

the following filing system is utilized at the board's administrative office:

- (1) Complaints received by the board are indexed by year, number, and name of the respondent and agency.
- (2) Whistleblower referrals from the state auditor are indexed by whistleblower case number.
- (3) Contract approvals are filed by year and name of the state employee.
- (4) Agency ethics policies are filed by agency name.

[Statutory Authority: RCW 42.52.360 (2)(b) and 42.52.425. 01-13-033, § 292-130-060, filed 6/13/01, effective 7/14/01. Statutory Authority: RCW 42.52.360 (2)(b). 98-22-072, § 292-130-060, filed 11/3/98, effective 12/4/98.]

WAC 292-130-065 Index after January 1, 2001. The board has indexed by subject matter the advisory opinions of the board. The index is maintained in the administrative office and is accessible at the board's web site located at www.wa.gov/ethics.

The volume of correspondence managed by the office is such that it would be unduly burdensome to formulate and maintain an index of all correspondence. In lieu of an index, the following filing system is utilized at the board's administrative office:

- (1) Complaints, including referrals from the state auditor, received by the board are indexed by year, month, day, and sequential number. Complaints that are referred for full investigation are indexed by year and sequential case number.
- (2) Requests for advisory opinions, including informal staff analysis, are indexed by year, month, day, and sequential number. Advisory opinions issued by the board are indexed by year and sequential opinion number.
- (3) Requests for contract approvals, under WAC 292-110-060 are indexed by year, month, day, sequential number and name of the state employee.
- (4) Requests for board review of agency ethics policies, filed under RCW 42.52.360(4) are indexed by year, month, day, and sequential number. Agency ethics policies that are approved by the board are indexed by year, month, day, sequential policy number, and agency name.

[Statutory Authority: RCW 42.52.360 (2)(b) and 42.52.425. 01-13-033, § 292-130-065, filed 6/13/01, effective 7/14/01.]

WAC 292-130-070 Public records—Officer. The public records officer for the board shall be the executive director to the board.

[Statutory Authority: RCW 42.52.360 (2)(b) and 42.52.425. 01-13-033, § 292-130-070, filed 6/13/01, effective 7/14/01. Statutory Authority: RCW 42.52.360 (2)(b). 98-22-072, § 292-130-070, filed 11/3/98, effective 12/4/98.]

WAC 292-130-080 Hours for seeking public records. Public records shall be available for inspection and copying from 9:00 a.m. to noon and from 1:00 p.m. to 4:00 p.m., Monday through Friday, excluding legal holidays and during regularly scheduled board meetings.

[Statutory Authority: RCW 42.52.360 (2)(b) and 42.52.425. 01-13-033, § 292-130