approved by a physician shall be available at the dive location.

(b) When used in a decompression chamber or bell, the first-aid kit shall be suitable for use under hyperbaric conditions.

(c) In addition to any other first-aid supplies, an American Red Cross standard first-aid handbook or equivalent, and a bag-type manual resuscitator with transparent mask and tubing shall be available at the dive location.

(4) Planning and assessment. Planning of a diving operation shall include an assessment of the safety and health aspects of the following:

(a) Diving mode;

(b) Surface and underwater conditions and hazards;

(c) Breathing gas supply (including reserves);

(d) Thermal protection;

(e) Diving equipment and systems;

(f) Dive team assignments and physical fitness of dive team members (including any impairment known to the employer);

(g) Repetitive dive designation or residual inert gas status of dive team members;

(h) Decompression and treatment procedures (including altitude corrections); and

(i) Emergency procedures.

(5) Hazardous activities. To minimize hazards to the dive team, diving operations shall be coordinated with other activities in the vicinity which are likely to interfere with the diving operation.

(6) Employee briefing.

(a) Dive team members shall be briefed on:

(i) The tasks to be undertaken;

(ii) Safety procedures for the diving mode;

(iii) Any unusual hazards or environmental conditions likely to affect the safety of the diving operation; and

(iv) Any modifications to operating procedures necessitated by the specific diving operation.

(b) Prior to making individual dive team member assignments, the employer shall inquire into the dive team member's current state of physical fitness, and indicate to the dive team member the procedure for reporting physical problems or adverse physiological effects during and after the dive.

(7) Equipment inspection. The breathing gas supply system including reserve breathing gas supplies, masks, helmets, thermal protection, and bell handling mechanism (when appropriate) shall be inspected prior to each dive.

(8) Warning signal. When diving from surfaces other than vessels in areas capable of supporting marine traffic, a rigid replica of the international code flag "A" at least one meter in height shall be displayed at the dive location in a manner which allows all-round visibility, and shall be illuminated during night diving operations.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-535, filed 10/2/78.]

WAC 296-37-540 Procedures during dive. (1) General. The employer shall comply with the following requirements which are applicable to each diving operation unless otherwise specified.

(2) Water entry and exit.

(a) A means capable of supporting the diver shall be provided for entering and exiting the water.

(b) The means provided for exiting the water shall extend below the water surface.

(c) A means shall be provided to assist an injured diver from the water or into a bell.

(3) Communications.

(a) An operational two-way voice communication system shall be used between:

(i) Each surface-supplied air or mixed-gas diver and a dive team member at the dive location or bell (when provided or required); and

(ii) The bell and the dive location.

(b) An operational, two-way communication system shall be available at the dive location to obtain emergency assistance.

(4) Decompression tables. Decompression, repetitive, and no-decompression tables (as appropriate) shall be at the dive location.

(5) Dive profiles. A depth-time profile, including when appropriate any breathing gas changes, shall be maintained for each diver during the dive including decompression.

(6) Hand-held power tools and equipment.

(a) Hand-held electrical tools and equipment shall be deenergized before being placed into or retrieved from the water.

(b) Hand-held power tools shall not be supplied with power from the dive location until requested by the diver.

(7) Welding and burning.

(a) A current supply switch to interrupt the current flow to the welding or burning electrode shall be:

(i) Tended by a dive team member in voice communication with the diver performing the welding or burning; and

(ii) Kept in the open position except when the diver is welding or burning.

(b) The welding machine frame shall be grounded.

(c) Welding and burning cables, electrode holders, and connections shall be capable of carrying the maximum current required by the work, and shall be properly insulated.

(d) Insulated gloves shall be provided to divers performing welding and burning operations.

(e) Prior to welding or burning on closed compartments, structures or pipes, which contain a flammable vapor or in which a flammable vapor may be generated by the work, they shall be vented, flooded, or purged with a mixture of gases which will not support combustion.

(8) Explosives.

(a) Employers shall transport, store, and use explosives in accordance with this section and applicable provisions of chapter 296-52 WAC.

(b) Electrical continuity of explosive circuits shall not be tested until the diver is out of the water.

(c) Explosives shall not be detonated while the diver is in the water.

(9) Termination of dive. The working interval of a dive shall be terminated when:

(a) A diver requests termination;

(b) A diver fails to respond correctly to communications or signals from a dive team member;

(c) Communications are lost and can not be quickly reestablished between the diver and a dive team member at the dive location, and between the designated person-in-charge and the person controlling the vessel in liveboating operations; or

(d) A diver begins to use diver-carried reserve breathing gas or the dive-location reserve breathing gas.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-540, filed 10/2/78.]

WAC 296-37-545 Postdive procedures. (1) General. The employer shall comply with the following requirements which are applicable after each diving operation, unless otherwise specified.

(2) Precautions.

(a) After the completion of any dive, the employer shall:

(i) Check the physical condition of the diver;

(ii) Instruct the diver to report any physical problems or adverse physiological effects including symptoms of decompression sickness;

(iii) Advise the diver of the location of a decompression chamber which is ready for use; and

(iv) Alert the diver to the potential hazards of flying after diving.

(b) For any dive outside the no-decompression limits, deeper than 100 fsw or using mixed gas as a breathing mixture, the employer shall instruct the diver to remain awake and in the vicinity of the decompression chamber which is at the dive location for at least one hour after the dive (including decompression or treatment as appropriate).

(3) Recompression capability.

(a) A decompression chamber capable of recompressing the diver at the surface to a minimum of 165 fsw (6 ATA) shall be available at the dive location for:

(i) Surface-supplied air diving to depths deeper than 100 fsw and shallower than 220 fsw;

(ii) Mixed gas diving shallower than 300 fsw; or

(iii) Diving outside the no-decompression limits shallower than 300 fsw.

(b) A decompression chamber capable of recompressing the diver at the surface to the maximum depth of the dive shall be available at the dive location for dives deeper than 300 fsw.

(c) The decompression chamber shall be:

(i) Dual-lock;

(ii) Multiplace; and

(iii) Located within five minutes of the dive location.

(d) The decompression chamber shall be equipped with:

(i) A pressure gauge for each pressurized compartment designed for human occupancy;

(ii) A built-in-breathing-system with a minimum of one mask per occupant;

(iii) A two-way voice communication system between occupants and a dive team member at the dive location;

(iv) A viewport; and

(v) Illumination capability to light the interior.

(e) Treatment tables, treatment gas appropriate to the diving mode, and sufficient gas to conduct treatment shall be available at the dive location.

(f) A dive team member shall be available at the dive location during and for at least one hour after the dive to operate the decompression chamber (when required or provided).

(4) Record of dive.

(a) The following information shall be recorded and maintained for each diving operation:

(i) Names of dive team members including designated person-in-charge;

(ii) Date, time, and location;

(iii) Diving modes used;

(iv) General nature of work performed;

(v) Approximate underwater and surface conditions (visibility, water temperature and current); and

(vi) Maximum depth and bottom time for each diver.

(b) For each dive outside the no-decompression limits, deeper than 100 fsw or using mixed gas, the following additional information shall be recorded and maintained:

(i) Depth-time and breathing gas profiles;

(ii) Decompression table designation (including modification); and

(iii) Elapsed time since last pressure exposure if less than 24 hours or repetitive dive designation for each diver.

(c) For each dive in which decompression sickness is suspected or symptoms are evident, the following additional information shall be recorded and maintained:

(i) Description of decompression sickness symptoms (including depth and time of onset); and

(ii) Description and results of treatment.

(5) Decompression procedure assessment. The employer shall:

(a) Investigate and evaluate each incident of decompression sickness based on the recorded information, consideration of the past performance of decompression table used, and individual susceptibility;

(b) Take appropriate corrective action to reduce the probability of recurrence of decompression sickness; and

(c) Prepare a written evaluation of the decompression procedure assessment, including any corrective action taken, within 45 days of the incident of decompression sickness.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-545, filed 10/2/78.]

WAC 296-37-550 Scuba diving. (1) General. Employers engaged in scuba diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. SCUBA diving shall not be conducted:

(a) At depths deeper than 130 fsw;

(b) At depths deeper than 100 fsw or outside the no-decompression limits unless a decompression chamber is ready for use;

(c) Against currents exceeding one knot unless line-tended; or

(d) In enclosed or physically confining spaces unless line-tended.

(3) Procedures. (a) A standby diver shall be available while a diver is in the water.

(b) A diver shall be line-tended from the surface, or accompanied by another diver in the water in continuous visual contact during the diving operations.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces and shall have positive means of communication with the diver or divers within the space.

(d) A diver-carried reserve breathing gas supply shall be provided for each diver consisting of:

(i) A manual reserve (J valve); or

(ii) An independent reserve cylinder with a separate regulator or connected to the underwater breathing apparatus.

(e) The valve of the reserve breathing gas supply shall be in the closed position prior to the dive.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-550, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-37-550, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-550, filed 10/2/78.]

WAC 296-37-555 Surface-supplied air diving. (1) General. Employers engaged in surface-supplied air diving shall comply with the following requirements, unless otherwise specified.

(2) Limits.

(a) Surface-supplied air diving shall not be conducted at depths deeper than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw.

(b) A decompression chamber shall be ready for use at the dive location for any dive outside the no-decompression limits or deeper than 100 fsw.

(c) A bell shall be used for dives with an inwater decompression time greater than 120 minutes, except when heavy gear is worn or diving is conducted in physically confining spaces.

(3) Procedures.

(a) Each diver shall be continuously tended while in the water.

(b) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces.

(c) Each diving operation shall have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.

(d) For dives deeper than 100 fsw or outside the no-decompression limits:

(i) A separate dive team member shall tend each diver in the water;

(ii) A standby diver shall be available while a diver is in the water;

(iii) A diver-carried reserve breathing gas supply shall be provided for each diver except when heavy gear is worn; and

(iv) A dive-location reserve breathing gas supply shall be provided.

(e) For heavy-gear diving deeper than 100 fsw or outside the no-decompression limits:

(i) An extra breathing gas hose capable of supplying breathing gas to the diver in the water shall be available to the standby diver.

(ii) An inwater stage shall be provided to divers in the water.

(f) Except when heavy gear is worn or where physical space does not permit, a diver-carried reserve breathing gas supply shall be provided whenever the diver is prevented by the configuration of the dive area from ascending directly to the surface.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-555, filed 10/2/78.]

WAC 296-37-560 Mixed-gas diving. (1) General. Employers engaged in mixed-gas diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. Mixed-gas diving shall be conducted only when:

(a) A decompression chamber is ready for use at the dive location; and

(b) A bell is used at depths greater than 220 fsw or when the dive involves inwater decompression time of greater than 120 minutes, except when heavy gear is worn or when diving in physically confining spaces; or

(c) A closed bell is used at depths greater than 300 fsw, except when diving is conducted in physically confining spaces.

(3) Procedures.

(a) A separate dive team member shall tend each diver in the water.

(b) A standby diver shall be available while a diver is in the water.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces.

(d) Each diving operation shall have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.

(e) Each diving operation shall have a dive-location reserve breathing gas supply.

(f) When heavy gear is worn:

(i) An extra breathing gas hose capable of supplying breathing gas to the diver in the water shall be available to the standby diver; and

(ii) An inwater stage shall be provided to divers in the water.

(g) An inwater stage shall be provided for divers without access to a bell for dives deeper than 100 fsw or outside the no-decompression limits.

(h) When a closed bell is used, one dive team member in the bell shall be available and tend the diver in the water.

(i) Except when heavy gear is worn or where physical space does not permit, a diver-carried reserve breathing gas supply shall be provided for each diver:

(i) Diving deeper than 100 fsw or outside the no-decompression limits; or

(ii) Prevented by the configuration of the dive area from directly ascending to the surface.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-560, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-560, filed 10/2/78.]

WAC 296-37-565 Liveboating. (1) General. Employers engaged in diving operations involving liveboating shall comply with the following requirements.

(2) Limits. Diving operations involving liveboating shall not be conducted:

(a) With an inwater decompression time of greater than 120 minutes;

(b) Using surface-supplied air at depths deeper than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw;

(c) Using mixed gas at depths greater than 220 fsw;

(d) In rough seas which significantly impede diver mobility or work function; or

(e) In other than daylight hours.

(3) Procedures.

(a) The propeller of the vessel shall be stopped before the diver enters or exits the water.

(b) A device shall be used which minimizes the possibility of entanglement of the diver's hose in the propeller of the vessel.

(c) Two-way voice communication between the designated person-in-charge and the person controlling the vessel shall be available while the diver is in the water.

(d) A standby diver shall be available while a diver is in the water.

(e) A diver-carried reserve breathing gas supply shall be carried by each diver engaged in liveboating operations.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-565, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-565, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-565, filed 10/2/78.]

WAC 296-37-570 Equipment. (1) General.

(a) All employers shall comply with the following requirements, unless otherwise specified.

(b) Each equipment modification, repair, test, calibration or maintenance service shall be recorded by means of a

tagging or logging system, and include the date and nature of work performed, and the name or initials of the person performing the work.

(2) Air compressor system.

(a) Compressors used to supply air to the diver shall be equipped with a volume tank with a check valve on the inlet side, a pressure gauge, a relief valve, and a drain valve.

(b) A compressor shall be constructed and situated so as to avoid entry of contaminated air into the air-supply system and shall be equipped with a suitable in-line particulate filter followed by a bed of activated charcoal and, if necessary, a moisture absorber to further assure breathing air quality. These filters should be placed before any receiver and after the discharge in the compressor. If an oil-lubricated compressor is used, it shall be equipped with a carbon monoxide alarm or an equally as effective alternative if approved by the department.

(i) If a carbon monoxide alarm is used, it shall be calibrated to activate at or below 20 parts per million carbon monoxide at least once per month. A calibration and maintenance log shall be kept and shall be available for review and copying by the director or his or her designee. The log shall identify the test method, date, time of test, results, and the name of the person performing the test. The log shall be retained for at least one year from the date of the test.

(ii) If the use of an alarm at the compressor will not effectively provide warning to the diver or tender of a carbon monoxide problem, a remote alarm or other means of warning the wearer shall be used.

(iii) Breathing air couplings shall be incompatible with outlets for nonrespirable plant air or other gas systems to prevent inadvertent servicing of air-line breathing apparatus with nonrespirable gases.

(c) Respirable air supplied to a diver shall not contain:

(i) A level of carbon monoxide (CO) greater than 20 ppm;

(ii) A level of carbon dioxide (CO_2) greater than 1,000 ppm;

(iii) A level of oil mist greater than 5 milligrams per cubic meter; or

(iv) A noxious or pronounced odor.

(d) Compressor systems providing surface air to divers must have a low pressure warning device installed at the air purification system inlet to alert dive tenders of low air pressure.

The minimum alarm setting shall be 45 Psi plus an additional 15 Psi for each working atmosphere.

1 ATM = 33 fsw or 15 Psi
2 ATM = 66 fsw or 30 Psi
3 ATM = 99 fsw or 45 Psi
4 ATM = 132 fsw or 60 Psi
5 ATM = 165 fsw or 75 Psi
6 ATM = 198 fsw or 90 Psi

(e) The output of air compressor systems shall be tested for air purity every six months by means of samples taken at the connection to the distribution system, except that nonoil lubricated compressors need not be tested for oil mist.

(3) Breathing gas supply hoses.

(a) Breathing gas supply hoses shall:

(i) Have a working pressure at least equal to the working pressure of the total breathing gas system;

(ii) Have a rated bursting pressure at least equal to four times the working pressure;

(iii) Be tested at least annually to 1.5 times their working pressure; and

(iv) Have their open ends taped, capped or plugged when not in use.

(b) Breathing gas supply hose connectors shall:

(i) Be made of corrosion-resistant materials;

(ii) Have a working pressure at least equal to the working pressure of the hose to which they are attached; and

(iii) Be resistant to accidental disengagement.

(c) Umbilicals shall:

(i) Include a safety line which shall be attached in a manner to remove strain from the air supply hose;

(ii) Be marked in 10-foot increments to 100 feet beginning at the diver's end, and in 50 foot increments thereafter;

(iii) Be made of kink-resistant materials; and

(iv) Have a working pressure greater than the pressure equivalent to the maximum depth of the dive (relative to the supply source) plus 100 psi.

(4) Buoyancy control.

(a) Helmets or masks connected directly to the dry suit or other buoyancy-changing equipment shall be equipped with an exhaust valve.

(b) A dry suit or other buoyancy-changing equipment not directly connected to the helmet or mask shall be equipped with an exhaust valve.

(c) When used for SCUBA diving, a buoyancy compensator shall have an inflation source separate from the breathing gas supply.

(d) An inflatable flotation device capable of maintaining the diver at the surface in a face-up position, having a manually activated inflation source independent of the breathing supply, an oral inflation device, and an exhaust valve shall be used for SCUBA diving.

(5) Compressed gas cylinders. Compressed gas cylinders shall:

(a) Be designed, constructed and maintained in accordance with the applicable provisions of WAC 296-24-295 and 296-24-940 of the General safety and health standards.

(b) Be stored in a ventilated area and protected from excessive heat;

(c) Be secured from falling; and

(d) Have shut-off valves recessed into the cylinder or protected by a cap, except when in use or manifolded, or when used for SCUBA diving.

(6) Recompression/decompression chambers.

(a) Each recompression/decompression chamber manufactured after the effective date of this standard, shall be built and maintained in accordance with the ASME Code or equivalent.

(b) Each recompression/decompression chamber manufactured prior to the effective date of this standard shall be maintained in conformity with the code requirements to which it was built, or equivalent.

(c) Each recompression/decompression chamber shall be equipped with:

(i) Means to maintain the atmosphere below a level of 25% oxygen by volume;

(ii) Mufflers on intake and exhaust lines, which shall be regularly inspected and maintained;

(iii) Suction guards on exhaust line openings; and

(iv) A means for extinguishing fire, and shall be maintained to minimize sources of ignition and combustible material.

(7) Gauges and timekeeping devices.

(a) Gauges indicating diver depth which can be read at the dive location shall be used for all dives except SCUBA.

(b) Each depth gauge shall be deadweight tested or calibrated against a master reference gauge every six months, and when there is a discrepancy greater than two percent of full scale between any two equivalent gauges.

(c) A cylinder pressure gauge capable of being monitored by the diver during the dive shall be worn by each SCUBA diver.

(d) A timekeeping device shall be available at each dive location.

(8) Masks and helmets.

(a) Surface-supplied air and mixed-gas masks and helmets shall have:

(i) A nonreturn valve at the attachment point between helmet or mask and hose which shall close readily and positively; and

(ii) An exhaust valve.

(b) Surface-supplied air masks and helmets shall have a minimum ventilation rate capability of 4.5 acfm at any depth at which they are operated or the capability of maintaining the diver's inspired carbon dioxide partial pressure below 0.02 ATA when the diver is producing carbon dioxide at the rate of 1.6 standard liters per minute.

(9) Oxygen safety.

(a) Equipment used with oxygen or mixtures containing over forty percent by volume oxygen shall be designed for oxygen service.

(b) Components (except umbilicals) exposed to oxygen or mixtures containing over forty percent by volume oxygen shall be cleaned of flammable materials before use.

(c) Oxygen systems over 125 psig and compressed air systems over 500 psig shall have slow-opening shut-off valves.

(10) Weights and harnesses.

(a) Except when heavy gear is worn, divers shall be equipped with a weight belt or assembly capable of quick release.

(b) Except when heavy gear is worn or in SCUBA diving, each diver shall wear a safety harness with:

(i) A positive buckling device;

(ii) An attachment point for the umbilical to prevent strain on the mask or helmet; and

(iii) A lifting point to distribute the pull force of the line over the diver's body.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-570, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-570, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-570, filed 10/2/78.]

WAC 296-37-575 Recordkeeping requirements. (1) Recording and reporting.

(a) The employer shall comply with the requirements of chapters 296-27 and 296-350 WAC.

(b) The employer shall record the occurrence of any diving-related injury or illness which requires any dive team member to be hospitalized for 24 hours or more, specifying the circumstances of the incident and the extent of any injuries or illnesses.

(2) Availability of records.

(a) Upon the request of the director of the department of labor and industries or his duly authorized designees, the employer shall make available for inspection and copying any record or document required by this standard.

(b) Records and documents required by this standard shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217. Safe practices manuals (WAC 296-37-530), depth-time profiles (WAC 296-37-540), recording of dives (WAC 296-37-545), decompression procedure assessment evaluations (WAC 296-37-545), and records of hospitalizations (WAC 296-37-575) shall be provided in the same manner as employee exposure records or analyses using exposure or medical records. Equipment inspections and testing records which pertain to employees (WAC 296-37-570) shall also be provided upon request to employees and their designated representatives.

(c) Records and documents required by this standard shall be retained by the employer for the following period:

(i) Dive team member medical records (physician's reports) (WAC 296-37-525) - five years;

(ii) Safe practices manual (WAC 296-37-530) - current document only;

(iii) Depth-time profile (WAC 296-37-540) - until completion of the recording of dive, or until completion of decompression procedure assessment where there has been an incident of decompression sickness;

(iv) Recording dive (WAC 296-37-545) one year, except five years where there has been an incident of decompression sickness;

(v) Decompression procedure assessment evaluations (WAC 296-37-545) - five years;

(vi) Equipment inspections and testing records (WAC 296-37-570) - current entry or tag, or until equipment is withdrawn from service;

(vii) Records of hospitalizations (WAC 296-37-575) - five years.

(d) After the expiration of the retention period of any record required to be kept for five years, the employer shall forward such records to the National Institute for Occupational Safety and Health, Department of Health and Human Services. The employer shall also comply with any additional requirements set forth in WAC 296-62-05215.

(e) In the event the employer ceases to do business:

(i) The successor employer shall receive and retain all dive and employee medical records required by this standard; or

(ii) If there is no successor employer, dive and employee medical records shall be forwarded to the National Institute for Occupational Safety and Health, Department of Health and Human Services.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-37-575, filed 7/20/94, effective 9/20/94. Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-575, filed 10/30/92, effective 12/8/92. Statutory

Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-575, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-37-575, filed 8/27/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-575, filed 10/2/78.]

WAC 296-37-580 Reserved.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-580, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-580, filed 10/2/78.]

WAC 296-37-585 Appendix A to chapter 296-37 WAC—Examples of conditions which may restrict or limit exposure to hyperbaric conditions. (1) The following disorders may restrict or limit occupational exposure to hyperbaric conditions depending on severity, presence of residual effects, response to therapy, number of occurrences, diving mode, or degree and duration of isolation.

(a) History of seizure disorder other than early febrile convulsions.

(b) Malignancies (active) unless treated and without recurrence for five years.

(c) Chronic inability to equalize sinus and/or middle ear pressure.

(d) Cystic or cavitary disease of the lungs.

(e) Impaired organ function caused by alcohol or drug use.

(f) Conditions requiring continuous medication for control (e.g., antihistamines, steroids, barbiturates, mood altering drugs, or insulin).

(i) Meniere's disease.

(ii) Hemoglobinopathies.

(iii) Obstructive or restrictive lung disease.

(iv) Vestibular end organ destruction.

(v) Pneumothorax.

(vi) Cardiac abnormalities (e.g., pathological heart block, valvular disease, intraventricular conduction defects other than isolated right bundle branch block, angina pectoris, arrhythmia, coronary artery disease).

(vii) Juxta-articular osteonecrosis.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-585, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-585, filed 10/2/78.]

WAC 296-37-590 Appendix B to chapter 296-37 WAC—Guidelines for scientific diving. This appendix contains guidelines that will be used in conjunction with WAC 296-37-510 (2)(e) to determine those scientific diving programs which are exempt from the requirements for commercial diving. The guidelines are as follows:

(1) The diving control board consists of a majority of active scientific divers and has autonomous and absolute authority over scientific diving program's operations.

(2) The purpose of the project using scientific diving is the advancement of science; therefore, information and data resulting from the project are nonproprietary.

(3) The tasks of a scientific diver are those of an observer and data gatherer. Construction and trouble-shooting tasks traditionally associated with commercial diving are not included within scientific diving.

(4) Scientific divers, based on the nature of their activities, must use scientific expertise in studying the underwater environment and, therefore, are scientists or scientists in training.

[Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-37-590, filed 10/30/92, effective 12/8/92.]

Chapter 296-43 WAC
HEATING INSTALLATIONS—CABLE, RADIANT, SOIL, ETC.

WAC

WAC 296-43-010 Heating cables—General. Heating cables or wires designed for use in low temperature heating applications, i.e., soil, water, plaster, walls and ceilings, floors, etc., shall conform to the provisions of the N.E.C. Article 422 as applicable and to the following specifications:

(1) The units shall be manufactured in such continuous lengths that the maximum temperature of the element does not exceed 100 degrees C. or the maximum safe working temperature of the insulating material covering the element. Whichever is the lower temperature shall be considered the maximum permissible working temperature of the element.

(2) The insulation on the element shall equal that specified for equivalent 600 v. combined Type TW and TH or RW and RH conductor insulation and, in addition, shall meet the following requirements:

(a) Permissible maximum water absorption shall not exceed .015 grams per sq. in. of surface in distilled water at 70 degree C. in 7 days.

(b) Maximum safe operating temperature of the insulation shall not be less than 70 degrees C.

(c) It shall be suitable for the purpose intended and approved by the Washington state electrical inspection department as such.

(d) Samples for testing: The manufacturer shall submit suitable samples to the Washington state inspection department for inspection and testing as required.

(e) Marking: Each unit shall be provided with permanent labels or markings at the factory.

(i) These labels shall be placed not more than 3 in. from the terminal on each end and shall include the makers' name and the normal rating in volts and amperes; or, volts and watts.

(ii) 120 volt labels shall be bright metal or white in color. 240 v. labels shall be colored red.

(f) Units shall be installed in their complete lengths as supplied by the factory. Units from which a label or labels are missing will be considered shortened and will not be

approved until such time as the installing contractor shall provide proof, by connecting suitable test meters into the circuits with which the inspector, at his convenience, may satisfy himself that the element is suitable for the purpose intended.

(g) Heating element units shall not be covered until clearance has been received from the local inspecting authority.

(h) Lead covered heating elements shall not be permitted in direct contact with plaster, concrete or similar materials capable of causing crystallization and/or checking of the lead sheath, unless protected by a suitable covering of chemically inert material.

(i) All control equipment must be of approved type and of suitable rating for the use intended.

[Rules (part), filed 4/3/61.]

WAC 296-43-020 Heating cables—Maximum wattage and temperature. (1) In contact with combustible material. Maximum wattage of the element shall not exceed 3 watts per lineal foot or maximum temperature of 60 degrees C. (140 degrees F.) when in direct contact with combustible material or applied over existing ceilings.

(2) Imbedded in cement. Maximum wattage of the element shall not exceed 4 watts per lineal foot or maximum temperature of 80 degrees C. (194 degrees F.) when imbedded in cement, plaster or similar noncombustible, heat-diffusing material.

[Rules (part), filed 4/3/61.]

WAC 296-43-030 Heating cables—Permissible installation methods in buildings. Wiring to the elements shall conform to the National Electrical Code and to the following conditions:

(1) **Terminals.**

(a) Termination of radiant heating elements shall be with solderless lugs, binding posts, or similar compression terminals.

(b) Terminal boxes for radiant heating elements, where they are terminated in junction boxes and also for the circuit wires with which they are connected, shall be protected by asbestos, glass, or similar noncombustible sleeving to a point at least 18 in. from the terminal.

(c) Not more than 3 in. of element per lead shall be permitted inside the terminal box and not more than two heating element leads shall be terminated in any 1-gang terminal box.

(d) The use of metal raceways for terminating radiant heating cables is permissible providing 6 in. clearance is maintained between points where elements enter the raceways, and, that the elements are terminated as provided in subsections (1)(b) and (1)(c) above.

(e) Where nonheating leads, at least 2 ft. in length, from the element are provided by the factory requirements of subsections (1)(b), (1)(c) and (1)(d) above may be waived, providing that the number of wires per box shall comply with section 3705 of the N.E.C.

(2) **Imbedded in plaster.** Heating elements, when imbedded in plaster, shall conform to the following provisions:

(a) Adjacent turns shall be not less than 1 in. apart and secured suitably by insulated staples, adhesive tape, patching plaster, plaster of paris, or other suitable means of attachment, as approved by the local inspecting authority, on not less than 2 ft. centers.

(b) Nonmetallic insulating tape shall be used where the element crosses metal reinforcing on rock plaster board and similar lath substitutes, when the heating element is applied directly to the lath base. (Where possible, nonmetallic reinforcing should be substituted to avoid the hum that is occasionally generated in the reinforcing while the current is on.)

(c) When heating element is used on a surface employing metal lath base, a brown coat shall be applied sufficient to completely cover the metal lath before the element is applied; and, adhesive tape, patching plaster, plaster of paris, or other suitable means of attachment be used to secure the element in place.

(d) Heating element shall only be applied to fire resistant plaster bases.

(3) **Imbedded in concrete floors.** Heating elements imbedded in concrete floors shall conform to the following provisions:

(a) Adjacent turns shall not be less than 1 in. apart and shall be held securely in place by suitable frames or spreaders while the concrete topping is applied.

(b) Heating cables shall maintain at least 1 in. clearance between the element and adjacent metallic pipe or similar conductors imbedded in the slab.

(c) Suitable rigid conduit risers shall be provided for terminating elements imbedded in concrete floors unless raceways or other adequate means are provided for protecting the elements where they leave the slab.

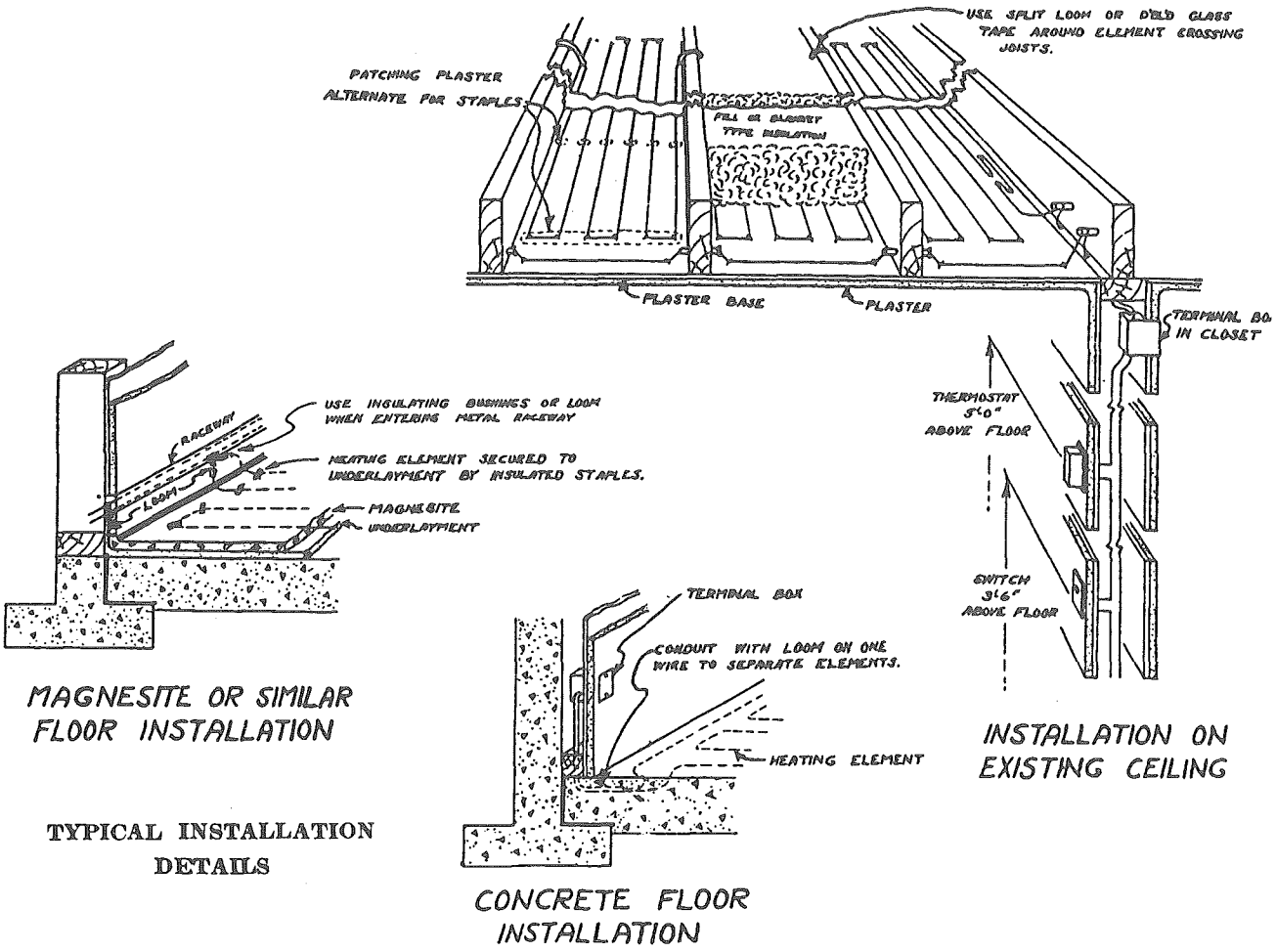
(d) Insulating sleeves shall be placed over the element from the point where it enters the slab through the conduit to the terminating box, unless nonheating leads, not less than 2 ft. long, are provided with the element by the factory.

(e) Suitable insulating bushings shall be used to separate the leads or elements where they enter the conduit in the slab.

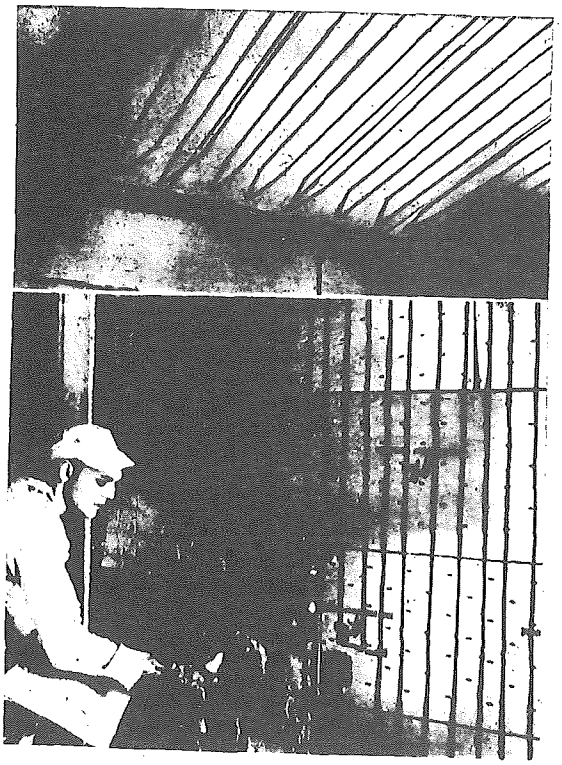
(4) **Magnesite, terrazzo, tile and similar floors and walls.**

(a) Shall conform to the provisions of sections 1, 2, and 3 as applicable.

(b) Heating cables may be attached to the surface of the underlayment where magnesite or terrazzo floors are installed.



TYPICAL INSTALLATION DETAILS



Upper: Heating cable applied to plaster board ceiling ready for plaster. Note clearance between metal lath and heating cable.

Lower: Heating cable applied to plaster board wall. Note that elements run vertically to allow plasterer to apply the brown coat parallel to the cable.

(5) Linoleum, asphalt tile and similar floor coverings may be placed over heating elements on wood floors providing the element is first covered with 3/8 in. of magnesium oxychloride or equal fire resistant underlayment.

(6) Existing ceilings.

(a) Heating elements placed over existing ceilings shall be suitably secured thereto conforming to the provisions of WAC 296-43-020(1), and 296-43-030 (1), (2), and (3) as applicable.

(b) Wood lath shall be covered with asbestos paper, gypsum board or similar fire resistant material before the element is applied to the ceiling.

(c) Heating elements shall not be applied over insulating board type of lath such as celotex, insulite, firtex, and similar materials. Where this type of material is used, the element should be secured to the under face of the ceiling and covered with plaster or fire resistant board of a noninsulating type.

(d) Elements crossing ceiling joints shall be enclosed in split loom or folded glass tape to protect the element.

(7) Gypsum board, plaster lath and similar heat conducting fire resistant materials may have the heating element applied directly thereto.

(8) Ceilings of combustible material; i.e., wood veneer, tempered hardboard and similar heat conducting materials shall first be covered by asbestos paper, gypsum board, or similar fire resistant material.

(9) Pads containing heating elements for placing heating elements in spaces over existing ceilings or in walls or floors which are otherwise inaccessible, shall conform to the provisions of WAC 296-43-010 (1), (2), 296-43-020(1), 296-43-030 (6), (7), (8), and 296-43-040 as applicable, and the following specifications:

(a) The pads shall be of fire resistant, nonconducting material.

(b) The pads shall rigidly secure the element in such a manner that it will be impossible for the adjacent turns of the element to touch.

(i) The leads shall be suitably secured to the pad in a manner which provides permanent adequate separation between the leads.

(ii) The leads shall be covered with an insulating sleeve from the pad to the termination of the heating part of the element.

(iii) All connections must be accessible.

[Rules (part), filed 4/3/61.]

WAC 296-43-040 Heating cables—Thermal insulation. Thermal insulation placed over heating elements or in contact therewith shall be noncorrosive, noncombustible, nonconducting material as provided in section 3249 of the N.E.C.

[Rules (part), filed 4/3/61.]

WAC 296-43-050 Heating cables—Elements installed in tanks, troughs, or pipe lines containing liquids. Elements installed in tanks, troughs or pipe lines containing liquids shall be provided with suitable insulating terminating bushings and terminal boxes at the points where the element enters and leaves the tank, trough, or pipe line. Elements so installed shall be secured in a manner maintaining at least 1 in. clearance between turns.

[Rules (part), filed 4/3/61.]

WAC 296-43-060 Heating element in soil or sand. (1) Heating element in soil or sand shall be so spaced that the minimum distance between adjacent turns is not less than 1 in.

(2) Heating elements shall never be placed directly in peat moss or similar material of an insulating nature. Where peat moss or similar material is used, the element shall be protected by a layer of at least 1 in. over and 1 in. under the element, of a heat conducting material such as sand.

(3) Suitable drains for condensation shall be provided at the bottom of all boxes used in greenhouse or hotbed wiring.

(4) Where open wiring is used in greenhouses and hotbeds, the use of nonmetallic boxes and covers is recommended as provided in section 3716 of the N.E.C.

[Rules (part), filed 4/3/61.]

WAC 296-43-070 Heating element imbedded in driveways. Heating elements imbedded in driveways shall conform to the provisions of WAC 296-43-010, 296-43-020 and 296-43-030(3), as applicable.

[Rules (part), filed 4/3/61.]

Chapter 296-44 WAC
SAFETY STANDARDS—ELECTRICAL CONSTRUCTION CODE

WAC

PART H—INSTALLATION AND MAINTENANCE OF ELECTRIC UTILIZATION EQUIPMENT

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-44-019 Applicability of rules—To construction and reconstruction of lines. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-022 Applicability of rules—Restoration of clearances. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-028 Applicability of rules—Reconstruction or alteration. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-031 Applicability of other standards. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-034 Design, construction and maintenance. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-037 Limiting conditions specified. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-040 Waiving of rules. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-043 Exemptions or modifications. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-046 Emergency. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-049 Saving clause. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-052 Cooperation to avoid conflicts. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-055 Joint use of poles. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-058 Rules covering methods of protective grounding of circuits, equipment, and lightning arresters for stations, lines, and utilization equipment—Scope. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-061 Rules covering methods of protective grounding of circuits, equipment, and lightning arresters for stations, lines, and utilization equipment—Point of attachment of grounding conductor. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-064 Grounding conductor. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-067 Ground connections. [Rule 93C (codified as subsection (4)), filed 10/30/64, effective 12/1/64; Subsections A through D (codified as (1), (2), (3), (4) and (5)), filed 3/23/60, effective 12/1/58; Rule 93C, § 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007

(Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-070 Method. [Subsection D (codified as (4)), filed 10/30/64, effective 12/1/64; Subsections A through C (codified as (1), (2), (3)), § 9 (part), filed 3/23/60, effective 12/1/58; Rule 94D, § 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-073 Ground resistance. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-076 Separate grounding conductors and grounds. [Subsection B (codified as (2)), filed 10/30/64, effective 12/1/64; Subsections A and B (codified as (1) and (3)), § 9 (part), filed 3/23/60, effective 12/1/58; Rule 96B, § 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-079 Protective arrangements of stations and substations—Scope of the rules. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-082 Protective arrangements of stations and substations—General requirements. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-085 Protective arrangements of stations and substations—Illumination. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-088 Protective arrangements of stations and substations—Floors, floor openings, passageways, stairs. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-091 Protective arrangements of stations and substations—Exits. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-094 Protective arrangements of stations and substations—Fire-fighting apparatus. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-097 Protective arrangements of stations and substations—Oil-filled apparatus. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-100 Protective arrangements of equipment—General requirement. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-103 Protective arrangements of equipment—Inspections. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-106 Protective arrangements of equipment—Guarding shaft ends, pulleys, and belts, and suddenly moving parts. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-109 Protective arrangements of equipment—Protective grounding. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-112 Protective arrangements of equipment—Guarding live parts. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-115 Protective arrangements of equipment—Working space about electric equipment. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-118 Protective arrangements of equipment—Hazardous locations. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-121 Protective arrangements of equipment—Shielding of equipment from deteriorating agencies. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-124 Protective arrangements of equipment—Identification. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-127 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Speed-control and stopping devices. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-130 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Guards for live parts. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-133 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Grounding machine frames. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-136 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Deteriorating agencies. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-139 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Motors. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-142 Storage batteries—General. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-145 Storage batteries—Isolation. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-148 Storage batteries—Ventilation. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-151 Storage batteries—Insulation. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-154 Storage batteries—Racks and trays. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-157 Storage batteries—Floors. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-160 Storage batteries—Wiring in battery rooms. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-163 Storage batteries—Guarding live parts in battery rooms. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-166 Storage batteries—Illumination for battery rooms enclosing batteries of the nonsealed type. [§ 13 (part), filed

3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-169 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Current-transformer secondary circuits. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-172 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Grounding secondary circuits of instrument transformers. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-175 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Grounding transformer cases. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-178 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Location and arrangement of power transformers. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-181 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Resistance devices. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-184 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Ground detectors. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-187 Conductors—Electrical protection. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-190 Conductors—Precaution against mechanical and thermal damage. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-193 Conductors—Isolation. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-196 Conductors—Guarding conductors. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-199 Conductors—Guarding in hazardous locations. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-202 Conductors—Taping ends and joints. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-205 Conductors—Wiring for illumination. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-208 Fuses, circuit-breakers, switches, and controllers—Accessible and indicating. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-211 Fuses, circuit-breakers, switches, and controllers—Oil switches. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-214 Fuses, circuit-breakers, switches, and controllers—Where switches are required. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-217 Fuses, circuit-breakers, switches, and controllers—Switches or other grounding devices. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-220 Fuses, circuit-breakers, switches, and controllers—Capacity of switches and disconnectors. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-223 Fuses, circuit-breakers, switches, and controllers—Where fuses or automatic circuit-breakers are required. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-226 Fuses, circuit-breakers, switches, and controllers—Disconnection of fuses before handling. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-229 Fuses, circuit-breakers, switches, and controllers—Arcing or suddenly moving parts. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-232 Fuses, circuit-breakers, switches, and controllers—Grounding noncurrent-carrying metal parts. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-235 Fuses, circuit-breakers, switches, and controllers—Guarding live parts of switches, fuses, and automatic circuit-breakers. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-238 Switchboards—Location and accessibility. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-241 Switchboards—Material and illumination. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-244 Switchboards—Necessary equipment. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-247 Switchboards—Arrangement and identification. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-250 Switchboards—Spacings and barriers against short-circuit. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-253 Switchboards—Switchboard grounding. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-256 Switchboards—Guarding live parts on switchboards. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-259 Switchboards—Instrument cases. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-262 Lightning arresters—Location. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-265 Lightning arresters—Connecting wires. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007

(Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-268 Lightning arresters—Grounding frames and cases of lightning arresters. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-271 Lightning arresters—Guarding live and arcing parts. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-274 Nature of rules—Minimum requirements. [§ 20 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-277 General requirements applying to overhead and underground lines—Design and construction. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-280 General requirements applying to overhead and underground lines—Installation and maintenance. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-283 General requirements applying to overhead and underground lines—Accessibility. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-286 General requirements applying to overhead and underground lines—Inspection and tests of lines and equipment. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-289 General requirements applying to overhead and underground lines—Isolation and guarding. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-292 General requirements applying to overhead and underground lines—Grounding of circuits and equipment. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-295 General requirements applying to overhead and underground lines—Arrangement of switches. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-298 Relations between various classes of lines—Relative levels. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-301 Relations between various classes of lines—Avoidance of conflict. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-304 Relations between various classes of lines—Joint use of poles by supply and communication circuits. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-307 Relations between various classes of lines—Separate pole lines. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-310 Clearances—General. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-313 Clearances—Horizontal clearances of supporting structures from other objects. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-316 Clearances—Vertical clearance of wires above ground or rails. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-319 Clearances—Wire-crossing clearances. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-322 Clearances—Clearances of conductors of one line from other conductors and structures. [Tables 4 and 5, filed 10/30/64, effective 12/1/64; § 23 (part), Tables 4 and 5, filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-325 Clearances—Minimum line conductor clearances and separations at supports. [Subsections (1)(b)(ii) and (1)(c)(ii), filed 10/30/64, effective 12/1/64; § 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-328 Clearances—Climbing space. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-331 Clearances—Working space. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-334 Clearances—Vertical separation between line conductors, cables, and equipment located at different levels on the same pole or structure. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-337 Clearances—Clearances of vertical and lateral conductors from other wires and surfaces on the same support. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-340 Grades of construction—General. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-343 Grades of construction—Application of grades of construction to different situations. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-346 Grades of construction—Grades of construction for conductors. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-349 Grades of construction—Grades of supporting structures. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-352 Loading for Grades B, C, and D—General loading map. [§ 25 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-355 Loading for Grades B, C, and D—Conductor loading. [§ 25 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-358 Loading for Grades B, C, and D—Loads upon line supports. [§ 25 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-361 Strength requirements—Preliminary assumptions. [§ 26 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-364 Strength requirements—Grades B and C construction. [§ 26 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-367 Strength requirements—Grade D construction. [§ 26 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-373 Line insulators—Application of rule. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-376 Line insulators—Material and marking. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-379 Line insulators—Electrical strength of insulators in strain position. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-382 Line insulators—Ratio of flash-over to puncture voltage. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-385 Line insulators—Test voltages. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-388 Line insulators—Factory tests. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-391 Line insulators—Selection of insulators. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-394 Line insulators—Protection against arcing. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-397 Line insulators—Compliance with WAC 296-44-394 at crossings. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-400 Miscellaneous requirements—Supporting structures for overhead lines. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-403 Miscellaneous requirements—Tree trimming. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-406 Miscellaneous requirements—Guying. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-409 Miscellaneous requirements—Insulators in guys attached to poles and towers. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-412 Miscellaneous requirements—Span-wire insulators. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-415 Miscellaneous requirements—Overhead conductors. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-418 Miscellaneous requirements—Equipment on poles. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-421 Miscellaneous requirements—Protection for exposed overhead communication lines. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-424 Miscellaneous requirements—Circuits of one class used exclusively in the operation of circuits of another class. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-427 Miscellaneous requirements—Overhead electric railway construction. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-430 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Location. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-433 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Construction of duct and cable systems. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-436 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Construction of manholes. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-439 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Location of cables. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-442 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Protection and separation of conductors buried in earth. [§ 29 (part), Rule 294, filed 10/30/64, effective 12/1/64; § 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-445 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Protection of conductors in duct systems and manholes. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-448 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Guarding of live parts in manholes. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-451 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Construction at risers from underground. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-454 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Identification of conductors. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-457 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Identification of apparatus connected in multiple. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-460 Installation and maintenance of electric utilization equipment—General requirements—Scope. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-463 Installation and maintenance of electric utilization equipment—General requirements. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-466 Installation and maintenance of electric utilization equipment—Reference to other codes. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-469 Installation and maintenance of electric utilization equipment—Grounding. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-472 Installation and maintenance of electric utilization equipment—Working spaces about electric equipment. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-478 Installation and maintenance of electric utilization equipment—Guarding or isolating live parts. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-481 Installation and maintenance of electric utilization equipment—Hazardous locations. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-484 Installation and maintenance of electric utilization equipment—Protection by disconnection. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-487 Installation and maintenance of electric utilization equipment—Identification of equipment. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-490 Conductors—Electrical protection. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-493 Conductors—Protective covering. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-496 Conductors—Identification of conductors and terminals. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-499 Conductors—Guarding and isolating conductors. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-502 Conductors—Guarding in damp or hazardous locations. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-505 Conductors—Precautions against excessive inductance and eddy currents. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-508 Conductors—Splicing and taping. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-511 Conductors—Uninsulated conductors. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-514 Fuses, circuit-breakers, switches and controllers—General requirements for switches. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-517 Fuses, circuit-breakers, switches and controllers—Hazardous locations. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-520 Fuses, circuit-breakers, switches and controllers—Where switches are required. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-523 Fuses, circuit-breakers, switches and controllers—Character of switches and disconnectors. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-526 Fuses, circuit-breakers, switches and controllers—Disconnection of fuses and thermal cut-outs before handling. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-529 Fuses, circuit-breakers, switches and controllers—Arcing or suddenly moving parts. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-532 Fuses, circuit-breakers, switches and controllers—Grounding noncurrent-carrying metal parts. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-535 Fuses, circuit-breakers, switches and controllers—Guarding live parts. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-538 Fuses, circuit-breakers, switches and controllers—Inclosed air-break switches (not including snap switches). [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-541 Fuses, circuit-breakers, switches and controllers—Control equipment. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-544 Switchboards and panelboards—Accessibility and convenient attendance. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-547 Switchboards and panelboards—Location and illumination. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-550 Switchboards and panelboards—Arrangement and identification. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-553 Switchboards and panelboards—Spacing, barriers and covers. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-556 Switchboards and panelboards—Grounding frames. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-559 Switchboards and panelboards—Guarding current-carrying parts. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-562 Switchboards and panelboards—Fuses on switchboards. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-565 Switchboards and panelboards—Panelboards. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-568 Motors and motor-driven machinery—Control devices. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-571 Motors and motor-driven machinery—Hazardous locations. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-574 Motors and motor-driven machinery—Deteriorating agencies. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-577 Motors and motor-driven machinery—Guards for live parts. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-580 Motors and motor-driven machinery—Grounding machine frames. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-583 Motors and motor-driven machinery—Protecting moving parts. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-586 Electric furnaces, storage batteries, transformers, and lightning arresters—Protection from burns. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-589 Electric furnaces, storage batteries, transformers, and lightning arresters—Grounding of furnace frames. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-592 Electric furnaces, storage batteries, transformers, and lightning arresters—Guarding live parts. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-595 Electric furnaces, storage batteries, transformers, and lightning arresters—Storage batteries. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-598 Electric furnaces, storage batteries, transformers, and lightning arresters—Transformers. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-601 Electric furnaces, storage batteries, transformers, and lightning arresters—Lightning arresters. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-604 Lighting fixtures and signs—Fixtures. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-607 Lighting fixtures and signs—Receptacle for convenience outlet. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-610 Lighting fixtures and signs—Exposed live parts. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-613 Lighting fixtures and signs—Signs. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-616 Lighting fixtures and signs—Connectors for signs. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-619 Lighting fixtures and signs—Lamps in series circuits. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-622 Lighting fixtures and signs—Safe access to arc lamps. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-625 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Insulation. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-628 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Grounding of frames. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-631 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Cable connectors. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-634 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Identified conductors, cords, and connectors. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-637 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Use of portables and pendants. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-640 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Portable outdoor equipment of more than 750 volts between conductors. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-643 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Insect eliminators. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-646 Electrically operated industrial locomotives, cars, cranes, hoists, and elevators—Guarding live and moving parts. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-649 Electrically operated industrial locomotives, cars, cranes, hoists, and elevators—Grounding noncurrent-carrying parts. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-652 Electrically operated industrial locomotives, cars, cranes, hoists, and elevators—Control of energy supply to cars, cranes, and industrial locomotives. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-655 Control of movement of industrial locomotives, cars, cranes, and elevators. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-658 Control of movement of industrial locomotives, cars, cranes, and elevators—Subway and car lighting. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-661 Telephone and other communication apparatus on circuits exposed to supply lines or lightning—Protective requirements. [§ 39 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-664 Telephone and other communication apparatus on circuits exposed to supply lines or lightning—Guarding current-carrying parts. [§ 39 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed

7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-667 Telephone and other communication apparatus on circuits exposed to supply lines or lightning—Grounding. [§ 39 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-670 Rules for radio and T.V. installations—Scope. [§ 50, filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-673 Classification of radio stations. [§ 51, filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007(Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-676 Antenna and counterpoise installation—Application of rules. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-679 Antenna and counterpoise installation—General requirements. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-682 Antenna and counterpoise installation—Locations to be avoided. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-685 Antenna and counterpoise installation—Ordinary construction of antenna systems. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-688 Antenna and counterpoise installation—Special construction of antenna systems. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-691 Antenna and counterpoise installation—Guarding of antennas. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-694 Antenna and counterpoise installation—Supply circuits as antennas or grounds. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-697 Lead-in conductors—Application of rules. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-700 Lead-in conductors—Material. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-703 Lead-in conductors—Size. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-706 Lead-in conductors—Installation of lead-in conductor. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-709 Construction at building entrance—Application of rules. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-712 Construction at building entrance—Entrance. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-715 Construction at building entrance—Creepage and air-gap distance. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-718 Construction at building entrance—Mechanical protection of bushings. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-721 Protective devices—Application of rules. [§ 55 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-724 Protective devices—Receiving stations. [§ 55 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-727 Protective devices—Low-power transmitting stations. [§ 55 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-730 Protective and operating grounding conductors—Application of rules. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-733 Protective and operating grounding conductors—General. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-736 Protective and operating grounding conductors—Material and size. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-739 Protective and operating grounding conductors—Installation of grounding conductors. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-742 Grounds and ground connections—Application of rules. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-745 Grounds and ground connections—Grounds. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-748 Grounds and ground connections—Attachment to pipes. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-751 Grounds and ground connections—Attachment to driven pipes, rods, or buried plates. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-754 Connection to power supply lines—Application of rules. [§ 58 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-757 Connection to power supply lines—Receiving stations and low-power transmitting stations. [§ 58 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-760 Batteries—Application of rules. [§ 59 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-763 Batteries—Care in handling. [§ 59 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-766 Batteries—Portable batteries. [§ 59 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

PART A—INTRODUCTION

WAC 296-44-005 Preface. Pursuant to the provisions of RCW 43.22.050 and 49.17.010 these regulations are adopted to provide safe construction standards. They can contribute materially to the standard of service rendered by the utilities and also for the means of coordination between different types of lines such as power lines. These regulations formulate uniform requirements for electrical construction and installations, the application of which shall ensure adequate service and secure safety to persons engaged in the construction, installation, maintenance, operation, or use of electrical lines and equipment. These regulations are not to be construed as superceding existing statutes relating to electrical construction and installations as in RCW 19.29.010 through 19.29.060. Rules in this code which are mandatory are characterized by the use of the word "shall." Where a rule is of an advisory nature it is indicated by the use of the word "should." Other practices which are considered desirable and not intended to be mandatory are referred to as recommendations. It is realized that conditions may exist which necessitate departures from such recommendations. Preparation of these revisions was completed through an advisory committee composed of representatives of the electrical utilities and communications companies, and labor, appointed by the assistant director for the department of labor and industries, division of industrial safety and health.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-005, filed 7/25/86; Preface (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-010 Definitions of special terms. (1) "Administrative authority" means the department of labor and industries through the supervisor of the division of safety.

(2) "Alive or live" means electrically connected to a source of potential difference, or electrically charged so as to have a potential different from that of the earth. The term "live" is sometimes used in place of the term "current-carrying," where the intent is clear, to avoid repetitions of the longer term.

(3) "Appliance" means current-consuming equipment, fixed or portable; for example, heating, cooking, and small motor-operated equipment.

(4) "Arm or crossarm" means a horizontal support attached to poles or structures generally at right angles to the conductor supported.

(5) "Arm, buck" means a crossarm used to change the direction of all or part of the conductors on the line arm immediately above or below. A buck arm is generally placed at right angles to the line arm.

(6) "Arm, clearance" means a crossarm supporting conductors installed on a pole of another line for the purpose of maintaining the prescribed clearances of these rules which, if the other line did not exist, could be maintained without such clearance arm.

(7) "Automatic" means self-acting, operating by its own mechanism when actuated by some impersonal influence - as, for example, a change in current strength; not manual, without personal intervention. Remote control that requires personal intervention is not automatic, but manual.

(8) "Bridge" means a structure which is used primarily for foot, vehicular or train traffic as distinguished from those which span certain areas and support signals or wires and which are classed as supporting poles, towers or structures.

(9) "Cable" means a stranded conductor (single conductor cable) or a combination of conductors insulated from one another (multiple-conductor cable).

(10) "Cable vault." (See definition of "manhole.")

(11) "Catenary construction" is that type of construction where an auxiliary wire or messenger is used to assist in supporting in desired alignment trolley contact wire, cables or large conductors that are incapable of supporting themselves in this desired alignment.

(12) "Circuit" means a conductor or system of conductors through which an electric current is intended to flow.

(13) "Circuit breaker" means a device designed to open under abnormal conditions a current-carrying circuit without injury to itself. The term as used in this code applies only to the automatic type designed to trip on a predetermined overload of current.

(14) "Circuits, railway signal" means those supply and communication circuits used primarily for supplying energy for controlling the operation of railway block signals, highway crossing signals, interlocking apparatus and their appurtenances.

(15) "Circuits, supply" means those circuits which are used for transmitting a supply of electrical energy.

(16) "Climbing space" means the space reserved along the surface of a pole or structure to permit ready access for linemen to equipment and conductors located on the pole or structure.

(17) "Common neutral system" is a system in which one conductor is used as the neutral for 2 or more different circuits; one conductor is used as the neutral for both primary and secondary circuits of a distribution system.

(18) "Common use" means simultaneous use by two or more utilities of the same kind.

(19) "Conductor" means a metallic conducting material, usually in the form of a wire or cable, suitable for carrying an electric current. Does not include bus bars.

(20) "Conductor, grounding" means a conductor which is used to connect the equipment or the wiring system with a grounding electrode or electrodes.

(21) "Conductor, lateral" means a conductor extending in a general horizontal direction and usually at an angle of approximately 90 degrees to the direction of the line conductors.

(22) "Conductor, line" means one of the wires or cables carrying electric current, supported by poles, towers, or other structures, but not including vertical or lateral connecting wires.

(23) "Conductors, open" means conductors separately and individually supported.

(24) "Conductors, unprotected" means supply conductors not covered by a "suitable protective covering," grounded metal conduit, grounded metal sheath or shield, or impregnated fiber.

(25) "Conductor, vertical" means, in pole wiring work, a wire or cable extending in an approximately vertical direction.

(26) "Conflict, antenna" means that an antenna or its guy wire is at a higher level than a supply or communication

conductor and approximately parallel thereto, provided the breaking of the antenna or its support will be likely to result in contact between the antenna or guy wire and the supply or communication conductor.

(27) "Conflict, conductor" means that a conductor is so situated with respect to a conductor of another line at a lower level that the horizontal distance between them is less than the sum of the following values:

(a) Five feet.

(b) One-half the difference of level between the conductors concerned.

(c) The value required in Tables 6, 7, or 8 (WAC 296-44-325) for horizontal separation between conductors on the same support for the highest voltage carried by either conductor concerned. (See illustration at end of this section.)

(28) "Conflict, structure" (as applied to a pole line) means that the line is so situated with respect to a second line that the overturning (at the ground line) of the first line will result in contact between its poles or conductors and the conductors of the second line, assuming that no conductors are broken in either line. (See illustration at end of this section.)

EXCEPTIONS: Lines are not considered as conflicting under the following conditions:

(a) Where one line crosses another.

(b) Where two lines are on opposite sides of a highway, street, or alley and are separated by a distance not less than 60 percent of the height of the taller pole line and not less than 20 feet.

(29) "Current-carrying part" means a conducting part intended to be connected in an electric circuit to a source of voltage. Noncurrent-carrying parts are those not intended to be so connected.

(30) "Dead" means free from any electric connection to a source of potential difference and from electric charge; not having a potential different from that of the earth. The term is used only with reference to current-carrying parts which are sometimes alive.

(31) "Dead end" means the act, point or equipment used to transfer the mechanical tension in conductors from the conductors to noncurrent-carrying parts of a structure used to support the conductors and still maintain the insulating requirements of the conductors dead-ended.

(32) "Device" means a unit of an electric wiring system which is intended to carry but not consume electric energy.

(33) "Disconnector" means a switch which is intended to open a circuit only after the load has been thrown off by some other means.

(34) "Districts, loading" means those areas in which the specified loadings of these rules apply and are known as "heavy," "medium," and "light" loading districts.

(35) "Districts, rural" means all places not urban, usually in the country, but in some cases within city limits.

(36) "District, urban" means thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. A highway, even though in the country, on which the traffic is often very heavy, is considered as urban.

(37) "Division of safety" means the division of safety of the department of labor and industries.

(38) "Duct" means (in underground work) a single tubular runway for underground cables.

(39) "Electrical supply station" means any building, room, or separate space within which electric-supply equipment is located and the interior of which is accessible, as a rule, only to properly qualified persons.

Note: This includes generating stations and substations and generator, storage-battery, and transformer rooms, but excludes manholes and isolated-transformer vaults on private premises. (See definition of "transformer vault.")

(40) "Electrode, grounding" means a suitable metallic conducting material (generally copper or copper clad) imbedded in the earth and used for maintaining ground potential on conductors connected to it and for dissipating into the earth such electric current as may be impressed upon it.

(41) "Equipment" means a general term including fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electric installation.

(42) "Equipment, electric supply" means equipment which produces, modifies, regulates controls, or safeguards a supply of electric energy. Similar equipment, however, is not included where used in connection with signaling systems under the following conditions;

(a) Where the voltage does not exceed 150 volts.

(b) Where the voltage is between 150 and 550 volts, and the power transmitted does not exceed 3.2 kilowatts.

(43) "Equipment, utilization" means equipment, devices, and connected wiring which utilize electric energy for mechanical, chemical, heating, lighting, testing, or similar purposes and are not a part of supply equipment, supply lines, or communication lines.

(44) "Explosion-proof" means capable of withstanding without injury and without transmitting flame to the outside any explosion of gas which may occur within.

(45) "Exposed":

(a) "Applied to circuits" or lines means in such a position that in case of failure of supports or insulation contact with another circuit or line may result.

(b) "Applied to equipment" means that an object or device can be inadvertently touched or approached nearer than a safe distance by any person. It is applied to objects not suitably guarded or isolated.

(46) "Externally operable" means capable of being operated without exposing the operator to contact with live parts.

Note: This term is applied to equipment, such as a switch, that is inclosed in a case or cabinet.

(47) "Ground connection" means the equipment used in establishing a conducting path between an electric circuit or equipment and earth. A ground connection consists of a ground conductor, a ground electrode and the earth (soil, rock, etc.) which surrounds the electrode.

(48) "Grounded" means connected to earth by a ground connection or by an unintentional conducting path.

(49) "Grounded, effectively" means permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient current-carrying capacity to prevent the building up of voltages which may result in undue hazard to connected equipment or to persons.

(50) "Grounded, system" means a system of conductors in which at least one conductor or point (usually the middle wire, or neutral point of transformer or generator windings) is intentionally grounded, either solidly or through a current-limiting device.

(51) "Guarded" means covered, shielded, fenced, inclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats or platforms, to remove the liability of dangerous contact or approach by persons or objects to a point of danger.

(52) "Guy" means a tension member (a solid wire or stranded wires) used to withstand an otherwise unbalanced force on a pole, crossarm, or other overhead line structure.

(53) "Guy, anchor" means a guy which has its lower anchorage in the earth and includes a sidewalk or ground guy.

(54) "Guy, overhead (span)" means a guy extending from a pole, crossarm, or structure to a pole, crossarm, or structure.

(55) "Handhole" means an opening in an underground system into which workmen reach, but do not enter.

(56) "Identification" means, for the purpose of these rules, to identify or identification, shall mean that method of coloring, lettering, numbering, marking or maintaining in any certain position in relation to other objects, the same wire, cable pipe, circuit, phases, or other material objects throughout the installation.

(57) "Inclosed" means surrounded by a case which will prevent accidental contact of a person with live parts. A solid inclosure means one which will neither admit accumulations of flyings or dust, nor transmit sparks or flying particles to the accumulations outside.

(58) "Insulated" means separated from other conducting surfaces by a dielectric substance or air space permanently offering a high resistance to the passage of current and to disruptive discharge through the substance or space.

Note: When any object is said to be insulated, it is understood to be insulated in suitable manner for the conditions to which it is subjected. Otherwise, it is, within the purpose of these rules, uninsulated. Insulating coverings of conductors is one means for making the conductors insulated.

(59) "Insulating" (where applied to the covering of a conductor, or to clothing, guards, rods, and other safety devices) means that a device, when interposed between a person and current-carrying parts, protects the person making use of it against electric shock from the current-carrying parts with which the device is intended to be used; the opposite of conducting.

(60) "Isolated" means that an object is not readily accessible to persons unless special means for access are used.

(61) "Isolation by elevation" means elevated sufficiently so that persons may safely walk underneath.

(62) "Joint use" means simultaneous use by two or more kinds of utilities.

(63) "Lightning arrester" means a device which has the property of reducing the voltage of a surge applied to its terminals, is capable of interrupting follow current if present, and restores itself to its original operating conditions.

(64) "Lines."

(a) Communication lines means the conductors and their supporting or containing structures which are located outside of buildings and are used for public or private signal or communication service, and which operate at not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When operating at less than 150 volts no limit is placed on the capacity of the system.

Note: Telephone, telegraph, railroad-signal, messenger-call, clock, fire or police-alarm and other systems conforming with the above are included.

Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so run.

Exception is made under certain conditions for communication circuits used in the operation of supply lines. (See WAC 296-44-424(1).)

(b) "Communication lines, minor" means communication lines carrying not more than two circuits used mainly for local telephone or telegraph service, or for police or fire-alarm service.

(c) "Electric supply" means those conductors and their necessary supporting or containing structures which are located entirely outside of buildings and are used for transmitting a supply of electric energy.

Does not include open wiring on buildings, in yards or similar locations where spans are less than 20 feet, and all the precautions required for stations or utilization equipment, as the case may be, are observed.

Railway signal lines of more than 400 volts to ground are always supply lines within the meaning of these rules, and those of less than 400 volts may be considered as supply lines, if so run and operated throughout.

(65) "Low voltage protection" means the effect of a device operative on the reduction or failure of voltage to cause and maintain the interruption of power supply to the equipment protected.

(66) "Low voltage release" means the effect of a device operative on the reduction or failure of voltage to cause the interruption of power supply to the equipment, but not preventing the reestablishment of the power supply on return of voltage.

(67) "Maintenance" means the work done on any line or any element of any line for the purpose of extending its life (excepting the replacement of the supporting poles or structures) and includes the replacement, for any reason, of crossarms, pins, insulators, wires, cables, messengers, etc., but does not contemplate the addition of elements (excepting pole stubs and guy wires) which will change the identity of the structure.

(68) "Manhole" (more accurately termed splicing chamber or cable vault) means an opening in an underground system which workmen or others may enter for the purpose of installing cables, transformers, junction boxes, and other devices, and for making connections and tests.

(69) "Manual" means capable of being operated by personal intervention.

(70) "Messenger" means stranded wire which generally is not a part of the conducting system, its primary function being to support wires or cables of the conducting system; sometimes called "suspension strand."

(71) "Minor tracks" means railway tracks included in the following list:

(a) Spurs less than 2,000 feet long and not exceeding two tracks in the same span.

(b) Branches on which no regular service is maintained or which are not operated during the winter season.

(c) Narrow-gage tracks or other tracks on which standard rolling stock cannot, for physical reasons, be operated.

(d) Tracks used only temporarily for a period not exceeding 1 year.

(e) Tracks not operated as a public utility, such as industrial railways used in logging, mining, etc.

(72) "Multi-grounded system" means a system in which the neutral conductor is grounded at many places.

(73) "Objectionable flow of current," in grounding conductors, means any measurable amount of current flowing to earth which can be attributed to inadequately or improperly installed metallic return to sources of supply.

(74) "Open wire" means a conductor or pair of conductors separately supported above the surface of the ground.

(75) "Panelboard" means a single panel, or a group of panel units designed for assembly in the form of a single panel, including buses and with or without switches and/or automatic overcurrent-protective devices for the control of light, heat, or power circuits of small individual as well as aggregate capacity; designed to be placed in a cabinet or cut-out box placed in or against a wall or partition, and accessible only from the front. (See definition of "switchboard.")

(76) "Pole face" means that side of the pole on which crossarms are attached, or which is so designated by the utilities owning or operating the pole.

(77) "Qualified" means familiar with the construction and operation of the apparatus and the hazards involved.

(78) "Raceway" means any channel for loosely holding wires or cables in interior work, which is designed expressly and used solely for this purpose. Raceways may be of metal, wood, or insulating material, and the term includes wood and metal moldings consisting of a backing and capping, and also metal ducts into which wires are to be pulled.

(79) "Racks, vertical (secondary racks)" for the purpose of these rules shall include individual supports in rack configuration used for the support of conductors of 0 to 750 volts.

(80) "Reconstruction" means replacement of any portion of an existing installation by new equipment or construction. Does not include ordinary maintenance replacements.

(81) "Risers" means conductors which extend below the ground line and are generally installed on the surfaces of poles.

(82) "Sag":

(a) "Apparent sag at any point" means the departure of the wire at the particular point in the span from the straight line between the two points of support of the span, at 60°F, with no wind loading.

(b) "Apparent sag of a span" means the maximum departure of the wire in a given span from the straight line between the two points of support of the span, at 60°F, with no wind loading.

(c) "Final unloaded sag" means the sag of a conductor after it has been subjected for an appreciable period to the loading prescribed for the loading district in which it is situated, or equivalent loading, and the loading removed.

(d) "Initial unloaded sag" means the sag of a conductor prior to the application of any external load.

(e) "Maximum total sag" means the total sag at the midpoint of the straight line joining the two points of support of the conductor.

(f) "Total sag" means the distance measured vertically from any point of a conductor to the straight line joining its two points of support, under conditions of ice loading equivalent to the total resultant loading for the district in which it is located.

(g) "Unloaded sag of a conductor at any point in a span" means the distance measured vertically from the particular point in the conductor to a straight line between two points of support, without any external load.

(83) "Service" means the conductors and equipment for delivering electric energy from the secondary distribution or street main, or other distribution feeder, or from the transformer to the wiring system of the premises served.

(84) "Service drops" means the conductors strung between a pole line and a building or structure.

(85) "Span length" means the horizontal distance between two adjacent supporting points of a conductor.

(86) "Span wire" means a wire or cable used as an auxiliary support for wires, cables, or other equipment. As applied to trolley construction, it means a wire or cable used to support laterally, or which is attached to wires which support laterally, trolley contact conductors and appurtenances in electrical contact therewith, including wires commonly referred to as cross-span wires, bracket-span wires, pull-offs, trolley strain guys, dead ends, etc.

(87) "Splicing chamber." (See definition of "manhole.")

(88) "Substantial" means so constructed and arranged as to be of adequate strength and durability for the service to be performed under the prevailing conditions.

(89) "Supervisor" means the supervisor of the division of safety.

(90) "Switch" means a device for opening and closing or for changing the connection of a circuit. In these rules, a switch will always be understood to be manually operated, unless otherwise stated.

(91) "Switchboard" means a large single panel, frame, or assembly of panels, on which are mounted (on the face, or back, or both) switches, fuses, busses, and usually instruments.

(92) "Tags" means "men at work" tags of distinctive appearance, indicating that the equipment or lines so marked are being worked on.

(93) "Tension":

(a) "Final unloaded conductor tension" means the longitudinal tension in a conductor after the conductor has been stretched by the application for an appreciable period, and subsequent release, of the loadings of ice and wind, and temperature decrease, assumed for the loading district in which the conductor is strung (or equivalent loading).

(b) "Initial conductor tension" means the longitudinal tension in a conductor prior to the application of any external load.

(94) "Transformer vault" means an isolated inclosure either above or below ground with fire-resistant walls, ceiling, and floor, in which transformers and related equipment are installed, and which is not continuously attended during operation.

(95) "Voltage of a circuit" means the highest effective voltage between any two conductors of the circuit concerned.

Exception: Voltage of a grounded multiwire circuit, not exceeding 750 volts between any two conductors, means the highest effective voltage between any wire of the circuit and that point or conductor of the circuit which is grounded.

If one circuit is directly connected to another circuit of higher voltage (as in the case of an autotransformer), both are considered as of the higher voltage, unless the circuit of lower voltage is effectively grounded, in which case its voltage is not determined by the circuit of higher voltage. Direct connection implies electric connection as distinguished from connection merely through electromagnetic or electrostatic induction.

(96) "Voltage to ground of":

(a) A "grounded circuit" means the highest effective voltage between any conductor of the circuit and that point or conductor of the circuit which is grounded.

(b) An "ungrounded circuit" means the highest effective voltage between any two conductors of the circuit concerned.

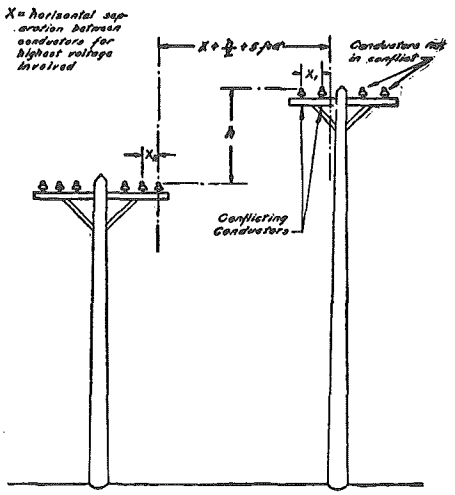
A "conductor of":

(a) A "grounded circuit" means the highest effective voltage between such conductor and that point or conductor of the circuit which is grounded.

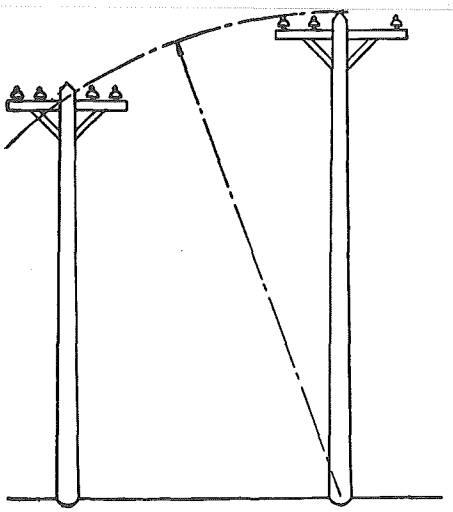
(b) An "ungrounded circuit" means the highest effective voltage between such conductor and any other conductor of the circuit concerned.

(97) "Wire gages": The American Wire Gage (AWG), otherwise known as Brown & Sharpe (B&S), is the standard gage for copper, aluminum, and other conductors, excepting steel, for which the Steel Wire Gage (Stl. WG) is used throughout these rules.

(98) "Working space, lateral" means the space reserved for working between conductor levels outside the climbing space, and to its right and left.



Conductor Conflict



Structure Conflict

[§ 1, filed 3/23/60, effective 12/1/58.]

WAC 296-44-011 Definitions of special terms applicable to this chapter. (1) "Administrative authority" means the department of labor and industries through the assistant director of the division of industrial safety and health.

(2) "Alive or live" means electrically connected to a source of potential difference, or electrically charged so as to have a potential different from that of the earth. The term "live" is sometimes used in place of the term "current-carrying," where the intent is clear, to avoid repetitions of the longer term.

(3) "Appliance" means current-consuming equipment, fixed or portable; for example, heating, cooking, and small motor-operated equipment.

(4) "Approved" means meets or exceeds the recognized standards of safety within the industry.

(5) "Arm or crossarm" means a horizontal support attached to poles or structures generally at right angles to the conductor supported.

(6) "Arm, buck" means a crossarm used to change the direction of all or part of the conductors on the line arm immediately above or below. A buck arm is generally placed at right angles to the line arm.

(7) "Arm, clearance" means a crossarm supporting conductors installed on a pole of another line for the purpose of maintaining the prescribed clearances of these rules which, if the other line did not exist, could be maintained without such clearance arm.

(8) "Automatic" means self-acting, operating by its own mechanism when actuated by some impersonal influence - as, for example, a change in current strength; not manual, without personal intervention. Remote control that requires personal intervention is not automatic, but manual.

(9) "Backfill (noun)" means materials such as sand, crushed stone, or soil, which are placed to fill an excavation.

(10) "Ballast section (railroads)" means the section of material, generally trap rock, which provides support under railroad tracks.

(11) "Bonding" means the electrical interconnecting of conductive parts, designed to maintain a common electrical potential.

(12) "Bridge" means a structure which is used primarily for foot, vehicular, or train traffic as distinguished from those which span certain areas and support signals or wires and which are classed as supporting poles, towers, or structures.

(13) "Cable" means a conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable) or a combination of conductors insulated from one another (multiple-conductor cable).

(14) "Spacer cable" is a type of electric supply line construction consisting of an assembly of one or more covered conductors, separated from each other and supported from a messenger by insulating spacers.

(15) "Cable jacket" means a protective covering over the insulation, core, or sheath of a cable.

(16) "Cable sheath" means a conductive protective covering applied to cables.

Note: A cable sheath may consist of multiple layers of which one or more is conductive.

(17) "Cable terminal" means a device which provides insulated egress for the conductors. Syn: Termination.

(18) "Cable vault." (See definition of "manhole.")

(19) "Catenary construction" is that type of construction where an auxiliary wire or messenger is used to assist in supporting in desired alignment trolley contact wire, cables or large conductors that are incapable of supporting themselves in this desired alignment.

(20) "Circuit" means a conductor or system of conductors through which an electric current is intended to flow.

(21) "Circuit breaker" means a switching device capable of making, carrying and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal condition such as those of short circuits.

(22) "Circuits, railway signal" means those supply and communication circuits used primarily for supplying energy for controlling the operation of railway block signals, highway crossing signals, interlocking apparatus and their appurtenances.

(23) "Circuits, supply" means those circuits which are used for transmitting a supply of electrical energy.

(24) "Climbing space" means the space reserved along the surface of a pole or structure to permit ready access for linemen to equipment and conductors located on the pole or structure.

(25) "Common neutral system" is a system in which one conductor is used as the neutral for two or more different circuits; one conductor is used as the neutral for both primary and secondary circuits of a distribution system.

(26) "Common use" means simultaneous use by two or more utilities of the same kind.

(27) "Conductor":

(a) A material, usually in the form of a wire, cable, or bus bar, suitable for carrying an electric circuit.

(b) "Bundled conductor": An assembly of two or more conductors used as a single conductor and employing spacers to maintain a predetermined configuration. The individual conductors of this assembly are called subconductors.

(c) "Covered conductor": A conductor covered with a dielectric having no rated insulating strength or having a rated insulating strength less than the voltage of the circuit in which the conductor is used.

(d) "Grounded conductor": A conductor which is intentionally grounded, either solidly or through a noninterrupting current-limiting device.

(e) "Grounding conductor": A conductor which is used to connect the equipment or the wiring system with a grounding electrode or electrodes.

(f) "Insulated conductor": A conductor covered with a dielectric (other than air) having a rated insulating strength equal to or greater than the voltage of the circuit in which it is used.

(g) "Lateral conductor": A wire or cable extending in a general horizontal direction at an angle to the general direction of the line conductors.

(h) "Line conductor" (overhead supply or communication lines): A wire or cable intended to carry electric currents, extending along the route of the line, supported by poles, towers, or other structures, but not including vertical or lateral conductors.

(i) "Open conductor": A type of electric supply or communication line construction in which the conductors are bare, covered or insulated and without grounding shielding and individually supported at the structure either directly or with insulators. Syn: Open wire.

(j) "Conductor shielding": An envelope which encloses the conductor of a cable and provides an equipotential surface in contact with the cable insulation.

(28) "Conduit" means a structure containing one or more ducts.

Note: Conduit may be designated as iron pipe conduit, tile conduit, etc. If it contains one duct only it is called single-duct conduit; if it contains more than one duct, it is called multiple-duct conduit; usually with the number of ducts as a prefix, for example, two-duct multiple conduit.

(29) "Conduit system" means any combination of duct, conduit, conduits, manholes, handholes, and vaults joined to form an integrated whole.

(30) "Conflict, antenna" means that an antenna or its guy wire is at a higher level than a supply or communication conductor and approximately parallel thereto, provided the breaking of the antenna or its support will be likely to result in contact between the antenna or guy wire and the supply or communication conductor.

(31) "Conflict, conductor" means that a conductor is so situated with respect to a conductor of another line at a lower level that the horizontal distance between them is less than the sum of the following values:

(a) Five feet.

(b) One-half the difference of level between the conductors concerned.

(c) The value required in Tables 6, 7, or 8 for horizontal separation between conductors on the same support for the highest voltage carried by either conductor concerned. (See illustration.)

(32) "Conflict, structure" (as applied to a pole line) means that the line is so situated with respect to a second line that the overturning at the ground line of the first line

will result in contact between its poles or conductors and the conductors of the second line, assuming that no conductors are broken in either line. (See illustration.)

Notes:
Lines are not considered as conflicting under the following conditions:
(a) Where one line crosses another.
(b) Where two lines are on opposite sides of a highway, street, or alley and are separated by a distance of not less than sixty percent of the height of the taller pole line and not less than twenty feet.

(33) "Current-carrying part" means a conducting part intended to be connected in an electric circuit to a source of voltage. Noncurrent-carrying parts are those not intended to be so connected.

(34) "Dead" means free from any electric connection to a source of potential difference and from electric charge; not having a potential different from that of the earth. The term is used only with reference to current-carrying parts which are sometimes alive.

(35) "Dead end" means the act, point or equipment used to transfer the mechanical tension in conductors from the conductors to noncurrent-carrying parts of a structure used to support the conductors and still maintain the insulating requirements of the conductors dead-ended.

(36) "Deenergized" means free from any electrical connection to a source of potential difference and from electric charge; not having a potential different from that of earth.

(37) "Device" means a unit of an electric wiring system which is intended to carry but not consume electric energy.

(38) "Disconnecting or isolating switch" means a mechanical switching device used for changing the connections in a circuit, or for isolating a circuit or equipment from a source of power.

Note: It is required to carry normal load current continuously, and also abnormal or short-circuit current for short intervals as specified. It is also required to open or close circuits either when negligible current is broken or made, or when no significant change in the voltage across the terminals of each of the switch poles occurs. Syn: Disconnector, isolator.

(39) "Districts, loading" means those areas in which the specified loadings of these rules apply and are known as "heavy," "medium," and "light" loading districts.

(40) "Districts, rural" means all places not urban, usually in the country, but in some cases, within the city limits.

(41) "Districts, urban" means thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. A highway, even though in the country, on which the traffic is often heavy, is considered as urban.

(42) "Division of industrial safety and health" means the division of industrial safety and health of the department of labor and industries.

(43) "Duct" means a single enclosed raceway for conductors or cable.

(44) "Effectively grounded" means intentionally connected to earth through a grounded connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent the build-up of voltages which may result in undue hazard to connected equipment or to persons.

(45) "Electric supply equipment" means equipment which produces, modifies, regulates, controls, or safeguards a supply of electric energy. Syn: Supply equipment.

(46) "Electric supply station" means any building, room, or separate space within which electric-supply equipment is located and the interior of which is accessible, as a rule, only to properly qualified persons.

Note: This includes generating stations and substations and generator, storage-battery, transformer rooms, but excludes manholes and isolated-transformer vaults on private premises. (See definition of transformer vaults.)

(47) "Electrode, grounding" means a suitable metallic conducting material (generally copper or copper clad) imbedded in the earth and used for maintaining ground potential on conductors connected to it and for dissipating into the earth such electric current as may be impressed upon it.

(48) "Energized" means electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of earth in the vicinity.

(49) "Equipment" means a general term including fittings, devices, appliances, fixtures, apparatus, and similar terms used as part of or in connection with an electric supply or communication system.

(50) "Equipment utilization" means equipment, devices, and connected wiring which utilize electric energy for mechanical, chemical, heating, lighting, testing, or similar purposes and are not a part of supply equipment, supply lines, or communication lines.

(51) "Explosion proof" means capable of withstanding without injury and without transmitting flame to the outside any explosion of gas which may occur within.

(52) "Explosion proof apparatus" means apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such an external temperature that a surrounding flammable atmosphere will not be ignited thereby.

(53) "Exposed" means not isolated or guarded.

(54) "Externally operable" means capable of being operated without exposing the operator to contact with live parts.

(55) "Fireproofing (of cables)" means the application of a fire-resistant covering.

(56) "Ground connection" means the equipment used in establishing a conducting path between an electric circuit or equipment and earth. A grounded connection consists of a ground conductor, a ground electrode, and the earth (soil, rock, etc.) which surrounds the electrode.

(57) "Grounded" means connected to or in contact with earth or connected to some extended conductive body which serves instead of the earth.

(58) "Grounded effectively" means permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient current-carrying capacity to prevent the build-up of voltages which may result in undue hazard to connected equipment or to persons. (See effectively grounded.)

(59) "Grounded system" means a system of conductors in which at least one conductor or point (usually the middle wire, or neutral point of transformer or generator windings) is intentionally grounded, either solidly or through a current-limiting device.

(60) "Guarded" means covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats or platforms, designed to minimize the possibility under normal conditions, of dangerous approach or accidental contact by persons or objects.

Note: Wires which are insulated, but not otherwise protected, are not considered as guarded.

(61) "Guy" means a tension member (a solid wire or stranded wires) used to withstand an otherwise unbalanced force on a pole, crossarm, or other overhead line structure.

(62) "Guy, anchor" means a guy which has its lower anchorage in the earth and includes a sidewalk or ground guy.

(63) "Guy, overhead (span)" means a guy extending from a pole, crossarm, or structure to a pole, crossarm, or structure.

(64) "Handhole" means an access opening, provided in equipment or in a below-the-surface enclosure in connection with underground lines, into which workers reach but do not enter, for the purpose of installing, operating, or maintaining equipment or cable or both.

(65) "Identification" means for the purpose of these rules, to identify, or identification shall mean that method of coloring, lettering, numbering, marking, or maintaining in any certain position in relation to other objects, the same wire, cable pipe, circuit, phases, or other objects throughout the installation.

(66) "Inclosed" means surrounded by a case which will prevent accidental contact of a person with live parts. A solid inclosure means one which will neither admit accumulations of flyings or dust, nor transmit sparks or flying particles to the accumulations outside.

(67) "Insulated" means separated from other conducting surfaces by a dielectric substance or air space permanently offering a high resistance to the passage or current and to disruptive discharge through the substance or space.

Note: When any object is said to be insulated, it is understood to be insulated in suitable manner for the conditions to which it is subjected. Otherwise, it is within the purpose of these rules, uninsulated. Insulating coverings of conductors is one means for making the conductors insulated.

(68) "Insulating (where applied to the covering of a conductor, or to clothing, guards, rods, and other safety devices)" means that a device when interposed between a person and current-carrying parts, protects the person making use of it against electric shock from the current-carrying parts with which the device is intended to be used; the opposite of conducting.

(69) "Insulation (as applied to cable)" means that which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

(70) "Insulation shielding" means an envelope which encloses the insulation of a cable and provides an equipotential surface in contact with the cable insulation.

(71) "Insulator" means insulating material in a form designed to support a conductor physically and electrically separate it from another conductor or object.

(72) "Isolated" means that an object is not readily accessible to persons unless special means for access are used.

(73) "Isolated by elevation" means elevated sufficiently so that persons may safely walk underneath.

(74) "Isolator" (See disconnecting or isolating switch.)

(75) "Jacket" means a protective covering over the insulation, core, or sheath of a cable.

(76) "Joint use" means simultaneous use by two or more kinds of utilities.

(77) "Lightning arrester" means a device which has the property of reducing the voltage of a surge applied to its terminals, is capable of interrupting follow current if present and restores itself to its original operating conditions.

(78) "Lines:"

(a) "Communication lines" means the conductors and their supporting or containing structures which are located outside of buildings and are used for public or private signal or communication service, and which operate at not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When operating at less than 150 volts no limit is placed on the capacity of the system.

Note: Telephone, telegraph, railroad-signal, messenger-call, clock, fire or police-alarm and other systems conforming with the above are included. Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so run. Exception is made under certain conditions for communication circuits used in the operation of supply lines.

(b) "Electrical supply lines" means those conductors and their necessary supporting or containing structures which are located entirely outside of buildings and are used for transmitting a supply of electric energy.

Note: Does not include open wiring on buildings, in yards or similar locations where spans are less than twenty feet, and all the precautions required for stations or utilization equipment, as the case may be, are observed. Railway signal lines of more than 400 volts to ground are always supply lines within the meaning of these rules; those of less than 400 volts may be considered as supply lines, if so run and operated throughout.

(79) "Low voltage protection" means the effect of a device operative on the reduction or failure of voltage to cause and maintain the interruption of power supply to the equipment protected.

(80) "Low voltage release" means the effect of a device operative on the reduction or failure of voltage to cause the interruption of power supply to the equipment, but not preventing the reestablishment of the power supply on return of voltage.

(81) "Maintenance" means the work done on any line or any element of any line for the purpose of extending its life (excepting the replacement of the supporting poles or structures); includes the replacement, for any reason, of crossarms, pins, insulators, wires, cables, messengers, etc., but does not contemplate the addition of elements (excepting pole stubs and guy wires) which will change the identity of the structure.

(82) "Manhole" means an opening in an underground system which workers or others may enter for the purpose of installing cables, transformers, junction boxes, and other devices, and for making connections and tests.

(83) "Manhole cover" means a removable lid which closes the opening to a manhole or similar subsurface enclosure.

(84) "Manhole grating" means a grid which provides ventilation and a protective cover for a manhole opening.

(85) "Manual" means capable of being operated by personal intervention.

(86) "Messenger" means stranded wire which generally is not a part of the conducting system, its primary function being to support wires or cables of the conducting system; sometimes called "suspension strand."

(87) "Minor tracks" means railway tracks included in the following list:

(a) Spurs less than two thousand feet long and not exceeding two tracks in the same span.

(b) Branches on which no regular service is maintained or which are not operated during the winter season.

(c) Narrow-gage tracks or other tracks on which standard rolling stock cannot, for physical reasons, be operated.

(d) Tracks used only temporarily for a period not exceeding one year.

(e) Tracks not operated as a public utility, such as industrial railways used in logging, mining, etc.

(88) "Multigrounded system" means a system in which the neutral conductor is grounded at many places.

(89) "Objectionable flow of current" in grounding conductors, means any measurable amount of current flowing to earth which can be attributed to inadequately or improperly installed metallic return to sources of supply.

(90) "Open wire" means a conductor or pair of conductors separately supported above the surface of the ground.

(91) "Pad-mounted equipment" is a general term describing enclosed equipment, the exterior of which enclosure is at ground potential, positioned on a surface-mounted pad.

(92) "Panelboard" means a single panel, or a group of panel units designed for assembly in the form of a single panel, including buses and with or without switches and/or automatic overcurrent-protective devices for the control of light, heat, or power circuits of small individual as well as aggregate capacity; designed to be placed in a cabinet or cut-out box placed in or against a wall or partition, and accessible only from the front. (See definition of switchboard.)

(93) "Pole face" means that side of the pole on which crossarms are attached, or which is so designated by the utilities owning or operating the pole.

(94) "Prestressed concrete structures" means concrete structures which include metal tendons that are tensioned and anchored either before or after curing of the concrete.

(95) "Pulling iron" means an anchor secured in the wall, ceiling, or floor of a manhole or vault to attach rigging used to pull cable.

(96) "Pulling tension" is the longitudinal force exerted on a cable during installation.

(97) "Qualified" means a person who is familiar with the construction of, or operation of such lines and/or equipment that concerns his position and who is fully aware of the hazards connected therewith, or, one who has passed a journeyman's examination for the particular branch of the electrical trades with which he may be connected.

(98) "Raceway" means any channel for loosely holding wires or cables in interior work, which is designed expressly and used solely for this purpose. Raceways may be of metal, wood, or insulating material, and the term includes wood and metal moldings consisting of a backing and capping, and also metal ducts into which wires are to be pulled.

(99) "Random separation" means installed with no deliberate separation.

(100) "Racks, vertical (secondary racks)" for the purpose of these rules shall include individual supports in rack configuration used for the support of conductors of 0 to 750 volts.

(101) "Reconstruction" means replacement of any portion of an existing installation by new equipment or construction. Does not include ordinary maintenance replacements.

(102) "Readily climbable" means having sufficient handholds and footholds to permit an average person to climb easily without using a ladder or other special equipment.

(103) "Remotely operable (as applied to equipment)" means capable of being operated from a position external to the structure in which it is installed or from a protected position within the structure.

(104) "Risers" means conductors which extend below the ground line and are generally installed on the surfaces of poles.

(105) "Roadway" means the portion of highway, including shoulders, for vehicular use.

Note: A divided highway has two or more roadways.

(106) "Rural districts": All places not urban. This may include thinly settled areas within the city limits.

(107) "Sag":

(a) The distance measured vertically from a conductor to the straight line joining its two points of support. Unless otherwise stated in the rule, the sag referenced to is the sag at the midpoint of the span.

(b) "Initial unloaded sag": The sag of a conductor prior to the application of any external load.

(c) "Final sag": The sag of a conductor under specified conditions of loading and temperature applied, after it has been subjected for an appreciable period to the loading prescribed for the loading district in which it is situated, or equivalent loading, and the loading removed. Final sag shall include the effect of inelastic deformation (creep).

(d) "Final unloaded sag": The sag of a conductor after it has been subjected for an appreciable period to the loading prescribed for the loading district in which it is situated, or equivalent loading, and the loading removed. Final unloaded sag shall include the effect of inelastic deformation (creep).

(e) "Total sag": The distance measured vertically from the conductor to the straight line joining its two points of support, under conditions of ice loading equivalent to the total resultant loading for the district in which it is located.

(f) "Maximum total sag": The total sag of the midpoint of the straight line joining the two points of support of the conductor.

(g) "Apparent sag of a span": The maximum distance between the wire in a given span and the straight line between the two points of support of the wire, measured perpendicularly from the straight line.

(h) "Sag of a conductor at any point in a span": The distance measured vertically from the particular point in the conductor to a straight line between its two points of support.

(i) "Apparent sag at any point in the span": The distance, at the particular point in the span, between the wire and the straight line between the two points of support of the wire, measured perpendicularly from the straight line.

(108) "Service" means the conductors and equipment for delivering electric energy from the secondary distribution or street main, or other distribution feeder, or from the transformer to the wiring system of the premises served.

(109) "Service drops" means the conductors strung between a pole line and a building or structure.

(110) "Service drop" means the overhead conductors between the electric supply or communication line and the building or structure being served.

(111) "Shoulder" means the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles for emergency use and for lateral support of base and surface course.

(112) "Side-wall pressure" means the crushing force exerted on a cable during installation.

(113) "Span length" means the horizontal distance between two adjacent supporting points of a conductor.

(114) "Span wire" means a wire or cable used as an auxiliary support for wires, cables, or other equipment. As applied to trolley construction, it means a wire or cable used to support laterally, or which is attached to wires which support laterally, trolley contact conductors and appurtenances in electrical contact therewith, including wires commonly referred to as cross-span wires, bracket-span wires, pull-offs, trolley strain guys, dead ends, etc.

(115) "Splicing chamber." (See definition of "manhole.")

(116) "Structure conflict" means a line is so situated with respect to a second line that the overturning of the first line will result in contact between its supporting structures or conductors and the conductors of the second line, assuming that no conductors are broken in either line.

(117) "Supply equipment." (See electric supply equipment.)

(118) "Supply station." (See electric supply station.)

(119) "Supporting structure" means the main supporting unit (usually a pole or tower).

(120) "Susceptiveness" means the characteristics of a communications circuit including its connected apparatus which determine the extent to which it is adversely affected by inductive fields.

(121) "Switch" means a device for opening and closing or for changing the connection of a circuit. In these rules, a switch will always be understood to be manually operated, unless otherwise stated.

(122) "Switchboard" means a large single panel, frame, or assembly of panels, on which are mounted (on the face, or back, or both) switches, fuses, busses, and usually instruments.

(123) "Tag" means accident prevention tag (DANGER PEOPLE AT WORK, etc.) of a distinctive appearance used for the purpose of personnel protection to indicate that the operation of the device to which it is attached is restricted.

(124) "Tension":

(a) "Final unloaded conductor tension" means the longitudinal tension in a conductor after the conductor has been stretched by the application for an appreciable period, and subsequent release, of the loadings of ice and wind and temperature decrease, assumed for the loading district in which the conductor is strung (or equivalent loading).

(b) "Initial conductor tension" means the longitudinal tension of a conductor prior to the application of any external load.

(125) "Termination." (See "cable terminal.")

(126) "Transformer vault" means an isolated inclosure either above or below ground with fire-resistant walls, ceiling, and floor, in which transformers and related equipment are installed, and which is not continuously attended during operation.

(127) "Traveled way" means the portion of the roadway for the movement of vehicles, exclusive of shoulders and full-time parking lanes.

(128) "Underground network distribution system" means an underground electrical installation fed from multiple primary sources directly associated with area-wide secondary network connected into a common grid.

(129) "Underground residential distribution system (URD)" means an electrical installation normally fed from a single primary source which may feed one or more transformers with secondaries not connected to a common grid.

(130) "Urban districts" means thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. A highway, even though in thinly settled areas, on which the traffic is often very heavy, is considered as urban.

(131) "Utility" means an organization responsible for the installation, operation or maintenance of electric supply or communications systems.

(132) "Utility interactive system" means an electric power production system which is operating in parallel with and capable of delivering energy to a utility electric supply system.

(133) "Utilization equipment" means equipment, devices, and connected wiring which utilize electric energy for mechanical, chemical, heating, lighting, testing, or similar purposes and are not a part of supply equipment, supply lines, or communication lines.

(134) "Vault" means an enclosure above or below ground which personnel may enter and is used for the purpose of installing, operating, or maintaining equipment or cable which need not be of a submersible design.

(135) "Voltage" means the effect (rms) potential difference between any two conductors or between a conductor and ground. Voltages are expressed in nominal values unless otherwise indicated. The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The operating voltage of the system may vary above or below this value.

(136) "Voltage of an effectively grounded circuit" means the highest nominal voltage available between any conductor of the circuit and ground unless otherwise indicated.

(137) "Wire gages" means the American Wire Gage (AWG), otherwise known as Brown and Sharpe (B&S), is the standard gage for copper, aluminum, and other conductors, excepting steel, for which the Steel Wire Gage (Stl. WG) is used throughout these rules.

(138) "Working space, lateral" means the space reserved for working between conductor levels outside the climbing space, and to its right and left.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-011, filed 7/25/86.]

WAC 296-44-013 Purpose and scope. (1) The construction standards and requirements included in this vertical chapter shall apply throughout the state wherever construction, maintenance, operation, or use of electrical lines and high voltage equipment takes place within the jurisdiction of the department of labor and industries. Examples include, but are not limited to those specified in WAC 296-44-016.

(2) Operations or conditions not specifically covered by this chapter are subject to all the applicable standards contained in chapter 296-24 WAC, General safety and health standards, chapter 296-62 WAC, General occupational health standards, chapter 296-32 WAC, Safety standards for telecommunications, chapter 296-45 WAC, Electrical workers safety rules, and chapter 296-155 WAC, Safety standards for construction work.

(3) If a provision of this chapter conflicts with a provision of the General safety and health standards chapter 296-24 WAC or the General occupational health standards chapter 296-62 WAC, the provision of this chapter shall prevail.

(4) When a provision of this chapter conflicts with a provision from any chapter of another vertical safety standard applying to the employers' specific type of work place, the provision of the vertical safety standard of specific application shall prevail.

(5) These construction standards, however, are not intended to circumvent the exposure levels or work standards provided for workers in the applicable sections of the standards referenced above.

(6) The safety and health requirements of this chapter do not imply that other safe work practices, procedures, or methods should not be used where such methods, procedures, or practices would tend to prevent accidents. The provisions of this chapter do not relieve the employer and employee of their respective duties to do whatever is reasonable and practicable to avoid causing accidents.

(7) The department's standards and rules shall not be applicable to those operations under the exclusive jurisdiction of the federal government.

(8) When the words "shall" or "must" are used in this chapter, the requirement is compulsory. The words "may" or "should," as used in this chapter, identify recommendations or suggestions only.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-013, filed 7/25/86; § 2 (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-015 Lines constructed prior to these rules. These rules shall not apply to the use of existing electrical installations during their lifetime provided they are maintained in good condition and in accordance with the applicable safety factor requirements and the rules in effect at the time they were installed, and provided that reconstruction shall conform to the rules as herein provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-015, filed 7/25/86.]

WAC 296-44-016 Applicability. These rules apply to:

(1) All overhead electrical supply and communications lines and equipment located outside of buildings.

(2) Underground lines and equipment.

(3) Stations and substations.

(4) Radio installations.

(5) All other electrical installations which come under the jurisdiction of the department of labor and industries, division of industrial safety and health.

(6) The installation and maintenance of electric utilization equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-016, filed 7/25/86; § 2 (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-017 References. (1) ANSI A12.1-1973, Safety Code for Floor and Wall Openings, Railings, and Toeboards.[3]

(2) ANSI A14.1-1982, Safety Requirements for Portable Wood Ladders.

(3) ANSI A14.2-1982, Safety Requirements for Portable Metal Ladders.

(4) ANSI A14.3-1982, Safety Requirements for Fixed Ladders.

(5) ANSI A14.5-1982, Safety Requirements for Portable Reinforced Plastic Ladders.

(6) ANSI A58.1-1972, Building Code Requirements for Minimum Design Loads in Buildings and Other Structures.

(7) ANSI A92.2-1979, Vehicle Mounted Elevating and Rotating Aerial Devices.

(8) ANSI B15.1-1972, Safety Standard for Mechanical Power Transmission Apparatus.

(9) ANSI C29.1-1982, Test Methods for Electrical Power Insulators.

(10) ANSI C29.2-1982, Wet-Process Porcelain and Toughened Glass Insulators (Suspension Type).

(11) ANSI C29.3-1980, Wet-Process Porcelain Insulators (Spool Type).

(12) ANSI C29.4-1977, Wet-Process Porcelain Insulators (Strain Type).

(13) ANSI C29.5-1977, Wet-Process Porcelain Insulators Low- and Medium-Voltage Pin Type.

(14) ANSI C29.6-1977, Wet-Process Porcelain Insulators, High Voltage Pin Type.

(15) ANSI C29.7-1982, Wet-Process Porcelain Insulators, High Voltage Line-Post Type.

(16) ANSI C84.1-1977, Voltage Ratings for Electric Power Systems and Equipment (60Hz); (includes supplement ANSI C84.1a 1980).

(17) ANSI C92.1-1982, Voltage Values for Preferred Transient Insulation Levels.

(18) ANSI O5.1-1979, Specifications and Dimensions for Wood Poles.

(19) ANSI Z53.1-1979, Safety Color Code for Marking Physical Hazards.

(20) ANSI Z87.1-1979, Practice for Occupational and Educational Eye and Face Protection.

(21) ANSI Z88.2-1980, Practices for Respiratory Protection.

(22) ANSI Z89.1-1981, Safety Requirements for Industrial Headwear.

(23) ANSI Z244.1-1982, Minimum Safety Requirements for Personnel Protection—Lockout/Tagout of Energy Sources.

(24) ANSI/ASTM D12079a, Specification for Rubber Insulating Gloves.

(25) ANSI/ASTM D1050-80, Specifications for Rubber Insulating Line Hose.

(26) ANSI/ASTM F496-80, Specifications for In-Service Care of Insulating Gloves and Sleeves.

(27) ANSI/IEEE Std 100-1977, IEEE Standard Dictionary of Electrical and Electronics Terms.

(28) ANSI/IEEE Std 268-1982, IEEE Standard Metric Practice.

(29) ANSI/NFPA 10-1981, Portable Fire Extinguisher.

(30) ANSI/NFPA 30-1981, Flammable and Combustible Liquids Code.

(31) ANSI/NFPA 70-1981, National Electrical Code.[4]

(32) ANSI/NFPA 77-1977, Recommended Practice on Static Electricity.

(33) ANSI/NFPA 85F-1982, Installation and Operation of Pulverized Fuel Systems.

(34) API RP500, Recommended Practice for Classification of Areas for Electrical Installations in Petroleum Refineries.[5]

(35) ASTM D178-81, Specification for Rubber Insulating Matting.[6]

(36) ASTM D1048-81, Specification for Rubber Insulating Blankets.

(37) ASTM D1049-81, Specification for Rubber Insulating Covers.

(38) ASTM D1051-81, Specification for Rubber Insulating Sleeves.

(39) ASTM F478-81, Specifications for In-Service Care of Insulating Line Hose and Covers.

(40) ASTM F479-81, Specifications for In-Service Care of Insulating Blankets.

(41) IEEE Std 80-1976, Guide for Safety in Substation Grounding.[7]

(42) NFPA 496-1982, Purged Enclosures for Electrical Equipment in Hazardous Locations.[8]

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-017, filed 7/25/86.]

PART B—GROUNDING FOR ELECTRICAL AND COMMUNICATION FACILITIES

WAC 296-44-023 Grounding methods for electric supply and communication facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-023, filed 7/25/86.]

WAC 296-44-02301 Purpose. The purpose of WAC 296-44-02301 through 296-44-02349 is to provide practical methods of grounding, as one of the means of safeguarding employees and the public from injury that may be caused by electrical potential.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02301, filed 7/25/86.]

WAC 296-44-02305 Scope. WAC 296-44-02301 through 296-44-02349 covers methods of protective grounding of supply and communication conductors and equipment. The rules requiring grounding are in other parts of this code.

These rules do not cover the grounded return of electric railways nor those lightning protection wires which are normally independent of supply or communication wires or equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02305, filed 7/25/86.]

WAC 296-44-02309 Point of connection of grounding conductor. (1) Direct current systems which are to be grounded:

(a) 750 volts and below. Connection shall be made only at supply stations. In three-wire direct-current systems the connection shall be made to the neutral.

(b) Over 750 volts. Connection shall be made at both the supply and load stations. The connection shall be made to the neutral of the system. The ground or grounding electrode may be external to or remotely located from each of the stations.

One of the two stations may have its ground connection made through surge arresters provided the other station neutral is effectively grounded as described above.

(2) Alternating current systems which are to be grounded:

(a) 750 volts and below. The point of the grounding connection on a wye-connected three-phase four-wire system, or on a single-phase three-wire system, shall be the neutral conductor. On other one-, two-, or three-phase systems with an associated lighting circuit or circuits, the point of grounding connection shall be on the common circuit conductor associated with the lighting circuits.

The point of grounding connection on three-phase three-wire system, whether derived from a delta connected or an ungrounded wye-connected transformer installation not used for lighting, may be any of the circuit conductors, or it may be a separately derived neutral.

The grounding connections shall be made at the source, and at the line side of all service equipment.

(b) Over 750 volts.

(i) Nonshielded (bare or covered conductors or insulated nonshielded cables).

Grounding connection shall be made at the neutral of the source. Additional connections may be made, if desired, along the length of the neutral, where this is one of the system conductors.

(ii) Shielded.

(A) Surge-arrester cable-shielding interconnection. Cable shielding grounds shall be bonded to surge arrester grounds, where provided, at points where underground cables are connected to overhead lines.

(B) Cable without insulating jacket. Connection shall be made to the neutral of the source transformer and at cable termination points.

(C) Cable with insulating jacket. Additional bonding and connections between the cable insulation shielding or sheaths and the system ground are recommended. In multigrounded shielded cable systems, the shielding (including sheath) shall be grounded at each cable joint exposed to personnel contact. Where multigrounded shielding cannot be used for electrolysis or sheath current reasons, the shielding sheaths and splice enclosure devices shall be insulated for the voltage which may appear on them during normal operation.

Bonding transformers or reactors may be substituted for direct ground connection at one end of the cable.

(I) Separate grounding conductor. If a separate grounding conductor is used as an adjunct to a cable run underground, it shall be connected at the source transformer and at cable accessories where these are to be grounded.

(II) Separate grounding conductor location. This grounding conductor shall be located in the same direct burial or duct bank run (or the same duct if this is of magnetic material) as the circuit conductors.

Note: The grounding conductor for a circuit which is installed in a magnetic duct need not be in the same duct if the duct containing the circuit is bonded to the separate grounding conductor at both ends.

(3) Messenger wires and guys.

(a) Messenger wires. Messenger wires required to be grounded shall be connected to grounding conductors at poles or structures at maximum intervals as listed below:

(i) Where messenger wires are adequate for system grounding conductors (WAC 296-44-02315 (3)(a), (b), and (e)) four connections in each mile.

(ii) Where messenger wires are not adequate for system grounding conductors, eight connections per mile, exclusive of service grounds.

(b) Guys. Guys which are required to be grounded shall be connected to:

(i) Grounded steel structures or to an effective ground connection on wood poles.

(ii) A line conductor which has at least four ground connections in each mile of line in addition to the ground connections at individual services.

(4) Current in grounding conductor. Ground connection points shall be so arranged that under normal circumstances there will be no objectionable flow of current over the grounding conductor. If an objectionable flow of current occurs over a grounding conductor due to the use of multiple grounds, one or more of the following should be used:

(a) Abandon one or more grounds.

(b) Change location of grounds.

(c) Interrupt the continuity of the conductor between ground connections.

(d) Subject to the approval of the administrative authority take other effective means to limit the current.

The system ground of the source transformer shall not be removed.

The temporary currents set up under abnormal conditions while the grounding conductors are performing their intended protective functions are not considered objectionable. The conductor shall have the capability of conducting anticipated fault current without thermal overloading or excessive voltage buildup. Refer to WAC 296-44-02315(3).

(5) Fences. Fences, where required to be grounded by other parts of this code, shall be grounded at or near the location of a supply line or lines crossing them, and additionally, at distances not exceeding one hundred fifty feet on either side. Fences shall also be grounded at each side of a gate or other opening in the fence. Any gate or other opening shall also be bonded across by a buried bonding jumper. A gate shall be metallically connected or bonded to the grounding conductor, jumper, or fence. Separate barbed wire strands above fencing, on nonconducting posts, shall be bonded to metallic fencing or grounding conductors at the grounding points.

Where required to be grounded, fences shall be bonded to the grounding system of the enclosed equipment or to a separate underground conductor below or near the fence line.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02309, filed 7/25/86.]

WAC 296-44-02315 Grounding conductor and means of connection. (1) Composition of grounding conductors. In all cases the grounding conductor shall be made of copper or other metals or combinations of metals which will not corrode excessively during the expected service life under the existing conditions and, if practical, shall be without joint or splice. If joints are unavoidable, they shall be so made and maintained as to not materially increase the resistance of the grounding conductor and shall have appropriate mechanical and corrosion resistant characteristics. For surge arresters and ground detectors, the grounding conductor or conductors shall be as short, straight, and free from sharp bends as practical. The structural metal frame of a building or structure may serve as a grounding conductor to an acceptable grounding electrode.

In no case shall a circuit-opening device be inserted in the grounding conductor or connection except where its operation will result in the automatic disconnection from all sources of energy of the circuit leads connected to the equipment so grounded.

Note: Temporary disconnection of grounding conductors for testing purposes, under competent supervision, shall be permitted.

(2) Connection of grounding conductors. Connection of the grounding conductor shall be made by a means matching the characteristics of both the grounded and grounding conductors, and suitable for the environmental exposure. These means include brazing, welding, mechanical and compression connections, ground clamps, and ground straps. Soldering is acceptable only in conjunction with lead sheaths.

(3) Ampacity and strength. The "short time ampacity" of a bare grounding conductor is that current which the conductor can carry for the time during which the current flows without melting or separating under the applied tensions. If a grounding conductor is insulated, its short time ampacity is the current which it can carry for the applicable time without damaging the insulation. Where grounding conductors at one location are paralleled, the increased total current capacity may be considered.

(a) System grounding conductors for single-grounded systems. The system grounding conductor or conductors for a system with single system grounding electrode or set of electrodes, exclusive of grounds at individual services, shall have a short time ampacity adequate for the fault current which can flow in the grounding conductor or conductors for the operating time of the system protective device. If this value cannot be readily determined, continuous ampacity of the grounding conductor or conductors shall be not less than the full load continuous current of the system supply transformer or other source of supply.

(b) System grounding conductors for multigrounded alternating current systems. The system grounding conductors for an alternating current system with grounds at more than one location exclusive of grounds at individual services shall have continuous total ampacities at each location of not less than one-fifth that of the conductors to which they are attached. (See also subsection (3)(h) of this section.)

(c) Grounding conductors for instrument transformers. The grounding conductor for instrument cases and secondary circuits of instrument transformers shall not be smaller than AWG No. 12 copper or have equivalent ampacity.

(d) Grounding conductors for primary surge arresters. The grounding conductor or conductors shall have adequate short time ampacity under conditions of excess current caused by or following a surge. Individual arrester grounding conductors shall be no smaller than AWG No. 6 copper or AWG No. 4 aluminum.

Note: Arrester grounding conductors may be copper-clad or aluminum-clad steel wire having not less than thirty percent of the conductivity of solid copper or aluminum wire of the same diameter.

Where flexibility of the grounding conductor, such as adjacent to the base of the arrester, is vital to its proper operation, a suitably flexible conductor shall be employed.

(e) Grounding conductors for equipment, messenger wires, and guys.

(i) Conductors. The grounding conductors for equipment, raceways, cable, messenger wires, guys, sheaths, and other metal enclosures for wires shall have short time ampacities adequate for the available fault current and operating time of the system fault protective device. If no overcurrent or fault protection is provided, the ampacity of the grounding conductor shall be determined by the design and operating conditions of the circuit, but shall not be less than that of AWG No. 8 copper. Where the adequacy and continuity of the conductor enclosures and their attachment to the equipment enclosures is assured, this path can constitute the equipment grounding conductor.

(ii) Connections. Connection of the grounding conductor shall be to a suitable lug, terminal, or device not disturbed in normal inspection, maintenance, or operation.

(f) Fences. The grounding conductor for fences required to be grounded by other parts of this code shall be any of those meeting the requirements of subsection (3)(h) of this section or shall be steel wire not smaller than No. 5 steel wire gauge. It shall be connected to the fence posts with connecting means suitable for the material when the posts are of conducting material. If the posts are of nonconducting material, suitable bonding connections shall be made to the fence mesh strands and the barbed wire strands at each grounding conductor point.

(g) Bonding of equipment frames and enclosures. Where required, a low impedance metallic path shall be provided for the passage of possible conductor or equipment, or both, fault current back to the grounded terminal of the supply, where the supply is local. Where the supply is remote, the metallic path shall interconnect the equipment frames and enclosures with all other nonenergized conducting components within reach and shall additionally be connected to ground as outlined in subsection (3)(h) of this section. Short-time ampacities of bonding conductors shall be adequate for the duty involved.

(h) Ampacity limit. No grounding conductor need have greater ampacity than either:

(i) The phase conductors which would supply the ground fault current, or

(ii) The maximum current which can flow through it to the ground electrode or electrodes to which it is attached. For a single grounding conductor and connected electrode or electrodes, this would be the supply voltage divided by the electrode resistance (approximately).

(i) Strength. All grounding conductors shall have mechanical strength suitable for the conditions to which they may reasonably be subjected.

Further, unguarded grounding conductors shall have a tensile strength not less than that of AWG No. 8 softdrawn copper, except as noted in subsection (3)(c) of this section.

(4) Guarding and protection.

(a) The grounding conductors for single grounded systems and those exposed to mechanical damage shall be guarded. However, grounding conductors need not be guarded where not readily accessible to the public nor where grounding multigrounded circuits or equipment.

(b) Where guarding is required, grounding conductors shall be protected by guards suitable for the exposure to which they may reasonably be subjected. The guards should extend for not less than 8 feet above the ground or platform from which the grounding conductors are accessible to the public.

(c) Where guarding is not required, grounds shall be protected by being substantially attached closely to the surface of the pole or other structure in areas of exposure to mechanical damage and, where practical, on the portion of the structure having least exposure.

(d) Guards used for grounding conductors of lightning protection equipment shall be of nonmagnetic materials if the guard completely encloses the grounding conductor or is not bonded at both ends to the grounding conductor.

(5) Underground.

(a) Grounding conductors laid directly underground shall be laid slack or shall be of sufficient strength to prevent being readily broken by earth movement or settling normal at the particular location.

(b) Direct-buried uninsulated joints or splices in grounding conductors should be welded, brazed, or of the compression type to minimize the possibility of loosening or corrosion. The number of joints or splices should be the minimum practical.

(c) Grounding cable insulation shielding systems shall be interconnected with all other accessible grounded power supply equipment in manholes, handholes, and vaults.

Note: Where cathodic protection or shield cross-bonding is involved, interconnection may be omitted.

(d) Looped magnetic elements such as structural steel, piping, reinforcing bars, etc., should not separate grounding conductors from the phase conductors of circuits they serve.

(e) Metals used for grounding, in direct contact with earth, concrete, or masonry, shall have been proven suitable for such exposure.

Note 1: Under present technology, aluminum has not generally been proven suitable for such use.

Note 2: Metals of different galvanic potentials which are electrically interconnected may require protection against galvanic corrosion.

(f) Sheath transposition connections (cross-bonding).

(i) Where cable insulating shields or sheaths, which are normally connected to ground, are insulated from ground to minimize shield circulating currents, they shall be insulated from personnel contact at accessible locations. Transposition connections and bonding jumpers shall be insulated for nominal 600 volt service, unless the normal shielding voltage exceeds this level, in which case the insulation shall be ample for the working voltage to ground.

(ii) Bonding jumpers and connecting means shall be sized and selected to carry the available fault current without damaging jumper insulation or sheath connections.

(6) Common grounding conductor for circuits, metal raceways, and equipment. Where the ampacity of a supply system grounding conductor is also adequate for equipment grounding requirements, this conductor may be used for the combined purpose. Equipment referred to includes the frames and enclosures of supply system control and auxiliary components, conductor raceways, cable shields, and other enclosures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02315, filed 7/25/86.]

WAC 296-44-02319 Grounding electrodes. The grounding electrode shall be permanent and adequate for the electrical system involved. A common electrode or electrode system shall be employed for grounding the electrical system and the conductor enclosures and equipment served by that system. This may be accomplished by interconnecting these elements at the "point of connection of grounding conductor," WAC 296-44-02309.

Grounding electrodes shall be one of the following:

(1) Existing electrodes. Existing electrodes consist of conducting items installed for purposes other than grounding:

(a) Metallic water piping system. Extensive metallic underground cold water piping systems may be used as grounding electrodes.

Note: Such systems normally have very low resistance to earth and have been extensively used in the past. They are the preferred electrode type where they are readily accessible.

Note: Water systems with nonmetallic noncurrent-carrying pipe or insulating joints are not suitable for use as grounding electrodes.

(b) Local systems. Isolated buried metallic cold water piping connecting to wells having sufficiently low measured resistance to earth may be used as grounding electrodes.

Note: Care should be exercised to insure that all parts that might become disconnected are effectively bonded together.

(c) Steel reinforcing bars in concrete foundations and footings. The reinforcing bar system of a concrete foundation or footing which is not insulated from direct contact with earth, and which extends at least three feet below grade, constitutes an effective and acceptable type of grounding electrode. Where steel supported on this foundation is to be used as a grounding conductor (tower, structure, etc.), it shall be interconnected by bonding between anchor bolts and reinforcing bars or by cable from the reinforcing bars to the structure above the concrete.

The normally applied steel ties are considered to provide adequate bonding between bars of the reinforcing cage.

Note: Where reinforcing bars in concrete are not suitably connected to a metal structure above the concrete, and the latter structure is subjected to grounding discharge currents (even connected to another electrode), there is likelihood of damage to the intervening concrete from ground-seeking current passing through the semi-conducting concrete.

(2) Made electrodes.

(a) General. Where made electrodes are used, they shall as far as practical penetrate into permanent moisture level and below the frostline. Made electrodes shall be of metal or combinations of metals which do not corrode excessively under the existing conditions for the expected service life.

All outer surfaces of made electrodes shall be conductive, that is, not having paint, enamel, or other insulating type covering.

(b) Driven rods. Driven rods may be sectional; the total length shall not be less than eight feet. Driven depth shall be eight feet minimum. The upper end shall be flush with or below the ground level unless suitably protected. Longer rods or multiple rods may be used to reduce the ground resistance. Spacing between multiple rods should not be less than six feet.

Note: Where rock bottom is encountered, driven depth may be less than eight feet or other types of electrode employed.

Iron or steel rods shall have minimum cross-sectional dimension of five-eighths inch. Copper-clad, stainless steel, or stainless steel-clad rods shall have a minimum cross-sectional dimension of one-half inch.

(c) Buried wire, strips, or plates. In areas of high soil resistivity or shallow bedrock, or where lower resistance is required than attainable with driven rods, one or more of the following electrodes may be more useful:

(i) Wire. Bare wires 0.162 inch in diameter or larger, conforming to WAC 296-44-02315 (5)(e), buried in earth at a depth not less than eighteen inches and not less than one hundred feet total in length, laid approximately straight, constitutes an acceptable made electrode. (This is frequently designated a "counterpoise.") The wire may be in a single length, or may be several lengths connected at ends or at some point away from the ends. The wire may take the form of a network with many parallel wires spaced in two-dimensional array, referred to as a grid.

Note 1: Where rock bottom is encountered, burial depth may be less than eighteen inches.

Note 2: Other lengths or configurations may be used if their suitability is supported by a qualified engineering study.

(ii) Strips. Strips of metal not less than ten feet in total length and with total (two sides) surface not less than five square feet buried in soil at a depth not less than eighteen

inches constitute an acceptable made electrode. Ferrous metal electrodes shall be not less than one-fourth inch in thickness and nonferrous metal electrodes not less than 0.06 inches.

Note: Strip electrodes are frequently useful in rocky areas where only irregularly shaped pits are practical to excavate.

(iii) Plates or sheets. Metal plates or sheets having not less than two square feet of surface exposed to the soil, and at a depth of not less than five feet, constitute an acceptable made electrode. Ferrous metal electrodes shall be not less than one-fourth inch in thickness and nonferrous metal electrodes not less than 0.06 inches.

(d) Pole butt plates and wire wraps.

(i) General. In areas of very low soil resistivity there are two constructions, described in specifications (ii) and (iii) below, which may provide effective grounding electrode functions although they are inadequate in most other locations. Where these have been proven to have adequately low earth resistance by the application of WAC 296-44-02329, two such electrodes may be counted as one made electrode and ground for application of WAC 296-44-02309 (3)(a), (3)(b)(ii), 296-44-02335(3) and 296-44-02329(3); however, these types shall not be the sole grounding electrode at transformer locations.

(ii) Pole butt plates. Subject to the limitations of WAC 296-44-02319 (2)(d), a pole butt plate on the base of a wooden pole, possibly folded up around the base of the pole butt, may be considered an acceptable electrode in locations where the limitations of WAC 296-44-02329 are met. The plates shall be not less than one-fourth inch thick if of ferrous metal and not less than 0.06 inch thick if of nonferrous metal. Further, the minimum plate area exposed to the soil shall be 0.5 square feet.

(iii) Wire wrap. Subject to the limitations of WAC 296-44-02319 (2)(a), made electrodes may be wire attached to the pole previous to the setting of the pole. The wire shall be of copper or other metals which will not corrode excessively under the existing conditions and shall have a continuous bare or exposed length below ground level of not less than twelve feet, shall extend to the bottom of the pole, and shall not be smaller than AWG No. 6.

(e) Concentric neutral cable. Systems employing extensive (one hundred feet minimum length) buried bare concentric neutral cable in contact with the earth may employ the concentric neutral as a grounding electrode. The concentric neutral may be covered with a semi-conducting jacket which has a radial resistivity not exceeding one hundred meter ohms and which will remain essentially stable in service. The radial resistivity of the jacket material is that value calculated from measurements on a unit length of cable, of the resistance between the concentric neutral and a surrounding conducting medium. Radial resistivity equals resistance of unit length times the surface area of jacket divided by the average thickness of the jacket over the neutral conductors. All dimensions are to be expressed in meters.

(f) Concrete-encased electrodes. A metallic wire, rod, or structural shape, meeting WAC 296-44-02315 (5)(e) and encased in concrete which is not insulated from direct contact with earth shall constitute an acceptable ground electrode. The concrete depth below grade shall be not less than one foot, and a depth of two and one-half feet is recommended. Wire shall be no smaller than AWG No. 4 if copper, or three-eighths inch diameter if steel. It shall be not less than twenty feet long, and shall remain entirely within the concrete except for the external connection. The conductor should be run as straight as practical.

The metal elements may be composed of a number of shorter lengths arrayed within the concrete and connected together (for example, the reinforcing system in a structural footing).

Note: Other wire length or configurations may be used if their suitability is supported by a qualified engineering study.

Note 1: The lowest resistance per unit wire length will result from a straight wire installation.

Note 2: The outline of the concrete need not be regular, but may conform to an irregular or rocky excavation.

Note 3: Concrete encased electrodes are frequently more practical or effective than driven rods or strips or plates buried directly in earth.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02319, filed 7/25/86.]

WAC 296-44-02323 Method of connection to electrode. (1) Ground connections. The ground connections shall be as accessible as practical and shall be made to the electrode by methods providing the required permanence and ampacity, such as:

(a) A permanently effective clamp, fitting, braze, or weld.

(b) A bronze plug which has been tightly screwed into the electrode.

(c) For steel-framed structures employing a concrete-encased reinforcing bar electrode, a steel rod similar to the reinforcing bar shall be used to join, by welding, a main vertical reinforcing bar to an anchor bolt. The bolt shall be substantially and permanently connected to the baseplate of the steel column supported on that footing. The electrical system may then be connected (for grounding) to the building frame by welding or by a bronze bolt tapped into a structural member of that frame.

(d) For nonsteel frame structures employing a concrete-encased rod or wire electrode, an insulated copper conductor of size meeting the requirements of WAC 296-44-02315(3) (except not smaller than AWG No. 4) shall be connected to the steel rod or wire using a cable clamp suitable for steel cable. This clamp and all the bared portion of the copper conductor including ends of exposed strands within the concrete shall be completely covered with mastic or sealing compound before concrete is poured to minimize the possibility of galvanic corrosion. The copper conductor end shall be brought to or out of the concrete surface at the required location for connection to the electrical system. If the copper wire is carried beyond the surface of the concrete, it shall be no smaller than AWG No. 2.

Alternatively, the copper wire may be brought out of the concrete at the bottom of the hole and carried external to the concrete for surface connection.

(2) Point of connection to piping systems.

(a) The point of connection of a grounding conductor to a metallic water piping system shall be as near as is practical to the water-service entrance to the building or near the

equipment to be grounded and shall be accessible. If a water meter is between the point of connection and the underground water pipe, the metallic water piping system shall be made electrically continuous by bonding together all parts between the connection and the pipe entrance which may become disconnected, such as meters and service unions.

(b) Made grounds or grounded structures should be separated by ten feet or more from pipelines used for the transmission of flammable liquids or gases operating at high pressure (one hundred fifty pounds per square inch or greater) unless they are electrically interconnected and cathodically protected as a single unit. Grounds within ten feet of such pipelines should be avoided or shall be coordinated so that hazardous alternating current conditions will not exist and cathodic protection of the pipeline will not be nullified.

(3) Contact surfaces. If any coating of nonconducting material, such as enamel, rust, or scale, is present on electrode contact surfaces, at the point of connection, such a coating shall be thoroughly removed where required to obtain the requisite good connection. Special fittings so designed as to make such removal of nonconducting coatings unneccessary may also be used.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02323, filed 7/25/86.]

WAC 296-44-02329 Ground resistance. Requirements. The grounding electrode system may consist of one or more interconnected electrodes. It shall have a resistance to ground low enough to minimize hazards to personnel and to permit prompt operation of circuit protective devices.

(1) Supply stations. Where very high voltages and currents are involved, such as in large substations, extensive grounding grid systems of multiple buried wires and rods and other protective means may be required.

Note: It is recommended that the combination of maximum local ground fault current and impedance of the grounding system not exceed values which will limit exposure potentials to the following:

$$E_{step} = (1000 + 6ps)\ \frac{0.116}{\sqrt{t}}$$

$$E_{touch} = (1000 + 1.5ps)\ \frac{0.116}{\sqrt{t}}$$

where

E_{step} maximum tolerable voltage difference between any two points on the ground surface which can be touched simultaneously by two (separated) feet

E_{touch} maximum tolerable voltage difference between any point on the ground where a man may stand and any point which can be touched simultaneously by either hand

ps resistivity of the soil near the surface in ohm-meters (divide the ohm-centimeter value by one hundred to obtain this)

t time of exposure in seconds (clearing time of system overcurrent equipment)

(2) Single grounded (unigrounded or delta) systems. Individual made electrodes shall, where practical, have a resistance to ground not exceeding twenty-five ohms. If a single electrode resistance exceeds twenty-five ohms, two electrodes connected in parallel shall be used.

(3) Multiple grounded systems. The neutral, which shall be of sufficient size and ampacity for the duty involved, shall be connected to made electrodes at each transformer location and at a sufficient number of additional points to total not less than four grounds in each mile of line, not including grounds at individual services.

Note: Multiple grounding systems extending over a substantial distance are more dependent on the multiplicity of grounding electrodes than on the resistance to ground of any individual electrode. Therefore, no specific values are imposed for the resistance of individual electrodes.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02329, filed 7/25/86.]

WAC 296-44-02335 Separation of grounding conductors. (1) Except as permitted in subsection (2) of this section grounding conductors from equipment and circuits of each of the following classes shall be run separately to the grounding electrode for each of the following classes:

(a) Surge arresters of circuits over 750 volts, and frames of any equipment operating at over 750 volts.

(b) Lighting and power circuits under 750 volts.

(c) Lightning rods, unless attached to a grounded metal supporting structure.

Alternatively, the grounding conductors shall be run separately to a sufficiently heavy ground bus or system ground cable which is well connected to ground at more than one place.

(2) The grounding conductors of either of the equipment classes detailed in subsection (1)(a) and (b) of this section may be interconnected utilizing a single grounding conductor, provided:

(a) There is a direct earth grounding connection at each arrester location.

(b) The secondary neutral is common with, or connected to, a primary neutral meeting the grounding requirements of subsection (3) of this section.

(3) Primary and secondary circuits utilizing a single conductor as a common neutral shall have at least four ground connections on such conductor in each mile of line, exclusive of ground connections at customers' service equipment.

(4) Ungrounded or single grounded systems and multiple grounded systems.

(a) Ungrounded or single grounded systems. Where the secondary neutral is not interconnected with the primary surge arrester grounding conductor as in subsection (2) of this section, interconnection may be made through a spark gap or device which performs an equivalent function. The gap or device shall have a 60 Hz breakdown voltage of at least twice the primary circuit voltage but not necessarily more than 10kV. At least one other grounding connection on the secondary neutral shall be provided with its grounding

electrode located at a distance of not less than twenty feet from the surge arrester grounding electrode in addition to customers' grounds at each service entrance.

(b) Multiple grounded systems. On multiple grounded systems the primary and secondary neutrals should be interconnected according to subsection (2) of this section. However, where it is necessary to separate the neutrals, interconnection of the neutrals shall be made through a spark gap or a device which performs an equivalent function. The gap or device shall have a 60 Hz breakdown voltage not exceeding 3 kV. At least one other grounding connection on the secondary neutral shall be provided with its grounding electrode located at a distance not less than six feet from the primary neutral and surge arrester grounding electrode in addition to the customers' grounds at each service entrance. Since a different potential can exist where primary and secondary neutrals are not directly interconnected, the secondary grounding conductor shall be insulated for 600 V.

(5) Where separate electrodes are used for system isolation, separate grounding conductors shall be used. Where multiple electrodes are used to reduce grounding resistance, they may be bonded together and connected to a single grounding conductor.

(6) Made electrodes used for grounding surge arresters of ungrounded supply systems operated at potentials exceeding 15 kilovolts phase to phase should be located at least twenty feet from buried communications cables. Where lines with lesser separations are to be constructed, reasonable advance notice should be given to the owners or operators of the affected systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02335, filed 7/25/86.]

WAC 296-44-02349 Grounding methods for telephone and other communication apparatus on circuits exposed to supply lines or lightning. Protectors and, where required, exposed noncurrent-carrying metal parts located in central offices or outside installations shall be grounded in the following manner:

(1) Electrode. The grounding conductor shall be connected to an acceptable grounding electrode as described in WAC 296-44-02319, with the following additions and exception:

(a) Connection may be made to the metallic supply, service conduit, service-equipment enclosure, or grounding electrode conductor where the grounded conductor of the supply service is connected to an acceptable water pipe electrode at the building.

(b) Where the grounding means in WAC 296-44-02319 (1)(a) and this section are not available, the grounding conductor shall be connected to the metallic supply service conduit, service-equipment enclosure, grounding electrode conductor, or grounding electrode of the supply service of a multigrounded neutral power supply.

Note: A variance to WAC 296-44-02319 (2)(b) is allowed for this application. Iron or steel rods may have a minimum cross-sectional dimension of one-half inch and a length of five feet. The driven depth shall be five feet subject to the exception of WAC 296-44-02319 (2)(b).

(2) Electrode connection. The grounding conductor shall preferably be made of copper (or other material which will not corrode excessively under the prevailing conditions of use) and shall be not less than AWG No. 14 (0.064 inch) in size. The grounding conductor shall be attached to the electrode by means of a bolted clamp or other suitable methods.

(3) Bonding of electrodes. A bond not smaller than AWG No. 6 (0.162 inch) copper or equivalent shall be placed between the communication grounding electrode and the supply system neutral grounding electrode where separate electrodes are used in or on the same building or structure.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02349, filed 7/25/86.]

WAC 296-44-025 Applicability of rules—Lines constructed prior to these rules. These rules shall not apply to the use of existing electrical installations during their lifetime provided they are maintained in good condition and in accordance with the applicable safety factor requirements and the rules in effect at the time they were installed, and provided that reconstruction shall conform to the rules as herein provided.

[§ 2 (part), filed 3/23/60, effective 12/1/58.]

PART C—RULES FOR THE INSTALLATION AND MAINTENANCE OF ELECTRIC SUPPLY STATIONS AND EQUIPMENT

WAC 296-44-035 Rules for the installation and maintenance of electric supply stations and equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-035, filed 7/25/86.]

WAC 296-44-03505 Purpose. The purpose of WAC 296-44-03505 through 296-44-13431 is the practical safeguarding of persons during the installation, operation, or maintenance of electric supply stations and their associated equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-03505, filed 7/25/86.]

WAC 296-44-03509 Scope. WAC 296-44-03505 through 296-44-13431 covers the electric supply conductors and equipment, along with the associated structural arrangements in electric supply stations, which are accessible only to qualified personnel. It also covers the conductors and equipment employed primarily for the utilization of electric power when such conductors and equipment are used by the utility in the exercise of its function as a utility.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-03509, filed 7/25/86.]

WAC 296-44-041 Protective arrangements in electric supply stations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-041, filed 7/25/86.]

WAC 296-44-04105 General requirements. (1) Enclosure of equipment. Rooms and spaces in which electric supply conductors or equipment are installed shall be

so arranged with fences, screens, partitions or walls as to minimize the possibility of entrance of unauthorized persons or interference by them with equipment inside. Entrances not under observation of an authorized attendant shall be kept locked.

Warning signs shall be displayed at entrances.

Metal fences when used to enclose electric supply stations having energized electrical conductors or equipment shall have a minimum height of eight feet overall and shall be grounded in accordance with WAC 296-44-023.

The requirements for fence height may be satisfied with any one of the following:

(a) Fence fabric, eight feet or more in height.

(b) A combination of seven feet or more of fence fabric and a one foot extension utilizing three or more strands of barbed wire.

(c) Other types of construction, such as nonmetallic material, which present equivalent barriers to climbing or other unauthorized entry.

(2) Rooms and spaces. All rooms and spaces in which electric supply equipment is installed shall comply with the following requirements.

(a) Construction. They shall be as much as practical noncombustible.

(b) Use. They should be as much as practical free from combustible materials, dust, and fumes and shall not be used for manufacturing or for storage, except for minor parts essential to the maintenance of the installed equipment. (For battery areas, see WAC 296-44-074, for auxiliary equipment in classified locations, see WAC 296-44-05137.)

(c) Ventilation. There should be sufficient ventilation to maintain operating temperatures within ratings, arranged to minimize accumulation of airborne contaminants under any operating conditions.

(d) Moisture and weather. They should be dry. In outdoor stations or stations in wet tunnels, subways or other moist or high humidity locations, the equipment shall be suitably designed to withstand the prevailing atmospheric conditions.

(3) Electric equipment. To minimize movement, all stationary equipment shall be supported and secured in place in a manner consistent with its conditions of service.

Note: In areas of limited seismic activity, some equipment such as transformers may be considered as secured in place by their own weight; equipment which tends to move during operation, such as circuit breakers and rotating equipment, are considered to require appropriate additional measures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04105, filed 7/25/86.]

WAC 296-44-04109 Illumination. (1) Under normal conditions. Rooms and spaces shall have means for artificial illumination. The illumination levels listed in Table 041-1 are the minimum footcandles for safety to be maintained on the task.

(2) Emergency lighting.

(a) A separate emergency source of illumination with automatic initiation, from an independent generator, storage battery or other suitable source, shall be provided in every attended station.

(b) Emergency lighting of three footcandles shall be provided in exit paths from all areas of attended stations. Consideration must be given to the type of service to be rendered whether of short time or long duration. The minimum duration shall be one and one-half hours. It is recommended that emergency circuit wiring shall be kept independent of all other wiring and equipment.

(3) Fixtures. Arrangements for permanent fixtures and plug receptacles shall be such that portable cords need not be brought into dangerous proximity to live or moving parts. All lighting shall be controlled and serviced from safely accessible locations.

(4) Attachment plugs and receptacles for general use. Portable conductors shall be attached to fixed wiring only through separable attachment plugs which will disconnect all poles by one operation. Receptacles installed on two or three wire single phase, ac branch circuits shall be of the grounding type. Receptacles connected to circuits having different voltages, frequencies or types of current (ac or dc) on the same premises shall be of such design that attachment plugs used on such circuits are not interchangeable.

(5) Receptacles in damp or wet locations. All 120 V ac permanent receptacles shall either be provided with ground fault interrupter (GFI) protection, or be on a grounded circuit which is tested at such intervals as experience has shown to be necessary.

Table 041-1 Illumination Levels

Location	Minimum Footcandles
Central station	
Air conditioning equipment, air preheater and fan floor, ash sluicing	5
Auxiliaries, battery areas, boiler feed pumps, tanks, compressors, gage area	10
Boiler platforms	5
Burner platforms	10
Cable room, circulator, or pump bay	5
Chemical laboratory	25
Coal conveyor, crusher, feeder, scale areas, pulverizer, fan area, transfer tower	5
Condensers, deaerator floor, evaporator floor, heater floors	5
Control rooms	
Vertical face of switchboards	
Simples or section of duplex operator:	
Type A—Large centralized control room 66 inches above floor	25
Type B—Ordinary control room 66 inches above floor	15
Section of duplex facing away from operator	15
Bench boards (horizontal level)	25
Area inside duplex switchboards	5
Rear of all switchboard panels (vertical)	5
Dispatch boards	
Horizontal plane (desk level)	25
Vertical face of board (48 inches) above floor, facing operator:	
System load dispatch room	25
Secondary dispatch room	15
Hydrogen and carbon dioxide manifold area	10
Precipitators	5
Screen house	10
Soot or slag blower platform	5
Steam headers and throttles	5
Switchgear, power	10
Telephone equipment room	10
Tunnels or galleries, piping	5
Turbine bay subbasement	10
Turbine room	15

Visitor's gallery	10
Water treating area	10
Central station (exterior)	
Catwalks	5
Cinder dumps	5
Coal storage area	5
Coal unloading	
Dock (loading or unloading zone)	5
Barge storage area	5
Car dumper	5
Tipple	5
Conveyors	5
Entrances	
Generating or service building	
Main	10
Secondary	5
Gate house	
Pedestrian entrance	10
Conveyor entrance	5
Fence	5
Fuel-oil delivery headers	5
Oil storage tanks	5
Open yard	5
Platforms—Boiler, turbine deck	5
Roadway	
Between or along buildings	5
Not bordered by buildings	5
Substation	
General horizontal	5
Specific vertical (on disconnects)	5

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04109, filed 7/25/86.]

WAC 296-44-04125 Floor, floor openings, passageways, stairs. (1) Floors. Floors shall have even surfaces and afford secure footing. Slippery floors or stairs should be provided with antislip covering.

(2) Passageways. Passageways, including stairways, shall be unobstructed and shall, where practical, provide at least seven feet headroom. Where the preceding requirements are not practical, the obstructions should be painted, marked or indicated by warning signs and the area properly lighted.

(3) Railings. All floor openings without gratings or other adequate cover and raised platforms and walkways in excess of one foot in height shall be provided with railings. Openings in railings for units such as fixed ladders, cranes, and the like shall be provided with adequate guards such as grates, chains, or sliding pipe sections.

(4) Stair guards. All stairways consisting of four or more risers shall be provided with handrails.

Note: For additional information see ANSI A12.1-1973[1].[9]

(5) Top rails. All top rails shall be kept unobstructed for a distance of three inches in all directions except from below at supports.

[9]The numbers in brackets correspond to those in the references of WAC 296-44-017.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04125, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

WAC 296-44-04129 Exits. (1) Clear exits. Each room or space and each working space about equipment shall have a means of exit which shall be kept clear of all obstructions. Exit doors shall swing out and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.

Note: This rule does not apply to gates in fences for outdoor equipment installations.

(2) Double exits. If the plan of the room or space and the character and arrangement of equipment are such that an accident would be likely to close or make inaccessible a single exit, a second exit shall be provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04129, filed 7/25/86.]

WAC 296-44-04135 Fire extinguishing equipment. Fire extinguishing equipment shall be portable and installed in accordance with WAC 296-24-590.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04135, filed 7/25/86.]

WAC 296-44-051 Installation and maintenance of equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-051, filed 7/25/86.]

WAC 296-44-05105 General requirements. All electric equipment shall be constructed, installed, and maintained so as to safeguard personnel as far as practical.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05105, filed 7/25/86.]

WAC 296-44-05109 Inspections. (1) In-service equipment. Electric equipment shall be inspected and maintained at such intervals as experience has shown to be necessary. Equipment or wiring found to be defective shall be put in good order or permanently disconnected.

(2) Idle equipment. Infrequently used equipment or wiring shall be inspected and tested before use to determine its fitness for service. Idle equipment energized but not connected to a load shall be inspected and maintained at such intervals as experience has shown to be necessary.

(3) Emergency equipment. Equipment and wiring maintained for emergency service shall be inspected and tested at such intervals as experience has shown to be necessary to determine its fitness for service.

(4) New equipment. New equipment shall be inspected and tested before being placed in service.

Note: The equipment to be tested does not include fittings, devices, appliances, fixtures or other hardware.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05109, filed 7/25/86.]

WAC 296-44-05115 Guarding shaft ends, pulleys, belts and suddenly moving parts. (1) Mechanical transmission machinery. The methods for safeguarding pulleys, belts and other equipment used in the mechanical transmission of power shall be in accordance with ANSI B15.1-1972 [8].

(2) Suddenly moving parts. Parts of equipment which move suddenly in such a way that persons in the vicinity are

likely to be injured by such movement, shall be guarded or isolated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05115, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-05119 Protective grounding. (1) Protective grounding or physical isolation of noncurrent-carrying metal parts. All electric equipment shall have the exposed noncurrent-carrying metal parts, such as frames of generators and switchboards, cases of transformers, switches and operating levers effectively grounded or physically isolated. All metallic guards including rails, screen fences, etc. about electric equipment shall be effectively grounded.

(2) Grounding method. All grounding which is intended to be a permanent and effective protective measure, such as surge arrester grounding, grounding of circuits, equipment, or wire raceways, shall be made in accordance with the methods specified in WAC 296-44-023.

Note: For additional information see IEEE Std. 80-1976[41].

(3) Provision for grounding equipment during maintenance. Electric equipment or conductors normally operating at more than 600 V between conductors, on or about which work is occasionally done while isolated from a source of electric energy by disconnecting or isolating switches only, shall be provided with some means for grounding, such as switches, connectors or a readily accessible means for connecting a portable grounding conductor. When necessary, grounding may be omitted on conductors normally operating at 25 kV or less and not influenced by higher voltage conductors, where visible openings in the source of supply are available and are properly tagged in the open position.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05119 filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

WAC 296-44-05125 Guarding live parts. (1) Where required.

(a) Guards shall be provided around all live parts operating above 150 V to ground without an adequate insulating covering, unless their location gives sufficient horizontal or vertical or a combination of these clearances to minimize the possibility of accidental human contact. Clearances from live parts to any permanent supporting surface for workers shall equal or exceed either of those shown in Table 051-1 and illustrated in Figure 051.1.

(b) Parts over or near passageways through which material may be carried, or in or near spaces such as corridors, storerooms and boiler rooms used for nonelectrical work shall be guarded or given clearances in excess of those specified such as may be necessary to secure reasonable safety. The guards shall be substantial and completely shield or enclose the live parts without openings. In spaces used for nonelectrical work, guards should be removable only by means of tools or keys.

(c) Parts of indeterminate potential, such as telephone wires exposed to induction from high voltage lines, ungrounded neutral connections, ungrounded frames, ungrounded parts of surge arresters, or ungrounded instrument cases connected directly to a high voltage circuit, shall be guarded on the basis of the maximum voltage which may be present.

(2) Strength of guards. Guards shall be sufficiently strong and shall be supported rigidly and securely enough to prevent them from being displaced or dangerously deflected by a person slipping or falling against them.

(3) Types of guards.

(a) Location or physical isolation. Parts having clearances equal to or greater than specified in Table 051-1, 124-1 are guarded by location. Parts are guarded by isolation when all entrances to enclosed spaces, runways, fixed ladders, and the like are kept locked, barricaded, or roped off and warning signs are posted at all entrances.

(b) Shields or enclosures. Guards less than four inches outside of the guard zone shall completely enclose the parts from contact up to the heights listed in Column 2 of Table 051-1. They shall not be closer to the live parts than listed in Column 4 of Table 051-1, except when suitable insulating material is used with circuits of less than 2500 V to ground. (See note under Table 051-1.) If more than four inches outside the guard zone, the guards shall extend a minimum of eight feet six inches above the floor. Covers or guards, which must at any time be removed while the parts they guard are live, shall be arranged so that they cannot readily be brought into contact with live parts.

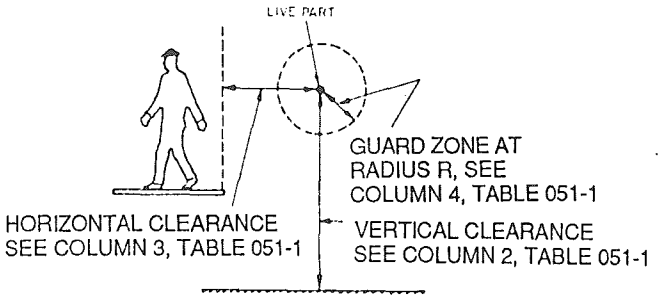


Fig. 051.1

Table 051-1. Minimum Clearance from Live Parts

PART A - Low, Medium and High Voltages

Nominal voltage between phases (1)	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
	Feet	Inches	Feet	Inches	Feet	Inches
151 to 600	8	8	3	4		2
2,400	8	9	3	4		3
7,200	8	10	3	4		4
13,800	9	0	3	6		6
23,000	9	3	3	9		9
34,500	9	6	4	0	1	0
46,000	9	10	4	4	1	4
69,000	10	5	4	11	1	11
115,000	11	7	6	1	3	1
138,000	12	2	6	8	3	8
161,000	12	10	7	4	4	4
230,000	14	10	9	4	6	4

PART B - Extra high voltages (based on switching surge factors)[2]

Maximum design voltage between phases (1)	Switching surge factor[3] per unit (A)[4]	Switching surge line to ground (B)[4]	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
		kV	Ft	In	Ft	In	Ft	In
362,000	2.2 or below	650	15	6	10	0	7	0
	2.3	680	16	0	10	6	7	6
	2.4	709	16	6	11	0	8	0
	2.5	739	17	2	11	8	8	8
	2.6	768	17	9	12	3	9	3
	2.7	798	18	4	12	10	9	10
	2.8	828	18	11	13	5	10	5
	2.9	857	19	7	14	1	11	1
	3.0	887	20	2	14	8	11	8
550,000	1.8 or below	808	18	10	13	4	10	4
	1.9	853	19	6	14	0	11	0
	2.0	898	20	6	15	0	12	0
	2.1	943	21	6	16	0	13	0
	2.2	988	22	6	17	0	14	0
	2.3	1033	23	7	18	1	15	1
	2.4	1078	24	8	19	2	16	2
	2.5	1123	25	10	20	4	17	4
	2.6	1167	27	0	21	6	18	6
	2.7	1212	28	4	22	10	19	10
800,000	1.5	980	22	4	16	10	13	10
	1.6	1045	23	11	18	5	15	5
	1.7	1110	25	6	20	0	17	1
	1.8	1176	27	3	21	9	18	9
	1.9	1241	29	0	23	6	20	6
	2.0	1306	30	10	25	4	22	4
	2.1	1372	32	9	27	3	24	3
	2.2	1437	34	8	29	3	26	2
	2.3	1502	36	9	31	3	28	3
	2.4	1567	38	9	33	3	30	3

PART C - Extra high voltages (based on BIL factors)[2]

Maximum design voltage between phases (1)	Basic impulse insulation[5] level (BIL) (C)[4]	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
	kV	Ft	In	Ft	In	Ft	In
362,000	1050	15	6	10	0	7	0
362,000	1300	17	2	11	8	8	8
550,000	1550	18	10	13	4	10	4
550,000	1800	20	6	15	0	12	0
800,000	2050	22	5	16	11	13	11

Notes and explanations to terms used in Table 051.1:

[1] Interpolate for intermediate values. The clearances in Column 4 of this table are solely for guidance in installing guards without definite engineering design and are not to be considered as a requirement for such engineering design. For example, the minimum clearances in the tables above are not intended to refer to the clearances between live parts and the walls of the cells, compartments or similar enclosing structures. They do not apply to the clearances between bus bars and supporting structures nor to clearances between the blade of a disconnecting switch and its base. However, where surge protective devices are applied to protect the live parts, the vertical clearances, Column 2 of Table 124-1 Part A may be reduced provided the clearance is not less than eight feet and six inches plus the electrical clearance between energized parts and ground as limited by the surge protective devices.

[2] Minimum clearances shall satisfy either switching surge or BIL duty requirements, whichever are greater.

[3] Switching surge factor - an expression of the maximum switching surge crest voltage in terms of the maximum operating line to neutral crest voltage of the power system.

[4] The values of Columns A, B, and C are power system design factors that shall correlate with selected minimum clearances. Adequate data to support these design factors should be available.

[5] The selection of station BIL shall be coordinated with surge protective devices when using BIL to determine minimum clearance. BIL-basic impulse insulation level-for definition and application see ANSI C92.1-1982 [17].

(c) Railings. Railings are not substitutes for complete guards. If the vertical distance in Table 051-1 cannot be obtained, railings may be used. Railings, if used, shall be located at a horizontal distance of at least three feet and preferably not more than four feet from the nearest point of the guard zone which is less than eight feet, six inches above the floor (see Fig. 051-2).

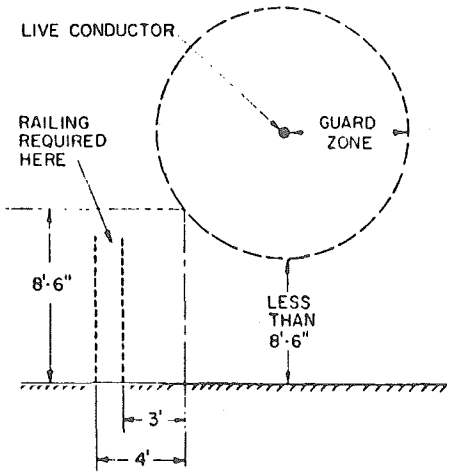


Fig. 051-2

Railing used as Guards

(d) Mats. Mats of rubber or other suitable insulating material complying with ASTM D178-81 [35] may be used at switchboards, switches, or rotating machinery as supplementary protection.

(e) Live parts below supporting surfaces for persons. The supporting surfaces for persons above live parts shall be without openings. Toe boards at least six inches high and handrails shall be provided at all edges.

(f) Insulating covering on conductors or parts. Conductors and parts may be considered as guarded by insulation if they have either of the following:

(i) Insulation covering of a type and thickness suitable for the voltage and conditions under which they are expected to be operated and if operating above 2500 V to ground having metallic insulation shielding or semiconducting shield in combination with suitable metallic drainage which is grounded to an effective ground.

Note: Nonshielded insulated conductors listed by a qualified testing laboratory shall be permitted for use up to 8000 V (phase-to-phase) when the conductors meet the requirements of ANSI/NFPA 70-1981 [31], Article 310-6.

(ii) Barriers or enclosures which are electrically and mechanically suitable for the conditions under which they are expected to be operated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05125, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

WAC 296-44-05129 Working space about electric equipment. (1) Working space (600 volts or less). Access and working space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment.

(a) Clear spaces. Working space required by this section shall not be used for storage. When normally enclosed energized parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be guarded.

(b) Access and entrance to working space. At least one entrance shall be provided to give access to the working space about electrical equipment.

(c) Working space. The working space in the direction of access to energized parts operating at 600 volts or less which require examination, adjustment, servicing, or maintenance while energized shall not be less than indicated in Table 051-2. In addition to the dimensions shown in Table 051-2 the working space shall not be less than thirty inches wide in front of the electric equipment. Distances shall be measured from the energized parts if such are exposed or from the enclosure front or opening if such are enclosed. Concrete, brick, or tile walls shall be considered grounded.

Table 051-2 Working Space

Voltage to ground	Minimum Clear Distance		
	ft	ft	ft
Condition:	1	2	3
0-150	3	3	3
151-600	3	3 1/2	4

Where the *conditions* are as follows:

1. Exposed energized parts on one side and no energized or grounded parts on the other side of the working space, or exposed energized parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated bus bars operating at not over 300 V shall not be considered energized parts.

2. Exposed energized parts on one side and grounded parts on the other side.

3. Exposed energized parts on both sides of the work space (not guarded as provided in Condition 1) with the operator between.

Note: Working space shall not be required in back of assemblies, such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

(d) Headroom working space. The minimum headroom of working spaces about switchboards or control centers shall be seven feet.

(e) Front working space. In all cases where there are energized parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment shall not be less than three feet.

(2) Working space over 600 volts. Working space shall be in accordance with Table 051-1 clearances for guarding.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05129, filed 7/25/86.]

WAC 296-44-05131 Equipment for work on energized parts. When it is necessary for personnel to move themselves, material, or tools within the guard zone of unguarded energized parts, protective equipment shall be provided.

This protective equipment shall be periodically inspected, tested, and kept in a safe condition. Protective equipment shall be rated for not less than the voltage involved.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05131, filed 7/25/86.]

WAC 296-44-05135 Classified locations. Electrical installations in classified areas shall meet the requirements of ANSI/NFPA 70-1981 [31], Articles 500 through 503 and Articles 511 through 517.

Specific classified areas in a power plant or substation and their classifications are identified in the following subsections.

(1) Coal-handling locations.

(a) Unventilated tunnels below stockpiles or surge piles and spaces inside, above or below coal storage silos or bunkers or other enclosed coal storage spaces where methane or coal dust may accumulate, are Class I, Division 1, Group D, and Class II, Division 1, Group F locations.

(b) Enclosed areas of preparation plants or coal handling facilities where coal dust might accumulate, are Class II, Division 1, Group F locations.

(c) Electrical equipment in other locations in which hazardous concentrations of flammable gases or vapors may exist continually, intermittently or periodically under normal operating conditions shall be in accordance with ANSI/NFPA 70-1981 [31], Article 501 or be adequately ventilated.

(d) The minimum acceptable requirements for adequate ventilation (pressurization) to reduce the classification of an enclosed area or enclosure within a Class I, Division 1 area to nonclassified are:

(i) The ventilation system shall maintain at least 0.1 inch of positive water pressure in the area with all openings closed.

(ii) The ventilation system shall provide a minimum velocity of 60 feet per minute outward through each opening with all openings open at the same time.

(iii) The ventilation system shall be interlocked so that on failure of the ventilation system, all power to the area shall be de-energized except to those devices which meet the Class I, Division 1 requirements without the ventilation system.

(iv) The maximum operating temperature of any internal surface shall not exceed eighty percent of the ignition temperature of the hazardous material involved.

(e) Locations in which combustible dust is or may be in suspension in the air continuously, intermittently, or periodically under normal operating conditions, or in quantities sufficient to produce explosions or ignitable mixtures, are classified as Class II, Division 1, Group F locations and all electrical equipment shall be installed and maintained in accordance with the requirements of ANSI/NFPA 70-1981 [31], Article 502.

(f) Locations where dangerous concentrations of suspended dust are prevented during normal operation but where dust accumulations on electrical equipment may be sufficient to interfere with the safe dissipation of heat from electrical equipment or might be ignited by arcs, sparks, or burning material from such equipment are Class II, Division 2, Group F locations and all electrical equipment shall be installed and maintained in accordance with the requirements of ANSI/NFPA 70-1981 [31], Article 502.

(g) Enclosed sections where only wet coal is handled or enclosed sections so cut off as to be free from dangerous amounts of coal dust are not classified. Coal shall be considered to be wet if enough water sprays are installed and maintained to prevent more than 0.3 ounce of coal dust per cubic foot of enclosed air volume from being thrown into suspension or from accumulating on or in electrical equipment.

(h) Locations having completely dust-tight pulverized fuel systems designed and installed in compliance with ANSI/NFPA 85F-1982 [33], shall not be considered classified.

(i) Portable lamps for use in fuel bunkers or bins shall be suitable for Class II, Division 1 locations.

(j) Sparking electrical tools shall not be used where flammable dust or dust clouds are present.

(k) An equipment grounding conductor shall be carried with the power conductors and serve to ground the frames of all equipment supplied from that circuit. The origin of the grounding conductor shall be:

(i) Ungrounded delta or wye—Transformer frame ground.

(ii) Grounded delta or wye—Transformer grounded secondary connection.

(iii) Resistance grounded wye—The grounded side of the grounding resistor.

(l) Ungrounded systems should be equipped with a ground fault indicating device to give both a visual and audible alarm upon the occurrence of a ground fault in the system.

(2) Flammable and combustible liquids.

(a) Flammable liquid shall mean a liquid having a flash point below 100°F and having a vapor pressure not exceeding forty pounds per square inch (absolute) at 100°F and shall be known as a Class I liquid.

(b) Combustible liquid shall mean a liquid having a flash point greater than or equal to 100°F and having a vapor pressure not exceeding forty pounds per square inch (absolute) at 100°F.

(c) Class I liquids are subdivided as follows:

(i) Class IA includes those having flash points below 73°F and having a boiling point below 100°F.

(ii) Class IB includes those having flash points below 73°F.

(iii) Class IC includes those having flash points at or above 73°F and below 100°F.

(d) Combustible liquids are subdivided as follows:

(i) Class II includes those having flash points equal to or greater than 100°F but less than 140°F.

(ii) Class IIIA includes those having flash points equal to or greater than 140°F but less than 200°F.

(iii) Class IIIB includes those having flash points greater than or equal to 200°F.

(3) Flammable liquid storage area. Electrical wiring and equipment located in inside storage rooms used for Class I liquids shall be approved for Class I, Division 2 locations, (see Table 051-3).

Table 051-3 Electrical Equipment Classified Areas-Flammable Liquid Storage Areas

Location	NEC Class I Division	Extent of Classified Area
Indoor equipment installed where flammable vapor-air mixtures may exist under normal operations.	1	Area within 5 ft of any edge of such equipment, extending in all directions.
	2	Area between 5 ft and 8 ft of any edge of such equipment, extending in all directions. Also, area up to 3 ft above floor or grade level within 5 ft to 25 ft horizontally from any edge of such equipment.*
Outdoor equipment installed where flammable vapor-air mixtures may exist under normal operations.	1	Area within 3 ft of any edge of such equipment extending in all directions.
	2	Area between 3 ft and 8 ft of any edge of such equipment extending in all directions. Also, area up to 3 ft above floor or grade level within 3 ft to 10 ft horizontally from any edge of such equipment.
Tank - Above ground		
Shell, ends, or roof and dike area	2	Within 10 ft from shell, ends or roof of tank. Area inside dikes to level of top of dike.
Vent	1	Within 5 ft of open end of vent, extending in all directions.
	2	Area between 5 ft and 10 ft from open end of vent, extending in all directions.
Floating roof	1	Area above the roof and within the shell.
Tank - Underground fill opening	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.

*Note: The release of Class I liquids may generate vapors to the extent that the entire building, and possibly a zone surrounding it, should be considered a Class I, Division 2 location.

	2	Up to 18 in above grade level within a horizontal radius of 10 ft from a loose fill connection and within a horizontal radius of 5 ft from a tight fill connection.
Vent - Discharging upward	1	Within 3 ft of open end of vent, extending in all directions.
	2	Area between 3 ft and 5 ft of open end of vent, extending in all directions.
Drum and container filling; outdoors, or indoors with adequate ventilation	1	Within 3 ft of vent and fill opening, extending in all directions.
	2	Area between 3 ft and 5 ft from vent or fill opening, extending in all directions. Also up to 18 in above floor or grade level within a horizontal radius of 10 ft from vent or fill opening.
Pumps, bleeders, withdrawal fitting, meters and similar devices		
Indoors	2	Within 5 ft of any edge of such devices, extending in all directions. Also, up to 3 ft above floor or grade level within 25 ft horizontally from any edge of such devices.
Outdoors	2	Within 3 ft of any edge of such devices, extending in all directions. Also up to 18 in above grade level within 10 ft horizontally from any edge of such devices.
Pits		
Without mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
With mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings or piping, and not within a Division 1 or 2 classified area	2	Entire pit
Drainage ditches, separators, impounding basins	2	Area up to 18 in above ditch, separator or basin. Also up to 18 in above grade within 15 ft horizontally from any edge.

*Note: The release of Class I liquids may generate vapors to the extent that the entire building, and possibly a zone surrounding it, should be considered a Class I, Division 2 location.

Table 051-4 Electrical Equipment Classified Areas-Bulk Plants

Location	NEC Class I, Group D Division	Extent of Classified Area
Bottom loading with vapor recovery ..ny bottom unloading	2	Within 3 ft of point of connections, extending in all directions. Also up to 18 in above grade within a horizontal radius of 10 ft from point of connection.

(4) Loading and unloading facilities. Electrical equipment located in the area shall comply with the requirements of Table 051-4.

(a) Static protection. Bonding facilities for protection against static sparks during the loading of tank vehicles through open domes shall be provided (i) where Class I liquids are loaded, or (ii) where Class II or Class III liquids are loaded into vehicles which may contain vapors from previous cargoes of Class I liquids.

(A) Protection as required in (a) of this subsection shall consist of a metallic bond wire permanently electrically connected to the fill stem or to some part of the rack structure in electrical contact with the fill stem. The free end of such wire shall be provided with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle.

(B) Such bonding connection shall be made fast to the vehicle or tank before dome covers are raised and shall remain in place until filling is completed and all dome covers have been closed and secured.

Note: Bonding as specified in (a)(A) and (B) of this subsection is not required:

(aa) Where vehicles are loaded exclusively with products not having a static accumulating tendency, such as asphalts including cutback asphalts, most crude oils, residual oils and water soluble liquids;

(bb) Where no Class I liquids are handled at the loading facility and the tank vehicles loaded are used exclusively for Class II and Class III liquids; and

(cc) Where vehicles are loaded or unloaded through closed bottom or top connections whether the hose or pipe is conductive or nonconductive.

(b) Stray currents. Tank car loading facilities where flammable and combustible liquids are loaded or unloaded through open domes shall be protected against stray currents by permanently bonding the pipe to at least one rail and to the rack structure, if of metal. Multiple pipes entering the rack area shall be permanently electrically bonded together. In addition, in areas where excessive stray currents are known to exist, all pipe entering the rack area shall be provided with insulating sections to electrically isolate the rack piping from the pipe lines. These precautions are not necessary where Class II or Class III liquids are handled exclusively and there is no probability that tank cars will contain vapors from previous cargoes of Class I liquids. Temporary bonding is not required between the tank car and

the rack or piping during either loading or unloading irrespective of the class of liquid handled.

(c) Container filling facilities. Class I liquids shall not be dispensed into metal containers unless the nozzle or fill pipe is in electrical contact with the container. This can be accomplished by maintaining metallic contact during filling, by a bond wire between them, or by other conductive path having an electrical resistance not greater than 10^6 ohms. Bonding is not required where a container is filled through a closed system, or is made of glass or other nonconducting material.

Note: For additional information see ANSI/NFPA 77-1977 [32].

(5) Gasoline dispensing stations.

(a) WAC 296-44-05135(5) shall apply to areas where Class I liquids are stored, handled or dispensed. For areas where Class II or Class III liquids are stored, handled or dispensed, the electrical equipment may be installed in accordance with the provisions of applicable sections of this code (ANSI C2).

(b) All electrical equipment and wiring shall be furnished and installed in accordance with ANSI/NFPA 70-1981 [31]. All electrical equipment integral with the dispensing hose or nozzle shall be suitable for use in Division 1 locations.

(c) Table 051-5 shall be used to delineate and classify areas for the purpose of installation of electrical equipment under normal circumstances. A classified area shall not extend beyond an unpierced wall, roof, or other solid partition. For a definition of the class and division designations see ANSI/NFPA 70-1981 [31], Article 500.

(d) The area classifications listed in Table 051-5 are based on the premise that the installation meets the applicable requirements of this code in all respects. Should this not be the case, the local governing authority having jurisdiction (i.e., local, state or federal authorities) shall have the authority to determine the extent of the classified area.

Table 051-5 Electrical Equipment Classified Areas-Gasoline Dispensing Stations

Location	NEC Class I Division	Extent of Classified Area
Gasoline dispensing units (except overhead type dispensers)	1	The area up to 4 ft vertically above the base within the enclosure or up to a solid partition less than 4 ft above the base, located above the nozzle insertion level and above the level of any gasketed joint, hose, or stuffing box.
	2	Within 18 in horizontally in all directions from the Division 1 area within the enclosure.
Outdoor	2	Up to 18 in above grade level within 20 ft horizontally of any edge of enclosure.
Indoor		
With mechanical ventilation	2	Up to 18 in above grade or floor level within 20 ft horizontally of any edge of enclosure.
With gravity ventilation	2	Up to 18 in above grade or floor level within 25 ft horizontally of any edge of enclosure.
Gasoline dispensing units		Within the dispenser enclosure and 18 in in all directions from the enclosure where not suitably cut off by ceiling or wall. All electrical equipment integral with the dispensing hose or nozzle.
Overhead type		
Gasoline dispensing units	2	An area extending 2 ft horizontally in all directions beyond the Division 1 area and extending to grade below the classified area.
Overhead type *(Continued)*		
	2	Up to 18 in above grade level with 20 ft horizontally measured from a point vertically below the edge of any dispenser.
Gasoline dispensing station lubrication or service room	1	Any pit within any unventilated area.
with dispensing	2	Any pit with ventilation
	2	Area up to 18 in above floor or grade level and 3 ft horizontally from a lubrication pit.
Dispenser for Class I liquids	2	Within 3 ft of any fill or dispensing point, extending in all directions.
Without dispensing	2	Entire area within any pit used for lubrication or similar services where Class I liquids may be released.
	2	Area up to 18 in above any such pit, and extending a distance of 3 ft horizontally from any edge of the pit.
Storage and rest rooms	Non-classified	If there is any opening to these rooms within the extent of a Division 1 area, the entire room shall be classified as Division 1.

Location	NEC Class I, Group D Division	Extent of Classified Area
Vapor processing pits	1	Any pit, box, or space below grade level, any part of which is within a Division 1 or 2 location or which houses any equipment used to transport or process vapors.
Equipment	2	Within protective enclosures. The space within 18 in in all directions of equipment containing flammable vapor or liquid extending to grade level. Up to 18 in above grade level within 10 ft

	horizontally of the vapor processing equipment.

(6) Boilers.

(a) When storing, handling, or burning fuel oils which may have flash points below 100°F (Class I liquids, as defined in ANSI/NFPA 30-1981 [30]) or which may be heated above their flash point, attention must be given to electrical installations in areas where flammable vapors or gases may be present in the atmosphere. Typical locations are: Burner areas, fuel-handling equipment areas, fuel storage areas, pits, sumps, and low spots where fuel leakage or vapors may accumulate. ANSI/NFPA 70-1981 [31], Article 500 provides for classifying such areas and defines requirements for electrical installations in the areas so classified. The burner front piping and equipment shall be designed and constructed to eliminate hazardous concentrations of flammable gases that exist continuously, intermittently, or periodically under normal operating conditions. Providing the burners are thoroughly purged before removal for cleaning, burner front maintenance operations will not cause hazardous concentrations of flammable vapors to exist frequently. With such provisions, the burner front is not normally classified more restrictively, than Class I, Division 2.

(b) The operating company shall be responsible for classifying areas where fuel is stored, handled, or burned, and for revising the classification if conditions are changed. Installations shall conform to ANSI/NFPA 30-1981 [30] and ANSI/NFPA 70-1981 [31].

Note: For additional guidance see API RP 500 [34].

(7) Gaseous hydrogen systems for supply equipment.

(a) Outdoor storage areas shall not be located beneath electric power lines.

(b) Safety considerations at specific storage areas. Electrical equipment shall be suitable for Class I, Division 2 locations:

(i) Within fifteen feet of outdoor storage spaces;

(ii) Within adequately ventilated separate buildings or special rooms for storing hydrogen;

(iii) Within twenty-five feet of a hydrogen storage space in an adequately ventilated building used for other purposes.

(c) Space around elements of the generator hydrogen seal oil system shall not be considered classified for electrical installation except where external venting is not provided in the bearing drain system.

(d) Spaces around the hydrogen piping system beyond the point where the hydrogen storage system connects to distribution piping shall not be considered classified for electrical installations, outside the boundaries established in WAC 296-44-05115 (7)(b)(a) and (c).

(8) Liquid hydrogen systems.

(a) Electrical wiring and equipment located within three feet of a point where connections are regularly made and disconnected, shall be in accordance with ANSI/NFPA 70-1981 [31], Article 501, Class I, Group B, Division 1 locations.

(b) Except as provided in (a) of this subsection electrical wiring and equipment located within twenty-five feet of a point where connections are regularly made and disconnected or within twenty-five feet of a liquid hydrogen storage container, shall be in accordance with ANSI/NFPA 70-1981 [31], Article 501, Class I, Group B, Division 2 locations. When equipment approved for Class I, Group B atmospheres is not commercially available, the equipment may be (i) purged or ventilated in accordance with NFPA 496-1982 [42] or (ii) intrinsically safe, or (iii) approved for Class I, Group C atmospheres. This requirement does not apply to electrical equipment which is installed on mobile supply trucks or tank cars from which the storage container is filled.

(9) Sulfur. Electrical wiring and equipment located in areas where sulfur dust is in suspension in explosive or ignitable mixtures during normal operations, shall be suitable for Class II, Division 1, Group G.

(10) Oxygen. Bulk oxygen installations are not defined as classified locations.

(11) Liquefied petroleum gas (LPG).

(a) LPG is heavier than air.

(b) Since LPG is contained in a closed system of piping and equipment, the system need not be electrically conductive or electrically bonded for protection against static electricity.

(c) Fixed electrical equipment and wiring installed within classified areas specified in Table 051-6 shall meet the requirements of ANSI/NFPA 70-1981 [31], Article 500.

Table 051-6 Electrical Equipment Classified Areas-LPG Storage

Location	NEC Class I Group D	Extent of Classified Area
Storage containers other than DOT cylinders	2	Within 15 ft in all directions from connections, except connections otherwise covered in Table K-1.
Tank vehicle and tank car loading and unloading	1	Within 5 ft in all directions from connections regularly made or disconnected for product transfer.
	2	Beyond 5 ft but within 15 ft in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator of the sphere and grade.
Gage vent openings other than those on DOT cylinders	1	Within 5 ft in all directions from point of discharge.
	2	Beyond 5 ft but within 15 ft in all directions from point of discharge.
Relief valve	1	Within direct path of discharge.
Discharge other than those on DOT cylinders		Note: Fixed electrical equipment should preferably not be installed.
	1	Within 5 ft in all directions from point of discharge.
	2	Beyond 5 ft but within 15 ft in all directions from

		point of discharge except within the path of discharge.
Pits or trenches containing or located beneath LP-Gas valves, regulators, and similar equipment:		
Without mechanical ventilation	1 2	Entire pit or trench. Entire room and any adjacent room not separated by a gastight partition.
	2	Within 15 ft in all directions from pit or trench when located outdoors.
With adequate mechanical ventilation	2 2	Entire pit or trench. Entire room and any adjacent room not separated by a gastight partition.
	2	Within 15 ft in all directions from pit or trench when located outdoors.
Special buildings or rooms for storage of portable containers	2	Entire room.
Pipelines and connections containing operational bleeds, drips, vents or drains	1	Within 5 ft in all directions from point of discharge.
Container filling:		
Indoors without ventilation	1	Entire room.
Indoors with adequate ventilation	1	Within 5 ft in all directions and connections regularly made or disconnected for product transfer.
	2	Beyond 5 ft and entire room.
Outdoors in open air	1	Within 5 ft in all directions and connections regularly made or disconnected for product transfer.
	2	Beyond 5 ft but within 15 ft in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator or the sphere and grade.

Table 051-7 Electrical Equipment Classified Areas-Natural Gas (Methane) Areas

Location	NEC Class I Group D	Extent of Classified Area
Nonfired areas containing gas pipeline connections, valves or gages:		
Indoors with adequate ventilation	2	Entire room and any adjacent room not separated by a gastight partition and 15 ft beyond any wall or roof ventilation discharge vent or louver.
Outdoors in open air at or above grade	2	Within 15 ft in all directions of connections, valves, or gages.
Pits, trenches or sumps located in or adjacent to Division 1 or 2 areas	1	Entire pit, trench or sump.

(12) Natural gas (methane).

(a) Natural gas is lighter than air.

(b) Since natural gas is contained in a closed system of piping and equipment, the system need not be electrically conductive or electrically bonded for protection against static electricity.

(c) Fixed electrical equipment and wiring installed within classified areas specified in Table 127-5 shall meet the requirements of ANSI/NFPA 70-1981 [31], Article 500.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05135, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

WAC 296-44-05141 Identification. Electrical equipment and devices shall be identified for safe use and operation. The identification shall be as nearly uniform as practical throughout any one station. Identification marks shall not be placed on removable covers or doors where the interchanging of those covers or doors is possible.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05141, filed 7/25/86.]

WAC 296-44-065 Rotating equipment. Rotating equipment includes generators, motors, motor generators and rotary converters.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-065, filed 7/25/86.]

WAC 296-44-06505 Speed control and stopping devices. (1) Automatic overspeed trip device for prime movers. When harmful overspeed can occur, prime movers driving generating equipment shall be provided with automatic overspeed trip devices in addition to their governors.

(2) Manual stopping devices. Stopping devices, such as switches or valves which can be operated from locations convenient to machine operators, shall be provided for all prime movers and for motors driving generating equipment.

Manual controls to be used in emergency for machinery and electrical equipment shall be located so as to provide protection to the operator during such emergency.

(3) Speed limit for motors. Machines of the following types shall be provided with speed-limiting devices unless their inherent characteristics or the load and the mechanical connection thereto are such as to safely limit the speed.

(a) Separately excited direct-current motors.

(b) Series motors.

(4) Low-voltage protection of motors. All motors so employed or arranged that an unexpected starting of the motor is a personnel hazard shall be equipped with low-voltage protection. This shall automatically cause and

maintain the interruption of the motor circuit when the voltage falls below an operating value. This rule does not apply to those motors with an emergency use and where the opening of the circuit may cause less safe conditions.

(5) Adjustable-speed motors. Adjustable-speed motors, controlled by means of field regulation, shall, in addition to the provisions of WAC 296-44-06505(3), be so equipped and connected that the field cannot be weakened sufficiently to permit dangerous speed.

(6) Protection of control circuits. Where speed-limiting or stopping devices and systems are electrically operated, the control circuits by which such devices are actuated shall be protected from mechanical damage. Such devices and systems should be of the automatic tripping type.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-06505, filed 7/25/86.]

WAC 296-44-06511 Motor control. If the starting is automatic, as for example, by a float switch, or if the starting device or control switch is not in sight, or more than fifty feet distant from the motor and all parts of the machinery operated, the power or control circuit shall be such that it can positively be kept open as by use of lockout/tagout procedures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-06511, filed 7/25/86.]

WAC 296-44-06517 Mobile hydrogen equipment. Mobile hydrogen supply units being used to replenish a hydrogen system shall be bonded both to the grounding system and to the grounded parts of the hydrogen system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-06517, filed 7/25/86.]

WAC 296-44-074 Storage batteries.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-074, filed 7/25/86.]

WAC 296-44-07405 General. The provisions of this section are intended to apply to all stationary installations of storage batteries.

Space shall be provided around batteries for safe inspection, maintenance, testing, and cell replacement and space left above the cells to allow for operation of lifting equipment when required, addition of water, and taking measurements.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07405, filed 7/25/86.]

WAC 296-44-07411 Location. Storage batteries shall be located within a protective enclosure or area accessible only to qualified persons. A protective enclosure can be a battery room, control building, or a case, cage, or fence which will protect the contained equipment and minimize the possibility of inadvertent contact with energized parts.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07411, filed 7/25/86.]

WAC 296-44-07417 Ventilation. The battery area shall be ventilated, either by a natural or powered ventilation system to prevent accumulation of hydrogen. The ventilation system shall limit hydrogen accumulation to less than an explosive mixture. Failure of continuously operated or automatically controlled powered ventilation system shall be annunciated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07417, filed 7/25/86.]

WAC 296-44-07423 Racks. Racks refer to frames designed to support cells or trays. Racks shall be firmly anchored preferably to the floor. Racks should not be anchored to both the walls and the floor, thus allowing movement in the event of an earthquake. Racks made of metal shall be grounded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07423, filed 7/25/86.]

WAC 296-44-07427 Floors in battery areas. Floors of battery areas should be an acid-resistive material, or be painted with acid-resistive paint, or otherwise protected. Provision should be made to contain spilled electrolyte.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07427, filed 7/25/86.]

WAC 296-44-07433 Illumination for battery areas. Lighting fixtures shall be protected from physical damage by guards or isolation. Receptacles and lighting switches should be located outside of battery areas.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07433, filed 7/25/86.]

WAC 296-44-07439 Service facilities. (1) Proper eye protection and clothing shall be provided in the battery area during battery maintenance and installation and shall consist of:

(a) Goggles or goggles and face shield;

(b) Acid resistant gloves;

(c) Protective aprons and overshoes;

(d) Portable or stationary eye washing facilities for rinsing eyes and skin in accordance with chapter 296-62 WAC.

(2) Warning signs inside and outside of a battery room or in the vicinity of a battery area, prohibiting smoking, sparks or flame shall be provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07439, filed 7/25/86.]

PART D—INSTALLATION AND MAINTENANCE OF ELECTRIC SUPPLY STATIONS AND EQUIPMENT

WAC 296-44-086 Transformers and regulators.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-086, filed 7/25/86.]

WAC 296-44-08605 Current-transformer secondary circuits protection when exceeding 600 volts. Secondary circuits, when in a primary voltage area exceeding 600 V should, except for short lead lengths at the terminals of the transformer, have the secondary wiring adequately protected

by means of grounded conduit or by a grounded metallic covering. Current transformers shall have provision for shorting the secondary winding.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-08605, filed 7/25/86.]

WAC 296-44-08611 Grounding secondary circuits of instrument transformers. The secondary circuits of instrument transformers shall be effectively grounded where functional requirements permit.

Note: This will sometimes require marking to distinguish such a circuit from others with which it is associated, but which are protected by ground connections.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-08611, filed 7/25/86.]

WAC 296-44-08619 Location and arrangement of power transformers and regulators. (1) Outdoor installations.

(a) A transformer or regulator shall be installed so that all energized parts are enclosed or guarded so as to minimize the possibility of inadvertent contact, or the energized parts shall be isolated in accordance with WAC 296-44-05125. The case shall be grounded in accordance with WAC 296-44-05119.

(b) Oil-filled transformers shall be protected by one or more of the following methods to minimize fire hazards. The method to be applied shall be according to the degree of fire hazard and the amount of oil contained in the transformer. Recognized methods are space separation, fire-resistant barriers, automatic extinguishing systems, absorption beds and enclosures.

The amount of oil contained should be considered in the selection of space separation, fire-resistant barriers, automatic extinguishing systems, absorption beds, and enclosures which confine the oil of a ruptured transformer tank all of which are recognized safeguards.

(2) Indoor installations.

(a) Transformers and regulators 75 kVA and above containing flammable liquid and located indoors shall be installed in ventilated rooms or vaults separated from the balance of the building by fire walls. Doorways to the interior of the building shall be equipped with fire doors and shall have means of containing the oil.

(b) Transformers or regulators of the dry type or containing a nonflammable liquid or gas may be installed in a building without a fireproof enclosure. When installed in a building which is used for other than station purposes the case or the enclosure shall be designed so that all energized parts are enclosed in the case grounded in accordance with WAC 296-44-05119. As an alternate, the entire unit may be enclosed so as to minimize the possibility of inadvertent contact by persons with any part of the case or wiring. When installed, the pressure relief vent of a unit containing a nonbiodegradable liquid shall be furnished with a means for absorbing toxic gases.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-08619, filed 7/25/86.]

WAC 296-44-098 Conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-098, filed 7/25/86.]

WAC 296-44-09805 Electrical protection. Conductors shall be suitable for the location, use and voltage.

(1) Overcurrent protection required. Conductors and insulation shall be protected against excessive heating by the design of the system and by overcurrent, alarm, indication, or trip devices.

(2) Grounded conductors. Conductors normally grounded for the protection of persons shall be arranged without overcurrent protection or other means which could interrupt their continuity to ground.

(3) Circuits exposed to higher voltages. If exposed through transformer windings or outdoor circuits to higher voltages, circuits of less than 750 volts shall be isolated or grounded unless in suitable cable with grounded metal sheath, placed in grounded conduit or other suitable duct, or identified and guarded as required for conductors of the highest voltage to which they are exposed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09805, filed 7/25/86.]

WAC 296-44-09811 Mechanical protection. All conductors shall be adequately supported to withstand forces caused by the maximum short circuit current to which they may be subjected.

Where exposed to mechanical damage, casing, armor, or other means shall be employed to prevent damage or disturbance to conductors, their insulation, or supports.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09811, filed 7/25/86.]

WAC 296-44-09819 Isolation. All nonshielded insulated conductors of more than 2500 volts to ground and bare conductors of more than 150 V to ground, shall be isolated by elevation or guarded in accordance with WAC 296-44-05125.

Nonshielded, insulated, and jacketed conductors may be installed in accordance with WAC 296-44-05125 (3)(f).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09819, filed 7/25/86.]

WAC 296-44-09826 Conductor terminations. (1) Insulation. Ends and joints of insulated conductors, unless otherwise adequately guarded, shall have insulating covering equivalent to that of other portions of the conductor.

(2) Metal-sheathed or shielded cable. Insulation of the conductors where leaving the metal sheath or shield, shall be protected from mechanical damage, moisture and excessive electrical stress.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09826, filed 7/25/86.]

WAC 296-44-110 Circuit breakers, reclosers, switches and fuses.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-110, filed 7/25/86.]

WAC 296-44-11005 Arrangement. Circuit breakers, reclosers, switches and fuses shall be so installed as to be accessible only to persons qualified for operation and maintenance. Walls, barriers, latched doors, location, isolation or other means shall be provided to protect persons from energized parts or arcing. Conspicuous marking shall be provided at the device and at any remote operating points to identify the equipment controlled. When the contact parts of a switching device are not normally visible, the device shall be equipped with an indicator to show all normal operating positions.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11005, filed 7/25/86.]

WAC 296-44-11021 Application. Circuit breakers, reclosers, switches, and fuses should be utilized with due regard to their assigned ratings of voltage and continuous and momentary currents. Circuit breakers, reclosers and fuses which perform a fault current interrupting function shall be capable of safely interrupting the maximum short circuit current available from the system at the point of application. The interrupting capacity should be reviewed prior to each significant system change.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11021, filed 7/25/86.]

WAC 296-44-11029 Circuit breakers, reclosers and switches containing oil. Circuit interrupting devices containing flammable liquids shall be adequately segregated from other equipment and buildings to limit damage in the event of an explosion or fire. Segregation may be provided by spacing, by fire-resistant barrier walls, or by metal cubicles. Gas relief vents should be equipped with oil separating devices or piped to a safe location. Means shall be provided to control oil which could be discharged from vents or by tank rupture. This may be accomplished by absorption beds, pits, drains, or by any combination of these. Buildings or rooms housing this equipment shall be of fire resistant construction.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11029, filed 7/25/86.]

WAC 296-44-11035 Switches and disconnecting devices. (1) Capacity. Switches shall be of suitable voltage and ampere rating for the circuit in which they are installed. Switches used to break load current shall be marked with the current which they are rated to interrupt. It is recommended that switches that are not rated to interrupt the full load of the circuit be interlocked with circuit breakers to minimize the possibility of the switches being opened under load.

(2) Provisions for disconnecting. Switches and disconnectors shall be so arranged that they can be locked in the open and closed positions, or plainly tagged where it is not possible to install locks. For devices that are operated remotely and automatically, the control circuit shall be provided with a positive disconnecting means near the apparatus to prevent accidental operation of the mechanism.

(3) Visible break switch. A visible break switch or disconnector shall be inserted in each ungrounded conductor between electric supply equipment or lines and sources of energy of more than 600 V, if the equipment or lines may have to be worked on without protective grounding while the sources may be energized.

Where metal clad switchgear equipment is used, the withdrawn position of the circuit breaker, where clearly indicated, constitutes a visible break for this purpose.

(4) Accidental closing. Switches shall be so installed as to minimize the danger of accidental operation, and where practicable so that gravity cannot close them; such switches as may tend to close by gravity shall be provided with a proper latch or stop block to prevent accidental closing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11035, filed 7/25/86.]

WAC 296-44-11041 Disconnection of fuses. Fuses in circuits of more than 150 V to ground or more than 60 A shall be classified as disconnecting fuses or be arranged so that before handling:

(1) The fuses can be disconnected from all sources of electric energy; or

(2) The fuses can be conveniently removed by means of insulating handles.

Fuses can be used to disconnect from the source when they are so rated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11041, filed 7/25/86.]

WAC 296-44-125 Switchgear and metal enclosed bus.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-125, filed 7/25/86.]

WAC 296-44-12505 Switchgear assemblies. (1) General requirements for all switchgear.

(a) To minimize movement, all switchgear shall be secured in a manner consistent with its conditions of service and applicable manufacturer's instructions.

(b) Cable routed to switchgear shall be supported to minimize forces applied to conductor terminals.

(c) Piping containing liquids, or corrosive or hazardous gases, shall not be routed in the vicinity of switchgear unless suitable barriers are installed to protect the switchgear from damage in the event of a pipe failure.

(d) Switchgear shall not be located where foreign flammable or corrosive gases or liquids are intentionally discharged. Companion equipment such as transformers and switchgear are not considered foreign.

(e) Switchgear should not be installed in a location which is still specifically under active construction, especially where welding and burning are required directly overhead. Special precautions should be observed to minimize impingement of slag, metal filings, moisture, dust, or hot particles.

Note: Switchgear may be installed in a general construction area provided suitable temporary protection is provided to minimize the risks associated with general construction activities.

(f) Precautions shall be taken to protect energized switchgear from damage when maintenance is performed in the area.

(g) Switchgear enclosure surfaces shall not be used as physical support for any item unless specifically designed for that purpose.

(h) Enclosure interiors shall not be used as storage areas unless specifically designed for the purpose.

(i) Metal instrument cases shall be grounded, enclosed in covers which are metal and grounded, or of insulating material.

(2) Metal enclosed power switchgear.

(a) Switchgear shall not be located within twenty-five feet horizontally indoors or ten feet outdoors of storage containers, vessels, utilization equipment or devices containing flammable liquids or gases.

Note: If an intervening barrier, designed to mitigate the potential effects of flammable liquids or gases, is installed, the distances listed above do not apply.

The restrictions are not intended to apply to the power transformer(s) supplying the switchgear.

(b) Enclosed switchgear rooms shall have at least two means of egress, one at each extreme of the area, not necessarily in opposite walls. Doors shall swing out and be equipped with panic bars, pressure plates or other devices that are normally latched but open under simple pressure.

Note: One door may be used when required by physical limitations if means are provided for unhampered exit during emergencies.

(c) Space shall be maintained in front of switchgear to allow breakers to be removed and turned without obstruction.

(d) Space shall be maintained in the rear of the switchgear to allow for door opening to at least 90° open, or a minimum of three feet and no inches without obstruction when removable panels are used.

(e) Permanently mounted devices, panelboards, etc., located on the walls shall not encroach on the space requirements in WAC 296-44-12515 (2)(d).

(f) Where columns extend into the room beyond the wall surface, the face of the column shall not encroach on the space requirements in WAC 296-44-12515 (2)(d).

(g) Low-voltage cables or conductors, except those to be connected to equipment within the compartment, shall not be routed through the medium-voltage or high-voltage divisions of switchgear unless installed in rigid metal conduit or isolated by rigid metal barriers.

(h) Low-voltage conductors routed from medium-voltage or high-voltage sections of switchgear shall terminate in a low-voltage section before being routed external to the switchgear.

(i) Conductors entering switchgear shall be insulated for the higher operating voltage in that compartment or be separated from insulated conductors of other voltage ratings.

(j) Switchgear enclosures shall be suitable for the environment in which they are installed.

(k) A warning sign shall be placed in each cubicle containing more than one high-voltage source.

(l) The location of control devices shall be readily accessible to personnel. Instruments, relays and other devices requiring reading or adjustments should be so placed that work can readily be performed from the working space.

(3) Dead front power switchboards. Dead front power switchboards with uninsulated rear connections shall be installed in rooms or spaces that are capable of being locked, with access limited to qualified personnel.

(4) Motor control centers.

(a) Motor control centers shall not be connected to systems having higher short circuit capability than the bus bracing can withstand. Where current limiting fuses are employed on the source side of the bus, the bus bracing and breaker interrupting rating are determined by the peak let-through characteristic of the current limiting fuse.

(b) A warning sign shall be placed in each cubicle containing more than one voltage source.

(5) Control switchboards.

(a) Cabinets containing solid-state logic devices, electron tubes, or relay logic devices such as boiler analog, burner safety, annunciators, computers, invertors, precipitator logic, soot blower control, load control, telemetering, totalizing microwave radio, etc., are covered under these rules.

(b) Where carpeting is installed in rooms containing control switchboards, it shall be antistatic type and shall minimize the release of noxious, corrosive, caustic, or toxic gas under any condition.

(c) Layout of the installation shall provide adequate clearance in front of, or rear of panels if applicable, to allow meters to be read without use of stools or auxiliary devices.

(d) Where personnel access to control panels such as bench boards is required, cables shall be routed through openings separate from the personnel opening. Removable, sliding, or hinged panels are to be installed to close the personnel opening when not in use.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-12505, filed 7/25/86.]

WAC 296-44-12515 Metal enclosed bus. (1) General requirements for all types of bus.

(a) Busways shall be installed only in accessible areas.

(b) Busways unless specifically approved for the purpose, shall not be installed: Where subject to severe physical damage or corrosive vapors; in hoistways; in any classified hazardous location; outdoors or in damp locations.

(c) Dead ends of busway shall be closed.

(d) Busways should be marked with the voltage and current rating for which they are designed, in such manner as to be visible after installation.

(2) Isolated-phase bus.

(a) The minimum clearance between an isolated-phase bus and any magnetic material shall be the distance recommended by the manufacturer to avoid overheating of the magnetic material.

(b) Nonmagnetic conduit should be used to protect the conductors for bus alarm devices, thermocouples, space heaters, etc., if routed within the manufacturer's recommended minimum distance to magnetic material and parallel to isolated-phase bus enclosures.

(c) When enclosure drains are provided for isolated-phase bus, necessary piping shall be provided to divert water away from electrical equipment.

(d) Wall plates for isolated-phase bus shall be nonmagnetic, such as aluminum or stainless steel.

(e) Grounding conductors for isolated-phase bus accessories should not be routed through ferrous conduit.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-12515, filed 7/25/86.]

WAC 296-44-134 Surge arresters.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-134, filed 7/25/86.]

WAC 296-44-13405 General requirements. If arresters are required, they shall be located as close as practical to the equipment they protect.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13405, filed 7/25/86.]

WAC 296-44-13415 Indoor locations. Arresters, if installed inside of buildings shall be enclosed or shall be located well away from passageways and combustible parts.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13415, filed 7/25/86.]

WAC 296-44-13421 Grounding conductors. Grounding conductors shall be run as directly as possible between the arresters and ground and be of low impedance and ample current-carrying capacity (see WAC 296-44-023 for methods of protective grounding).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13421, filed 7/25/86.]

WAC 296-44-13431 Installation. Arresters shall be installed in such a manner and location that neither the expulsion of gases nor the arrester disconnector is directed upon live parts in the vicinity.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13431, filed 7/25/86.]

PART E—INSTALLATION, MAINTENANCE OF OVERHEAD SUPPLY AND COMMUNICATION LINES

WAC 296-44-170 Safety rules for the installation and maintenance of overhead electric supply and communication lines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-170, filed 7/25/86.]

WAC 296-44-17005 Purpose. The purpose of WAC 296-44-170 through 296-44-31792 is the practical safeguarding of persons during the installation, operation, or maintenance of overhead supply and communication lines and their associated equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-17005, filed 7/25/86.]

WAC 296-44-17017 Scope. These sections cover supply and communication conductors and equipment in overhead lines. They cover the associated structural arrangements of such systems and the extension of such systems into buildings. The rules include requirements for spacing, clearances, and strength of construction. They do not cover installations in electric supply stations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-17017, filed 7/25/86.]

WAC 296-44-17029 Application of rules. The general requirements for application of these rules are contained in WAC 296-44-016. However, when a structure is replaced, the arrangement of equipment shall conform to the current edition of WAC 296-44-21287(3).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-17029, filed 7/25/86.]

WAC 296-44-182 General requirements.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-182, filed 7/25/86.]

WAC 296-44-18205 Referenced sections. The introduction WAC 296-44-005, 296-44-013, and 296-44-016, definitions WAC 296-44-011, references WAC 296-44-017, and grounding methods WAC 296-44-023 shall apply to the requirements of WAC 296-44-170 through 296-44-31792.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18205, filed 7/25/86.]

WAC 296-44-18225 Induced voltages. Rules covering supply line influence and communication line susceptiveness have not been detailed in this code. Cooperative procedures are recommended in the control of voltages induced from proximate facilities. Therefore, reasonable advance notice should be given to owners or operators of other proximate facilities which may be adversely affected by new construction or changes in existing facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18225, filed 7/25/86.]

WAC 296-44-18239 Accessibility. All parts which must be examined or adjusted during operation shall be arranged so as to be accessible to authorized persons by the provision of adequate climbing spaces, working spaces, working facilities, and clearances between conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18239, filed 7/25/86.]

WAC 296-44-18250 Inspection and tests of lines and equipment. (1) When in service.

(a) Initial compliance with rules. Lines and equipment shall comply with these safety rules when placed in service.

(b) Inspection. Lines and equipment shall be inspected at such intervals as experience has shown to be necessary.

(c) Tests. When considered necessary, lines and equipment shall be subjected to practical tests to determine required maintenance.

(d) Record of defects. Any defects affecting compliance with this code revealed by inspection or tests, if not promptly corrected, shall be recorded; such records shall be maintained until the defects are corrected.

(e) Remedying defects. Lines and equipment with recorded defects which could reasonably be expected to endanger life or property shall be promptly repaired, disconnected, or isolated.

(2) When out of service.

(a) Lines infrequently used. Lines and equipment infrequently used shall be inspected or tested as necessary before being placed into service.

(b) Lines temporarily out of service. Lines and equipment temporarily out of service shall be maintained in a safe condition.

(c) Lines permanently abandoned. Lines and equipment permanently abandoned shall be removed or maintained in a safe condition.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18250, filed 7/25/86.]

WAC 296-44-18261 Grounding of circuits, supporting structures, and equipment. (1) Methods. Grounding required by these rules shall be in accordance with the applicable methods given in WAC 296-44-023.

(2) Circuits.

(a) Common neutral. A conductor used as a common neutral for primary and secondary circuits shall be effectively grounded as specified in WAC 296-44-023.

(b) Other neutrals. Primary or secondary neutral conductors, other than common neutrals, which are to be effectively grounded, shall be grounded as specified in WAC 296-44-023.

(c) Surge arresters. Where the operation of surge arresters is dependent upon grounding, they shall be grounded in accordance with the methods outlined in WAC 296-44-023.

(d) Use of earth as part of circuit. Supply circuits shall not be designed to use the earth normally as the sole conductor for any part of the circuit.

(3) Noncurrent-carrying parts.

(a) General. Metal or metal reinforced supporting structures, including lamp posts; metal conduits and raceways; cable sheaths; messengers; metal frames, cases and hangers of equipment; and metal switch handles and operating rods shall be effectively grounded.

Note 1: This rule does not apply to frames, cases, and hangers of equipment and switch handles and operating rods which are eight feet or more above readily accessible surfaces or are otherwise isolated or guarded and where the practice of not grounding such items has been a uniform practice over a well defined area.

Note 2: This rule does not apply to isolated or guarded equipment cases in certain specialized applications, such as series capacitors where it is necessary that equipment cases be either ungrounded or connected to the circuit. Such equipment cases shall be considered as energized and shall be suitably identified.

Note 3: This rule does not apply to equipment cases, frames, equipment hangers, conduits, raceways, and cable sheaths enclosing only communications conductors, provided they are not exposed to probable contact with open supply conductors of over 300 volts.

(b) Guys. Guys shall be effectively grounded if attached to a supporting structure carrying any supply conductor of more than 300 volts or if exposed to such conductors.

Note 1: This rule does not apply to guys containing an insulator or insulators installed in accordance with and meeting the requirements of WAC 296-44-31738.

Note 2: This rule does not apply to guys attached to supporting structures if all supply conductors are in cable conforming to the requirements of WAC 296-44-21209 (3)(a), (b), and (c).

Note 3: This rule does not apply if the guy is attached to a supporting structure on private right-of-way if all the supply circuits exceeding 300 volts meet the requirements of WAC 296-44-19209 (2)(b).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18261, filed 7/25/86.]

WAC 296-44-18273 Arrangement of switches. (1) Accessibility. Switches or their control mechanisms shall be installed so as to be accessible to authorized persons.

(2) Indicating open or closed position. Switch position shall be visible or clearly indicated.

(3) Locking. Switch operating mechanisms which are accessible to unauthorized persons shall have provisions for locking in each operational position.

(4) Uniform position. The handles or control mechanisms for all switches throughout any system should have consistent positions when opened and uniformly different positions when closed in order to minimize operating errors. Where this practice is not followed, the switches should be marked to minimize mistakes in operation.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18273, filed 7/25/86.]

WAC 296-44-194 Relations between various classes of lines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-194, filed 7/25/86.]

WAC 296-44-19405 Relative levels. (1) Standardization of levels. The levels at which different classes of conductors are to be located should be standardized by agreement of the utilities concerned.

(2) Relative levels: Supply and communication conductors.

(a) Preferred levels. Where supply and communication conductors cross each other or are located on the same structures, the supply conductors should be carried at the higher level.

Note: This rule does not apply to trolley feeders which may be located for convenience approximately at the level of the trolley-contact conductor.

(b) Special construction for supply circuits, the voltage of which is 600 volts or less and carrying power not in excess of 5 kilowatts. Where all circuits are owned or operated by one party or where cooperative consideration determines that the circumstances warrant and the necessary coordinating methods are employed, single-phase alternating-current or two-wire direct-current circuits carrying a voltage of 600 volts or less between conductors, with transmitted power not in excess of 5 kilowatts, when involved in the joint use of structures with communication circuits may be installed in accordance with Footnote 14 of Table 212-1 and Footnote 1 of Table 212-15, under the following conditions.

(i) That such supply circuits are of covered conductor not smaller than No. 8 AWG medium hard-drawn copper or its equivalent in strength, and the construction otherwise conforms with the requirements for supply circuits of the same class.

(ii) That the supply circuits be placed on the end and adjacent pins of the lowest through signal support arm and that a thirty inch climbing space be maintained from the ground up to a point at least twenty-four inches above the supply circuits. The supply circuits shall be rendered conspicuous by the use of insulators of different form or color from others on the poleline or by stenciling the voltage on each side of the support arm between the pins carrying

each supply circuit, or by indicating the voltage by means of metal characters.

(iii) That there shall be a vertical clearance of at least two feet between the support arm carrying these supply circuits and the next support arm above. The other pins on the support arm carrying the supply circuits may be occupied by communication circuits used in the operation or control of signal system or other supply system if owned, operated, and maintained by the same company operating the supply circuits.

(iv) That such supply circuits shall be equipped with arresters and fuses installed in the supply end of the circuit and where the signal circuit is alternating current, the protection shall be installed on the secondary side of the supply transformer. The arresters shall be designed so as to break down at approximately twice the voltage between the wires of the circuit, but the breakdown voltage of the arrester need not be less than 1 kilovolt. The fuses shall have a rating not in excess of approximately twice the maximum operating current of the circuit, but their rating need not be less than 10 amperes. The fuses likewise shall in all cases have rating of at least 600 volts, and where the supply transformer is a stepdown transformer, shall be capable of opening the circuit successfully in the event the transformer primary voltage is impressed upon them.

(v) Such supply circuits in cable meeting the requirements of WAC 296-44-21209 (3)(a), (b), and (c) may be installed below communication attachments, with not less than two feet vertical separation between the supply cable and the lowest communication attachment. Communication circuits other than those used in connection with the operation of the supply circuits shall not be carried in the same cable with such supply circuits.

(vi) Where such supply conductors are carried below communication conductors, transformers and other apparatus associated therewith shall be attached only to the sides of the support arm in the space between, and at no higher level than, such supply wires.

(vii) Lateral runs of such supply circuits carried in a position below the communication space shall be protected through the climbing space by wood molding or equivalent covering, or shall be carried in insulated multiple-conductor cable, and such lateral runs shall be placed on the underside of the support arm.

(3) Relative levels: Supply lines of different voltage classifications (as classified in Table 212-15).

(a) At crossings or conflicts. Where supply conductors of different voltage classifications cross each other or structure conflict exists, the higher voltage lines should be carried at the higher level.

(b) On structures used only by supply conductors. Where supply conductors of different voltage classifications are on the same structures, relative levels should be as follows:

(i) Where all circuits are owned by one utility, the conductors of higher voltage should be placed above those of lower voltage.

(ii) Where different circuits are owned by separate utilities, the circuits of each utility may be grouped together and one group of circuits may be placed above the other group provided that the circuits in each group are located so that those of higher voltage are at the higher levels and that any of the following conditions are met:

(A) A vertical spacing of not less than that required by Table 212-15 is maintained between the nearest line conductors of the respective utilities.

(B) Conductors of a lower voltage classification placed at a higher level than those of a higher classification shall be placed on the opposite side of the structure.

(C) Ownership and voltage are prominently displayed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-19405, filed 7/25/86.]

WAC 296-44-19421 Avoidance of conflict. Two separate lines, either of which carries supply conductors, should be so separated from each other that neither conflicts with the other. If this is not practical, the conflicting line or lines should be separated as far as possible and shall be built to the grade of construction required by WAC 296-44-242 for a conflicting line, or the two lines shall be combined on the same structures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-19421, filed 7/25/86.]

WAC 296-44-19433 Joint use of structures. Joint use of structures should be considered for circuits along the same general route. The choice between joint use of structures and separate lines shall be determined through cooperative consideration of all the factors involved, including the character of circuits, the total number and weight of conductors, tree conditions, number and location of branches and service drops, possible structure conflicts, availability of right-of-way, etc. Where such joint use is mutually agreed upon, it shall be subject to the appropriate grade of construction specified in WAC 296-44-242.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-19433, filed 7/25/86.]

WAC 296-44-212 Clearances.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-212, filed 7/25/86.]

WAC 296-44-21209 General. (1) Application. This section covers all clearances, including climbing spaces, involving overhead supply and communications lines. Clearances of equipment from structure surfaces, from spaces accessible to the general public, and height above ground are covered in WAC 296-44-31765.

(2) Measurement of clearance and spacing. Unless otherwise stated, all clearances shall be measured from surface to surface and all spacings shall be measured center to center. For clearance measurement, live metallic hardware electrically connected to line conductors shall be considered a part of the line conductors. Metallic bases of potheads, surge arresters, and similar devices shall be considered a part of the supporting structure.

(3) Supply cables. For clearance purposes, supply cables, including splices and taps, conforming to any of the following requirements are permitted lesser clearances than open conductors of the same voltage. Cables should be

capable of withstanding tests applied in accordance with an applicable standard.

(a) Cables of any voltage having an effectively grounded continuous metal sheath or shield, or cables designed to operate on a multigrounded system at 8.7 kV or less, having a semiconducting insulation shield in combination with suitable metallic drainage, all supported on and cabled together with an effectively grounded bare messenger-neutral.

(b) Cables of any voltage, not included in (a) of this subsection covered with a continuous auxiliary semiconducting shield in combination with suitable metallic drainage and supported on and cabled together with an effectively grounded bare messenger.

(c) Insulated, nonshielded cable operated at not over 5 kV phase-to-phase, or 2.9 kV phase-to-ground, supported on and cabled together with an effectively grounded bare messenger.

(4) Covered conductors. Covered conductors shall be considered bare conductors for all clearance requirements except that spacing between conductors of the same or different circuits, including grounded conductors, may be reduced below the minimum requirements for open conductors when the conductors are owned, operated, or maintained by the same party and when the conductor covering provides sufficient dielectric strength to prevent a short circuit in case of momentary contact between conductors or between conductors and the grounded conductor. Intermediate spacers may be used to maintain conductor spacing and provide support.

(5) Neutral conductors.

(a) Neutral conductors which are effectively grounded throughout their length and associated with circuits of 0 to 22 kilovolts to ground may have the same clearances as guys and messengers, except as provided for conductors over railroads in WAC 296-44-21230(1), Table 212-1, Footnote 15.

(b) All other neutral conductors of supply circuits shall have the same clearances as the phase conductors of the circuit with which they are associated.

(6) Alternating and direct current circuits. The rules of this section are applicable to both alternating and direct current circuits. For direct current circuits, the clearance requirements shall be the same as those for alternating current circuits having the same crest voltage to ground.

(7) Constant-current circuits. The clearances for constant-current circuits shall be determined on the basis of their nominal full-load voltage.

(8) Maintenance of clearances and spacings. The clearances and spacing required shall be maintained at the values and under the conditions specified in WAC 296-44-212.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21209, filed 7/25/86.]

WAC 296-44-21221 Clearances of supporting structures from other objects. Supporting structures, support arms and equipment attached thereto, and braces shall have the following clearances from other objects. The clearance shall be measured between the nearest parts of the objects concerned.

(1) From fire hydrants. Not less than three feet.

RECOMMENDATION: Where conditions permit, a clearance of not less than four feet is recommended.

(2) From streets, roads, and highways.

(a) Where there are curbs: Supporting structures, support arms, or equipment attached thereto, up to fifteen feet above the road surface shall be located a sufficient distance from the street side of the curbs to avoid contact by ordinary vehicles using and located on the traveled way. In no case shall such distance be less than six inches.

(b) Where there are no curbs, supporting structures should be located a sufficient distance from the roadway to avoid contact by ordinary vehicles using and located on the traveled way.

(c) Location of overhead utility installations on highways with narrow rights-of-way or on urban streets with closely abutting improvements are special cases which must be resolved in a manner consistent with the prevailing limitations and conditions.

(3) From railroad tracks. Where railroad tracks are paralleled or crossed by overhead lines, all portions of the supporting structures, support arms, anchor guys, and equipment attached thereto less than twenty-two feet above the nearest track rail shall be located not less than twelve feet from the nearest track rail. See WAC 296-44-21253(8).

Note 1: A clearance of not less than seven feet may be allowed where the supporting structure is not the controlling obstruction, provided sufficient space for a driveway is left where cars are loaded or unloaded.

Note 2: Supports for overhead trolley contact conductors may be located as near their own track rail as conditions require. If very close, however, permanent screens on cars will be necessary to protect passengers.

Note 3: Where necessary to provide safe operating conditions which require an uninterrupted view of signals, signs, etc. along tracks, the parties concerned shall cooperate in locating structures to provide the necessary clearance.

Note 4: At industrial sidings, a clearance of not less than seven feet shall be permitted, provided sufficient space is left where cars can be loaded or unloaded.

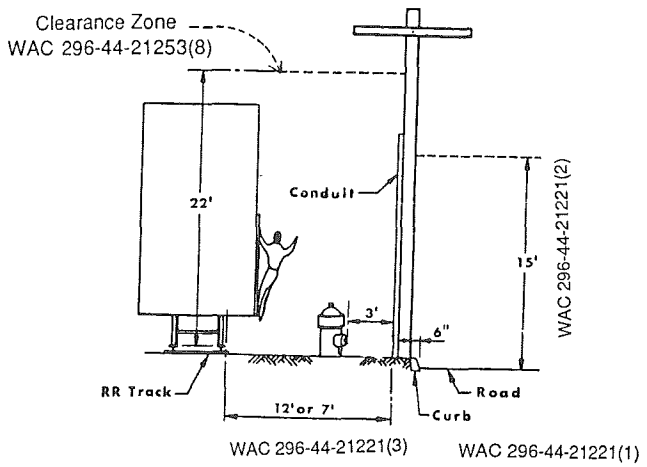


Fig. 212-1

Clearances to Other Objects

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21221, filed 7/25/86.]

WAC 296-44-21230 Vertical clearance of wires, conductors, cables, and live parts of equipment above ground, rails, or water. The vertical clearance of all wires, conductors, cables, and live parts of equipment above ground in generally accessible places, or above the top of the rails or water, shall not be less than the following:

(1) Basic clearances for wires, conductors, and cables. The clearances in Table 212-1 apply under the following conditions:

(a) Conductor temperature of 60°F, no wind, with final unloaded sag in the wire, conductors, or cables, or with initial unloaded sag in cases where these facilities are maintained approximately at initial unloaded sags.

(b) Span lengths not greater than the following:

Loading District	Span Lengths (feet)
Heavy	[1]175
Medium	[1]250
Light	350

[1] One hundred fifty feet in heavy-loading district and two hundred twenty-five feet in medium-loading district for three-stand conductors, each wire of which is 0.09 inches or less in diameter.

Table 212-1 Minimum Vertical Clearance of Wires, Conductors, and Cables Above Ground, Rails, or Water

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)

Nature of Surface underneath wires, conductors, or cables	Communication conductors and cables, guys, messengers, surge protection wires, neutral conductors meeting WAC 296-44-21209 (5)(a), supply cables meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or 296-44-21209 (3)(c)[11] (ft)	Open supply line conductors of 0 to 750 V and supply cables over 750 V meeting WAC 296-44-21209 (3)(b) or 296-44-21209 (3)(c) (ft)	Open supply line conductors		Trolley and electrified railroad contact conductors and associated span or messenger wires[1]	
			750 V to 22 kV (ft)	22 to 50 kV (ft)	0 to 750 V to ground (ft)	750 V to 50 kV to ground (ft)
Where wires, conductors, or cables cross over or overhang						
1. Track rails of railroads (except electrified railroads using over-head trolley conductors) [2 16 20]	[3 15]27	[3]27	[3]28	29	[4]22	[4]22
2. Roads, streets, alleys; nonresidential driveways, parking lots, and other areas subject to truck traffic [21 22]	[6 13 23]18	18	20	21	[5]18	[5]20
3. Residential driveways; commercial areas not subject to truck traffic [21 22]	[24]12	[8a]15	20	21	[5]18	[5]20
4. Other land traversed by vehicles such as cultivated, grazing, forest, orchard, etc.	18	18	20	21	—	—
5. Spaces or ways accessible to pedestrians only [9]	[8 7]15	[8a14]15	15	16	16	18
6. Water areas not suitable for sailboating or where sailboating is prohibited [19]	15	15	17	17	—	—

7. Water areas suitable for sailboating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with an unobstructed surface area of: [17] [18] [19]						
(a) Less than 20 acres	18	18	20	21	—	—
(b) 20 to 200 acres	26	26	28	29	—	—
(c) 200 to 2000 acres	32	32	34	35	—	—
(d) Over 2000 acres	38	38	40	41	—	—
8. Public or private land and water areas posted for rigging or launching sailboats	Clearance above ground shall be 5 ft greater than in 7 above, for the type of water areas served by the launching site					
	Where wires, conductors, or cables run along and within the limits of highways or other road rights-of-way but do not overhang the roadway					
9. Roads, streets, or alleys	[13] [23] [25]18	18	20	21	[5]18	[5]20
10. Roads in rural districts where it is unlikely that vehicles will be crossing under the line	[10] [12]14	[10]15	18	19	[5]18	[5]20

1 Where subways, tunnels, or bridges require it, less clearances above ground or rails than required by Table 232-1 may be used locally. The trolley and electrified railroad contact conductor should be graded very gradually from the regular construction down to the reduced elevation.

2 For wire, conductors, or cables crossing over mine, logging, and similar railways which handle only cars lower than standard freight cars, the clearance may be reduced by an amount equal to the difference in height between the highest loaded car handled and twenty feet, but the clearances shall not be reduced below that required for street crossings.

3 These clearances may be reduced to twenty-five feet where paralleled by trolley-contact conductor on the same street or highway.

4 In communities where twenty-one feet has been established, this clearance may be continued if carefully maintained. The elevation of the contact conductor should be the same in the crossing and next adjacent spans. (See WAC 296-44-31792 (4)(b) for conditions which must be met where uniform height above rail is impractical.)

5 In communities where sixteen feet has been established for trolley and electrified railroad contact conductors 0 to 750 V to ground, or eighteen feet for trolley and electrified railroad contact conductors exceeding 750 V, or where local conditions make it impractical to obtain the clearance given in the table, these reduced clearances may be used if carefully maintained.

6 If a communication service drop or a guy which is effectively grounded or is insulated against the highest voltage to which it is exposed, up to 8.7 kV, crosses residential streets and roads, the clearance may be reduced to sixteen feet at the side of the traveled way provided the clearance at the center of the traveled way is at least eighteen feet. This reduction in clearance does not apply to arterial streets and highways which are primarily for through traffic, usually on a continuous route.

7 This clearance may be reduced to the following values:

	feet
(a) For insulated communication conductors and communication cables	8
(b) For conductors of other communication circuits	10
(c) For guys	8
(d) For supply cables meeting WAC 296-44-21209 (3)(a).	10

8 This clearance may be reduced to the following values:

(a) Twelve feet for supply conductors limited to 300 V to ground

(b) Ten feet for drip loops of service drop conductors limited to 150 V to ground and meeting WAC 296-44-21209 (3)(b) or (c) and the portion of the associated service drop span located within fifteen feet of the service entrance to buildings.

9 Spaces and ways accessible to pedestrians only are areas where vehicular traffic is not normally encountered or not reasonably anticipated.

10 Where a supply or communication line along a road is located relative to fences, ditches, embankments, etc., so that the ground under the line would not be expected to be traveled except by pedestrians, this clearance may be reduced to the following values:

	feet
(a) Insulated communication conductor and communication cables	8
(b) Conductors of other communication circuits	10
(c) Supply cables of any voltage meeting WAC 296-44-21209 (3)(a) and supply cables limited to 150 V to ground meeting WAC 296-44-21209 (3)(b) or (c)	10
(d) Supply conductors limited to 300 V to ground	12
(e) Guys.	8

11 No clearance from ground is required for anchor guys not crossing track rails, streets, driveways, roads, or pathways.

12 This clearance may be reduced to thirteen feet for communication conductors.

13 Where this construction crosses over or runs along alleys, driveways, or parking lots, this clearance may be reduced to fifteen feet for spans limited to one hundred fifty feet.

14 Where supply circuits of 600 V or less, with transmitted power of 5000 W or less, are run along fenced (or otherwise guarded) private rights-of-way in accordance with the provisions specified in WAC 296-44-19409 (2)(b) this clearance may be reduced to ten feet.

15 The value may be reduced to twenty-five feet for guys, for cables carried on messengers, and for supply cables meeting WAC 296-44-21209 (3)(a). This value may be reduced to twenty-five feet for conductors effectively grounded throughout their length and associated with supply circuits of 0 to 22 kV, only if such conductors are stranded, are of corrosion-resistant material, and conform to the strength and tension requirements for messengers given in WAC 296-44-27821(9).

16 Adjacent to tunnels and overhead bridges which restrict the height of loaded rail cars to less than twenty feet, these clearances may be reduced by the difference between the highest loaded rail car handled and twenty feet, if mutually agreed to by the parties at interest.

17 For controlled impoundments, the surface area and corresponding clearances shall be based upon the design high water level. For other waters, the surface area shall be that enclosed by its annual high water mark, and clearances shall be based on the normal flood level. The clearance over rivers, streams, and canals shall be based upon the largest surface area of any one mile long segment which includes the crossing. The clearance over a canal, river, or stream normally used

to provide access for sailboats to a larger body of water shall be the same as that required for the larger body of water.

18 Where an overwater obstruction restricts vessel height to less than the following:

For a surface area in acres of	A reference vessel height in feet of
less than 20	16
20 to 200	24
200 to 2000	30
over 2000	36

the required clearance may be reduced by the difference between the reference vessel height given above and the overwater obstruction height, except that the reduced clearance shall not be less than that required for the surface area on the line crossing side of the obstruction.

19 Where the United States Army Corps of Engineers, or the state, or a surrogate thereof has issued a crossing permit, clearances of that permit shall govern.

20 See WAC 296-44-21253(8) for the required horizontal and diagonal clearances to rail cars.

21 These clearances do not allow for the future road resurfacing.

22 For the purpose of this rule, trucks are defined as any vehicle exceeding eight feet in height. Areas not subject to truck traffic are areas where truck traffic is not normally encountered or not reasonably anticipated.

23 For communications cables supported on a messenger, and with span lengths not exceeding one hundred fifty feet, the clearance may be reduced to seventeen feet above or along local streets or roads. This reduction does not apply for arterial streets or highways which are primarily for through traffic, usually on a continuous route.

24 This clearance may be reduced to ten feet for communication conductors and cables, guys, messengers and supply cables meeting WAC 296-44-21209 (3)(a).

25 Communication cables supported on a steel messenger may have a 60°F clearance of fifteen feet where span lengths do not exceed one hundred fifty feet and poles are back of curbs or other deterrents to vehicular traffic.

(2) Additional clearances for wires, conductors and cables. Greater clearances than specified in Table 212-1, (subsection (1) of this section) shall be provided where required by (a) and (b) of this subsection. Increases are cumulative where more than one apply.

Note 1: Additional clearances are not required for guys.

Note 2: Additional clearances are not required for communication cables supported on messengers and communication wires which do not overhang the traveled way, but run along and within the limits of public highways or other public rights-of-way for traffic.

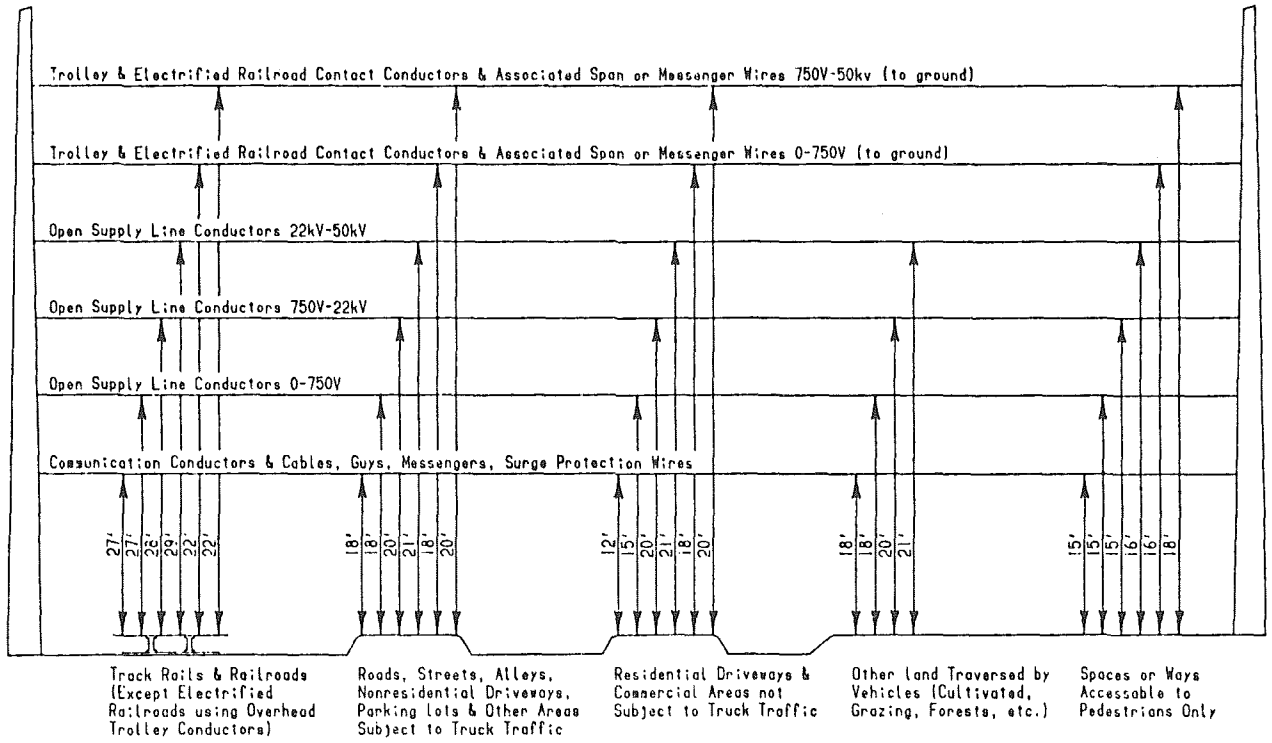


Fig 212-2a
Minimum Vertical Clearence Above Ground or Rails
(Re: Table 212-1)

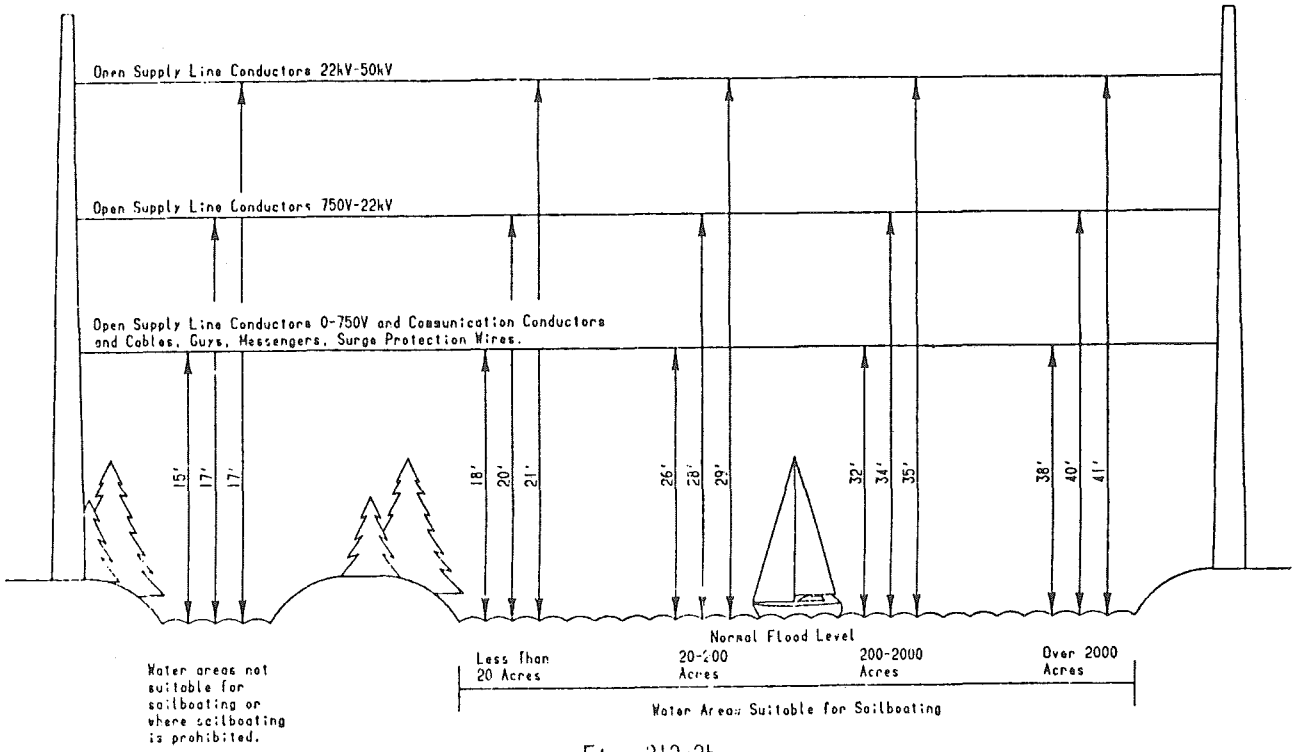


Fig. 212-2b
Minimum Vertical Clearances Above Water
(Re: Table 212-1)

(a) Voltages exceeding 50 kilovolts.

(i) For voltages between 50 and 470 kilovolts, the clearance specified in Table 212-1, (subsection (1) of this section) shall be increased at the rate of 0.4 in per kilovolt in excess of 50 kilovolts. For voltages exceeding 470 kV, the clearance shall be determined by the alternate method given by subsection (4) of this section. All clearances for lines over 50 kV shall be based on the maximum operating voltage.

Note: For voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground, clearances less than those required above are permitted for systems with known maximum switching surge factors (see subsection (4) of this section).

(ii) The additional clearance for voltages exceeding 50 kV specified in (a)(i) of this subsection shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet (1000 m) above mean sea level.

(iii) For voltages exceeding 98 kV alternating current to ground, or 139 kV direct current to ground, either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if the largest anticipated truck, vehicle, or equipment under the line were shortcircuited to ground. For this determination, the conductors shall be at a final unloaded sag at 120°F.

(b) Sag increase.

(i) No additional clearance is required for trolley and electrified railroad contact conductors.

(ii) No additional clearance is required where span lengths are less than those listed in subsection (1)(b) of this section, and the maximum conductor temperature for which the supply line is designed to operate is 120°F or less.

(iii) Where supply lines are designed to operate at or below a conductor temperature of 120°F and spans are longer than specified in subsection (1)(b) of this section, the minimum clearance at midspan shall be increased by the following amounts.

(A) General.

For spans exceeding the limits specified in WAC 296-44-21230 (1)(b), the clearance specified in Table 212-1 shall be increased by 0.1 foot for each ten feet of the excess of span length over such limits. See (b)(iii)(C) of this subsection.

(B) Railroad crossings.

For spans exceeding the limits specified in subsection (1)(b) of this section, the clearance specified in Table 212-1 shall be increased by the following amounts for each ten feet by which the crossing span length exceeds such limits. See (b)(iii)(C) of this subsection.

	Amount of increase per 10 feet	
Loading district	Large conductors (ft)	[1]Small conductors (ft)
Heavy and medium	0.15	0.30
Light	0.10	0.15

[1] A small conductor is a conductor having an overall diameter of metallic material equal to or less than the following values:

Material	Outside diameter of conductor: Solid (inches)	Outside diameter of conductor: Stranded (inches)
All copper	0.160	0.250
Other than all copper	0.250	0.275

(C) Limits.

The maximum additional clearance need not exceed the arithmetic difference between final unloaded sag at a conductor temperature of 60°F (15°C), no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(I) 32°F no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

(II) 120°F (50°C), no wind.

(iv) Where supply lines are designed to operate at conductor temperature above 120°F regardless of span length, the minimum clearance at midspan specified in subsections (1) and (2)(a) of this section shall be increased by the difference between final unloaded sag at a conductor temperature of 60°F no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(A) 32°F no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

(B) The maximum conductor temperature for which the supply line is designed to operate, with no horizontal displacement.

Note: The phase and neutral conductors of a supply line should be considered separately when determining the sag increases of each due to temperature rise.

(v) Where minimum clearance is not at midspan, the additional clearances specified in (b)(iii) and (iv) of this subsection may be reduced by multiplying by the following factors:

Distance from nearer support of crossing span to point of crossing in percentage of crossing span length	Factors[1]
5	0.19
10	0.36
15	0.51
20	0.64
25	0.75
30	0.84
35	0.91
40	0.96
45	0.99
50	1.00

[1] Interpolate for intermediate values.

In applying this rule, the "point of crossing" is the location under the conductors of any topographical feature which is the determinant of the clearance.

(3) Clearance to live parts of equipment mounted on structures.

(a) Basic clearances. The vertical clearance above ground for unguarded live parts such as potheads, transformer bushings, surge arresters, and short lengths of supply conductors connected thereto, which are not subject to variation in sag, shall be as shown in Table 212-2.

Table 212-2. Minimum Vertical Clearance of Rigid Live Parts Above Ground

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de-energizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)

Nature of surface below live parts	0 to 750 V	750 V to 22 kV	22 to 50 kV
1. Where live parts overhang:			
a. Roads, streets, alleys; nonresidential driveways; parking lots and other areas subject to truck traffic [4 5]	16	18	19
b. Residential driveways; commercial areas not subject to truck traffic [4 5]	[1]13	18	19
c. Other land traversed by vehicles such as cultivated land, grazing land, forest, orchard, etc.	16	18	19
d. Spaces and ways accessible to pedestrians only. [6]	[1 3 4]13	13	14
2. Where live parts are along and within the limits of highways or other road rights-of-way but do not overhang the roadway:			
a. Roads, streets, and alleys	[2]16	18	19
b. Roads in rural districts where it is unlikely that vehicles will be crossing under the line.	[2]13	16	17

1 This clearance may be reduced to the following values:

		feet
(a)	Live parts limited to 300 V to ground	12
(b)	Live parts limited to 150 V to ground and drip loops of service drop conductors limited to 150 V to ground and meeting WAC 296-44-21209 (3)(b) or (c).	10

2 Where a supply line along a road is limited to 300 V to ground and is located relative to fences, ditches, embankments, etc., so that the ground under the line would not be expected to be traveled except by pedestrians, this clearance may be reduced to twelve feet.

3 Where supply circuits of 600 V or less, with transmitted power of 5000 W or less, are run along fenced (or otherwise guarded) private rights-of-way in accordance with the provisions specified in WAC 296-44-19409 (2)(b), this clearance may be reduced to ten feet.

4 For the purpose of this rule, trucks are defined as any vehicle exceeding eight feet in height.

5 These clearances do not allow for future road resurfacing.

6 Spaces and ways accessible to pedestrians only are areas where vehicular traffic is not normally encountered or not reasonably anticipated.

(b) Additional clearances for voltages exceeding 50 kilovolts.

(i) For voltages between 50 and 470 kilovolts, the clearance specified in Table 212-2 ((a) of this subsection)

shall be increased at the rate of 0.4 in per kilovolt in excess of 50 kV. For voltages exceeding 470 kV, the clearances shall be determined by the alternate method given by subsection (4) of this section. All clearances for lines over 50 kV shall be based on the maximum operating voltage.

Note: For voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground, clearances less than those required above are permitted for systems with known maximum switching surge factors. (See subsection (4) of this section.)

(ii) The additional clearance for voltages exceeding 50 kV specified in (b)(i) of this subsection shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet above mean sea level.

(iii) For voltages exceeding 98 kV alternating current to ground, or 139 kV direct current to ground either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if the largest anticipated truck, vehicle, or equipment under the line were short-circuited to ground.

(4) Alternate clearances for voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground. The clearances specified in subsections (1), (2) and (3) of this section may be reduced for circuits with known switching surge factors but shall not be less than the values computed by adding the reference height to the electrical component of clearance.

(a) Sag conditions of line conductors. Minimum vertical clearances shall be maintained under the following conductor temperatures and conditions:

(i) 32°F no wind, with radial thickness of ice specified in WAC 296-44-26309(2) for the loading district concerned.

(ii) 120°F, no wind.

(iii) Maximum conductor temperature, for which the line is designed to operate, if greater than 120°F, with no horizontal displacement.

(b) Reference heights are shown in Table 212-3.

(c) Electrical component of clearance.

(i) The clearance computed by the following equation and listed in Table 212-4 shall be added to the reference heights specified in Table 212-3.

$$D = 3.28\left[\frac{V \cdot (PU) \cdot a}{500\,K}\right]^{1.667} bc \quad \text{(ft)}$$

where

V maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

PU maximum switching surge factor expressed in per-unit peak voltage to ground and defined as a switching surge level for circuit breakers corresponding to ninety-eight percent probability that the maximum switching surge generated per breaker operation does not exceed this surge level, or the maximum anticipated switching surge level generated by other means, whichever is greater;

a = 1.15, the allowance for three standard deviations;

b = 1.03, the allowance for nonstandard atmospheric conditions;

c = 1.2, the margin of safety;

K = 1.15, the configuration factor for conductor-to-plane gap.

(ii) The value of D shall be increased three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(iii) Either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if the largest anticipated truck, vehicle, or equipment under the line were shortcircuited to ground. For this determination, the conductors shall be at a final unloaded sag at 120°F.

(d) Limit. The clearances derived from (b) and (c) of this subsection shall be not less than the clearances given in Tables 212-1 or 212-2 computed for 98 kilovolts alternating current to ground in accordance with subsection (2)(a) or (3)(b) of this section, respectively.

Table 212-3 Reference Heights

	Nature of surface underneath lines	Ft
a.	Track rails of railroads (except electrified railroads using overhead trolley conductors)[1]	22
b.	Streets, alleys, roads, driveways, and parking lots	14
c.	Spaces and ways accessible to pedestrians only[2]	9
d.	Other land, such as cultivated, grazing, forest or orchard, which is traversed by vehicles	14
e.	Water areas not suitable for sailboating or where sailboating is prohibited	14
f.	Water areas suitable for sailboating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with unobstructed surface area[3] [4]	
	(1) less than 20 acres	18
	(2) 20 to 200 acres	26
	(3) 200 to 2000 acres	32
	(4) over 2000 acres	38
g.	In public or private land and water areas posted for rigging or launching sailboats, the reference height shall be five feet greater than in f. above, for the type of water areas serviced by the launching site.	

1 See WAC 296-44-21253(8) for the required horizontal and diagonal clearances to rail cars.

2 Spaces and ways accessible to pedestrians only are areas where vehicular traffic is not normally encountered or not reasonably anticipated.

3 For controlled impoundments, the surface area and corresponding clearances shall be based upon the design high water level. For other waters, the surface area shall be that enclosed by its annual high water mark, and clearances shall be based on the normal flood level. The clearance over rivers, streams, and canals shall be based upon the largest surface area of any one-mile-long segment which includes the crossing. The clearance over a canal or similar waterway providing access for sailboats to a larger body of water shall be the same as that required for the larger body of water.

4 Where an overwater obstruction restricts vessel height to less than the following:

For a surface of	A reference vessel height of ft
(1) less than 20 acres	16
(2) 20 to 200 acres	24
(3) 200 to 2000 acres	30
(4) over 2000 acres (800 ha)	36

The required clearance may be reduced by the difference between the reference vessel height given above and the overwater obstruction height, except that the reduced clearance shall not be less than that required for the surface area on the line crossing side of the obstruction.

Table 212-4 Electrical Component of Clearance Above Ground or Rail in (c)(i) of this subsection

(Add three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level. Increase clearance to limit electrostatic effects in accordance with (c)(iii) of this subsection.)

Maximum operating voltage phase-to-phase (kV)	Switching surge factor (per unit)	Switching surge (kV)	Electrical component of clearance (ft)
242	4.5 or less	839 or less	[1]8.6
362	2.8 or less	839 or less	[1]8.6
550	1.9 or less	839 or less	[1]8.6
	2.0	898	10.8
	2.2	988	12.7
	2.4	1079	14.6
	2.6	1168	16.7
800	1.6	1045	13.9
	1.8	1176	16.9
	2.0	1306	20.1
	2.1 or more	1372 or more	[2]21.8

1 Limited by (d) of this subsection.
2 Limited by subsections (1) and (2) of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21230, filed 7/25/86.]

WAC 296-44-21241 Clearances between wires, conductors, and cables carried on different supporting structures. (1) General.

Crossings should be made on a common supporting structure, where practical. In other cases, the clearance between any two crossing or adjacent wires, conductors, or cables carried on different supporting structures shall not be any less at any location in the spans than that required by WAC 296-44-21241. The minimum clearance shall be as illustrated by a clearance envelope developed under WAC 296-44-21241 (1)(b) applied at the positions on or within conductor movement envelopes developed under WAC 296-44-21241 (1)(a) at which the two wires, conductors, or cables would be closest together. For purposes of this determination, the relevant positions of the wires, conductors, or cables on or within their respective conductor movement envelopes are those which can occur when (a) both are simultaneously subjected to the same ambient air temperature and wind loading conditions and (b) each is subjected individually to the full range of its icing conditions and applicable design electrical loading.

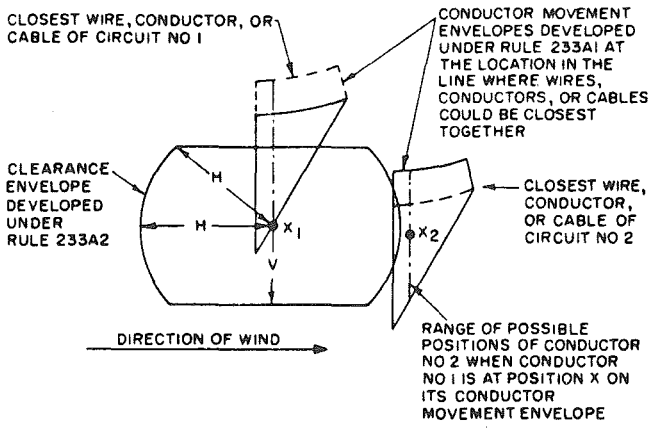


Fig. 212-3

Use of Clearance Envelope and Conductor Movement Envelopes to Determine Applicable Clearance

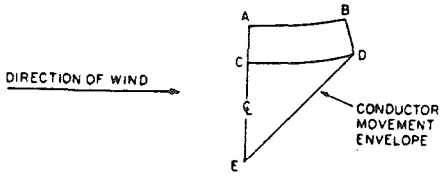
Note 1: In this illustration Conductor No. 2 is closest at position X_2 to Conductor No. 1, where the latter is at position X_1.

Note 2: Fig. 212-3 is a graphical illustration of the application of WAC 296-44-21241(1). Alternative methods which assure compliance with these rules may be used.

(a) Conductor movement envelope.

(i) Development. The conductor movement envelope shall be developed from the locus of the most displaced conductor positions shown in Fig. 212-4. The conductor positions A-E which define the conductor movement envelope include the effects of the basic conditions shown in Fig. 212-4 and the sag increases specified in WAC 296-44-21241 (1)(a)(ii) as applicable.

Fig. 212-4
Conductor Movement Envelope



Point	Conductor Temperature	Sag	Ice Loading	Wind Displacement[1]
A	60°F	initial	none	none
B	60°F	initial	none	6 lb per sq ft[2]
C	60°F	final	none	none
D	60°F	final	none	6 lb per sq ft[2]
E_1[3 4]	The greater of 120°F or maximum operating	final	none	none
E_2[3 4]	32°F	final	as applicable	none

1 The direction of the wind shall be that which produces the minimum separation. The displacement of the wire, conductors or cables includes the deflection of suspension insulators and flexible structures.

2 Wind loading may be reduced to four pounds per square foot in areas sheltered by buildings, terrain, or other obstacles.

3 If no sag increase is required by WAC 296-44-21241 (1)(a)(ii) point E = point C.

4 Line D-E shall be considered to be straight unless the actual concavity characteristics are known.

(ii) Sag increase.

(A) No sag increase is required for trolley and electrified railroad contact conductors.

(B) No sag increase is required where span lengths are less than those listed below and the maximum conductor temperature for which the supply line is designed to operate is 120°F or less.

Loading district	Span lengths (ft)
Heavy	[1]175
Medium	[1]250
Light	350

[1]One hundred fifty feet in heavy-loading district and two hundred twenty-five feet in medium-loading district for three-strand conductors, each of which is 0.09 in or less in diameter.

(C) Where supply lines are designed to operate at or below a conductor temperature of 120°F and spans are longer than specified in WAC 296-44-21241 (1)(a)(ii)(B), the sag at midspan shall be increased by the following:

(I) Where crossing occurs at midspan in the upper conductor sag shall be increased by the following amounts for each ten feet by which the crossing span length exceeds the limits specified in WAC 296-44-21241 (1)(a)(ii)(B).

Loading district	Amount of increase per 10 ft: Large conductors (ft)	Amount of increase per 10 ft: Small[1] conductors (ft)
Heavy and medium	0.15	0.30
Light	0.10	0.15

1 A small conductor is a conductor having an overall diameter of metallic material equal to or less than the following values:

	Outside diameter of conductor: Solid (inches)	Outside diameter of conductor: Stranded (inches)
All copper	0.160	0.250
Other than all copper	0.250	0.275

(II) Limits. The maximum additional sag need not exceed the arithmetic difference between final unloaded sag at a conductor temperature of 60°F no wind, and final sag at the conductor temperature and condition (aa) or (bb) below, whichever difference is greater, computed for the crossing span.

(aa) 32°F, no wind, with radial thickness of ice, if any, specified in Rule 250B for the loading district concerned.

(bb) 120°F, no wind.

(D) Where upper conductors are designed to operate at a conductor temperature above 120°F, the minimum sag at midspan specified in WAC 296-44-21241 (1)(a)(i) and (1)(a)(ii)(B) shall be increased by the difference between final unloaded sag at a conductor temperature of 60°F, no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(I) 32°F, no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

(II) The maximum conductor temperature for which the supply line conductor is designed to operate, with no horizontal displacement.

(E) Where crossing is not at midspan of the upper conductor and under conditions where the upper span exceeds those specified in WAC 296-44-21241 (1)(a)(ii)(B), the additional sag may be reduced by multiplying the additional sag determined by WAC 296-44-21241 (1)(a) (ii) (C) and (D) by the following factors:

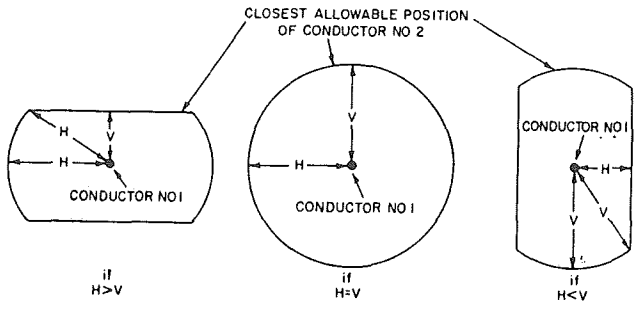
Distance from nearest support of crossing span to point of crossing in percentage of crossing span length	Factors[1]
5	0.19
10	0.36
15	0.51
20	0.64
25	0.75
30	0.84
35	0.91
40	0.96
45	0.99
50	1.00

1 Interpolate for intermediate values.

(b) Clearance envelope.

The clearance envelope shown in Fig. 212-5 shall be determined by the horizontal clearance (H) required by WAC 296-44-21241(2) and the vertical clearance (V) required by WAC 296-44-21241(3).

Fig. 212-5
Clearance Envelope



(2) Horizontal clearance.

(a) Basic clearance requirements. The horizontal clearance between crossing or adjacent wires, conductors or cables carried on different supporting structures shall not be less than five feet. For voltages between the wires, conductors, or cables exceeding 129 kV, additional clearance of 0.4 inches per kV over 129 kV shall be provided.

Note: The horizontal clearance between anchor guys of different supporting structures may be reduced to six inches and may be reduced to two feet between other guys, span wires and neutral conductors meeting WAC 296-44-21209 (5)(a).

(b) Alternate clearances for voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground. The clearances specified in WAC 296-44-21241 (2)(a) may be reduced for circuits with known switching surge factors but shall not be less than the clearances derived from the computations required in WAC 296-44-21265 (2)(c)(i) and (ii).

(3) Vertical clearance.

(a) Basic clearance. The vertical clearance between any crossing or adjacent wires, conductors, or cables carried on different supporting structures shall not be less than those shown in Table 212-5.

Note: No vertical clearance is required between wires, conductors, or cables that are electrically interconnected at the crossing.

Table 212-5. Vertical Clearances of Wires, Conductors, and Cables Carried on Different Supporting Structures

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)
(The insertion of a given clearance in brackets indicates that in general, the lines operating at the voltage named above this clearance should not cross over the lines at the voltage to the left of the clearance in brackets.)

Upper level / Lower level	Communications conductors, cables, and messengers (ft)	Supply cables and messengers meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c) (ft)	Open supply conductors, 0 to 750 V; supply cables over 750 V meeting WAC 296-44-21209 (3)(a) or (b)		Open supply conductors		Guys, span wires, neutral[1] conductors meeting WAC 296-44-21209 (5)(a), and surge protection wires (ft)
			Line conductors (ft)	Service drops (ft)	750,1V to 22 kV (ft)	22 to 50 kV (ft)	
Communications conductors, cables, and messengers	2 2	2	4	6 2	5 6	6	2
Supply cables and messengers meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c)	6 2	6 2	6 2	6 2	6 2	4	6 2
Open supply con-conductors, 0 to 750 V; supply cables over 750 V meeting WAC 296-44-21209 (3)(b) or (c)	[4]	4	6 2	6 2	6 2	4	2
Open supply conductors							
750 V to 22 kV	[5 6]	[4]	[6 2]	[4]	[6 2]	4	4
22 to 50 kV	[6]	[6]	[4]	[6]	[4]	4	4
Trolley and electrified railroad contact conductors and associated span and messenger wires	3 4	3 4	3 4 4	3 4	6	6	3 4
Guys[7], span wires, neutral conductors meeting WAC 296-44-21209 (5)(a), and surge protection wires	2 2	2 2	6 2	6 2	4	4	1 2 2

1 This clearance may be reduced where both guys are electrically interconnected.

2 The clearance of communication conductors and their guy, span, and messenger wires from each other in locations where no other classes of conductors are involved may be reduced by mutual consent of the parties concerned, subject to the approval of the regulatory body having jurisdiction, except for fire-alarm conductors and conductors used in the operation of railroads, or where one set of conductors is for public use and the other used in the operation of supply systems.

3 Trolley and electrified railroad contact conductors of more that 750 V should have at least six feet clearance. This clearance should also be provided over lower voltage trolley and electrified railroad contact conductors unless the crossover conductors are beyond reach of a trolley pole leaving the trolley-contact conductor or are suitably protected against damage from trolley poles leaving the trolley-contact conductor.

4 Trolley and electrified railroad feeders are exempt from this clearance requirement for contact conductors if they are of the same nominal voltage and of the same system.

5 This clearance may be reduced to four feet where supply conductors of 750 V to 8.7 kV cross a communication line more than six feet horizontally from a communication structure.

6 Where a two foot clearance is required at 60°F, and where conditions are such that the sag in the upper conductor would increase more than one and one-half feet at the crossing point under any condition of sag stated in WAC 296-44-21241 (1)(a)(ii), the two foot clearance shall be increased by the amount of sag increase less one and one-half feet.

7 These clearances may be reduced by not more than twenty-five percent to a guy insulator, provided that full clearance is maintained to its metallic end fittings and the guy wires. The clearance to an insulated section of a guy between two insulators may be reduced by not more than twenty-five percent provided that full clearance is maintained to the uninsulated portion of the guy.

Fig. 212-6
Minimum Vertical Clearance Between Wires on Difference Supports
(Re: Table 212-5)

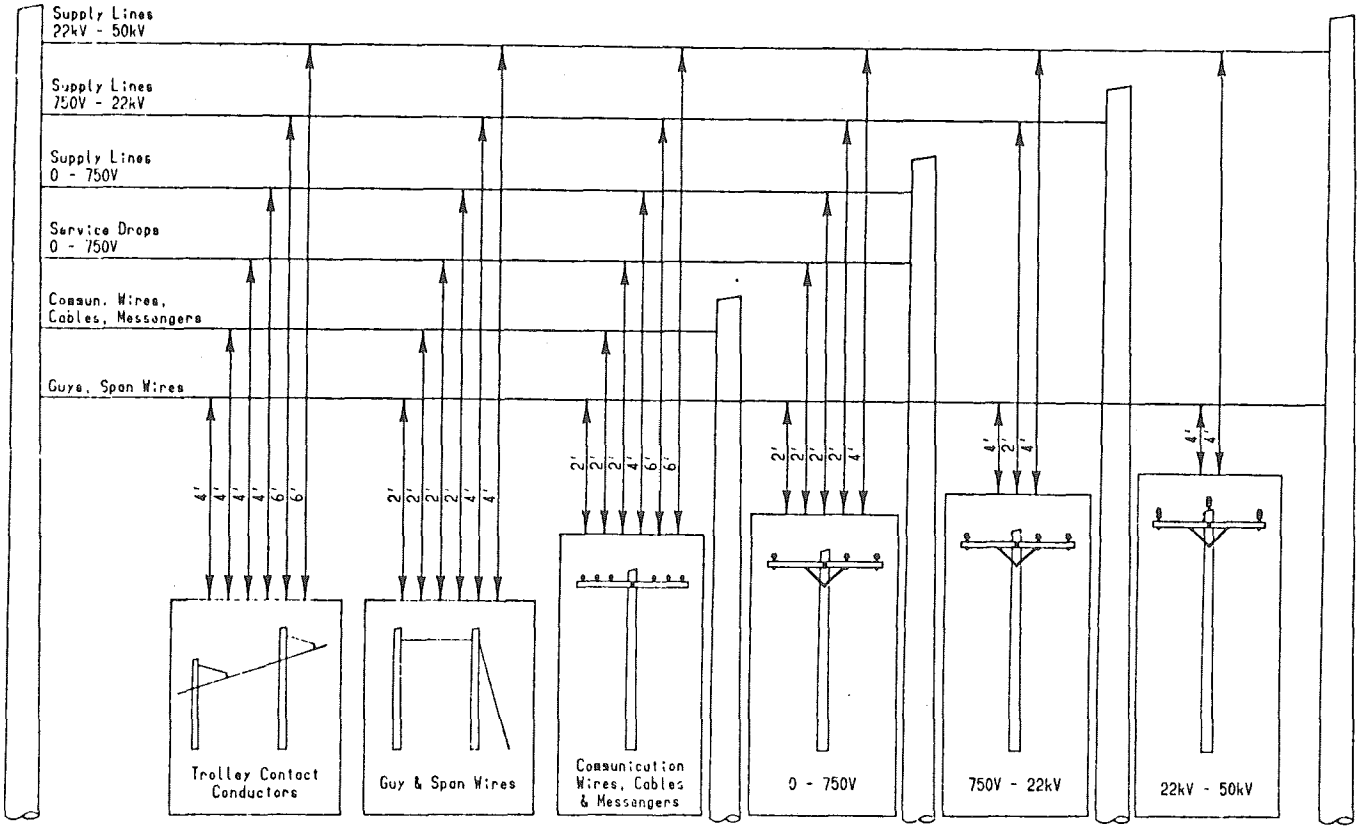


Fig 212-6
Minimum Vertical Clearance Between Wires on Different Supports
(Re: Table 212-5)

(b) Voltages exceeding 50 kilovolts.

(i) The clearance given in Table 212-5 shall be increased by the sum of the following: For the upper level conductors between 50 and 470 kilovolts, the clearance shall be increased at the rate of 0.4 inches per kilovolt in excess of 50 kilovolts. For the lower level conductors exceeding 50 kilovolts, the additional clearance shall be computed at the same rate. For voltages exceeding 470 kilovolts, the clearance shall be determined by the alternate method given in WAC 296-44-21241 (3)(c). The additional clearance shall be computed using the maximum operating voltage if above 50 kilovolts and nominal voltage if below 50 kilovolts.

Note: For voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground, clearances less than those required above are permitted for systems with known switching surge factors. (See WAC 296-44-21241 (3)(c).)

(ii) The additional clearance for voltages in excess of 50 kilovolts specified in WAC 296-44-21241 (3)(b)(i) shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet above mean sea level.

(c) Alternate clearances for voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground. The clearances specified in WAC 296-44-21241 (3)(a) and (b) may be reduced where the higher voltage circuit has a known switching surge factor. For these computations, communication conductors and cables, guys, messengers, neutral conductors meeting WAC 296-44-21209 (5)(a), and supply cables meeting WAC 296-44-21209 (3)(a) shall be considered at zero voltage. The clearances shall not be less than the values computed by adding the reference heights to the electrical component of clearance.

(i) Reference heights.

Reference height	Ft
(1) Supply lines	0
(2) Communication lines	2

(ii) Electrical component of clearance.

(A) The alternate clearance is computed by the following equation and listed in Table 212-6.

$$D = 3.28 \left[\frac{[V_H \cdot (PU) + V_L]\, a}{500\, K} \right]^{1.667} bc \quad \text{(ft)}$$

where

V_H higher voltage circuit maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

V_L lower voltage circuit maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

PU higher voltage circuit maximum switching surge factor expressed in per-unit peak voltage to ground and defined as a switching surge level for circuit breakers corresponding to ninety-eight percent probability that the maximum switching surge generated per breaker operation does not exceed this surge level, or the maximum anticipated switching surge level generated by other means, whichever is greater;

a = 1.15, the allowance for three standard deviations;

b = 1.03, the allowance for nonstandard atmospheric conditions;

c = 1.2, the margin of safety;

K = 1.4, the configuration factor for conductor-to-conductor gap.

(B) The value of D calculated by WAC 296-44-21241 (3)(c)(ii)(A) shall be increased three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(iii) Limit. The value of D shall not be less than the clearance required by WAC 296-44-21241 (3)(a) and (b) with the lower voltage circuit at ground potential.

Table 212-6. Clearance Between Supply Wires, Conductors, and Cables in WAC 296-44-21241 (3)(c)(ii)(A) (Add three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.)

Higher voltage circuit		Lower voltage circuit						
Maximum operating voltage phase to phase (kV)	Switching surge factor (per unit)	Maximum operating voltage, phase to phase (kV) 121 (ft)	145 (ft)	169 (ft)	242 (ft)	362 (ft)	550 (ft)	800 (ft)
242	3.3 or less	[1]7.0	[1]7.0	[1]7.0	[1]7.0			
362	2.4	[1]9.3	[1]9.3	[1]9.3	[1]9.3	9.4		
	2.6	[1]9.3	[1]9.3	[1]9.3	[1]9.3	10.3		
	2.8	[1]9.3	[1]9.3	[1]9.3	9.7	11.3		
	3.0	[1]9.3	9.4	9.7	10.7	12.3		
550	1.8	[1]13.0	[1]13.0	[1]13.0	[1]13.0	[1]13.0	13.6	
	2.0	[1]13.0	[1]13.0	[1]13.0	[1]13.0	[1]13.0	15.3	
	2.2	[1]13.0	[1]13.0	[1]13.0	[1]13.0	14.1	17.0	
	2.4	[1]13.0	[1]13.0	[1]13.0	14.0	15.8	18.8	
	2.6	[2]13.6	[2]14.1	14.5	15.6	17.5	20.7	
800	1.6	[1]17.7	[1]17.7	[1]17.7	[1]17.7	[1]17.7	18.5	22.5
	1.8	[1]17.7	[1]17.7	[1]17.7	[1]17.7	[1]17.7	20.9	25.4

2.0	[1]17.7	[1]17.7	[1]17.7	[2]18.4	[2]20.4	[2]23.1	[2]27.5
2.2	[2]18.4	[2]18.9	[2]19.4	[2]20.8	[2]23.1	[2]26.7	[2]30.8

[1]Limited by WAC 296-44-21241 (3)(c)(iii).
[2]Need not be greater than the values specified in WAC 296-44-21241 (3)(a) and (b).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21241, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

WAC 296-44-21253 Clearance of wires, conductors, and cables from buildings, bridges, rail cars, swimming pools, and other installations. (1) Application. The basic vertical and horizontal clearances specified in WAC 296-44-21253 (2), (3), (4), (5), and (8) apply under the following conditions.

(a) Horizontal clearances. Clearances shall be applied with the wire, conductor, or cable displaced from rest by a six pound per square foot wind at final sag at 60°F. This may be reduced to four pounds per square foot (190 Pa) wind in areas sheltered by buildings, terrain, or other obstacles. The displacement of the wire, conductor, or cable shall include deflection of suspension insulators and flexible structures.

Note: No wind displacement is required for communication conductors and cables, guys, messengers, surge protection wires, neutral conductors meeting WAC 296-44-21209 (5)(a) supply cables of all voltages meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c).

(b) Vertical clearance.

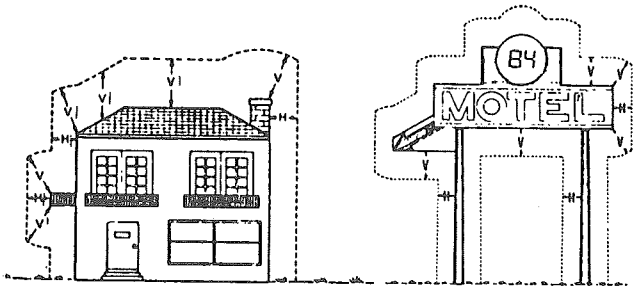
(i) Conductor temperature of 60°F, no wind, with final unloaded sag in the wire, conductors, or cables, or with initial unloaded sag in cases where these facilities are maintained approximately at initial unloaded sags.

(ii) Span lengths not greater than the following:

Span Lengths Loading District	(feet)
Heavy	[1]175
Medium	[1]250
Light	350

[1] One hundred fifty feet in heavy-loading district and two hundred twenty-five feet in medium-loading district for three-strand conductors, each of which is 0.09 inches or less in diameter.

(c) Diagonal clearance. The horizontal clearance governs above the roof level or top of an installation to the point where the diagonal equals the vertical clearance requirement. Similarly, the horizontal clearance governs above or below projections from buildings, signs, or other installations to the point where the diagonal equals the vertical clearance requirement. The fifteen feet for roofs accessible to pedestrians agrees with Table 212-1 for spaces and ways accessible to pedestrians only. From this point the diagonal clearance shall equal the vertical clearance as shown in Figure 212-7. This rule should not be interpreted as restricting the installation of a trolley-contact conductor over the approximate center line of the track it serves.



V = Minimum vertical clearance, measured either diagonally or vertically.
H = Minimum horizontal clearance.

Fig. 212-7
Clearance Diagram for Building and Other Structures
(Re: Table 212-7)

(2) Clearances of wires, conductors, and cables from other supporting structures.

Wires, conductors, or cables of one line passing near a lighting support, traffic signal support, or a supporting structure of a second line, without being attached thereto, shall have clearance from any part of such structure not less than the following:

(a) A minimum horizontal clearance of five feet for voltages up to 50 kilovolts.

(b) A minimum vertical clearance of six feet for voltages below 15 kilovolts and a minimum vertical clearance of seven feet for voltages between 15 and 50 kilovolts.

Note 1: Where the voltage does not exceed 300 V to ground and the cables meet the requirements of WAC 296-44-21209 (3)(a), (b) or (c), the vertical and horizontal clearances may be reduced to four feet measured at 60°F without wind deflection.

Note: Clearances of wires, conductors, and cables from adjacent line structure guy wires are given in WAC 296-44-21241.

Note 2: The vertical clearances may be reduced by two feet if both of the following conditions are met:

(i) The wires, conductors, or cables above and the supporting structure of another line below are operated and maintained by the same utility.

(ii) Employees do not work above the top of the supporting structure unless:

(A) The upper circuit is de-energized or temporarily insulated or repositioned, or

(B) Other equivalent measures are taken.

Table 212-7 Clearance of Wires, Conductors, and Cables Passing by but Not Attached to Building and Other Installations Except Bridges

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definitions section for voltages of other systems.)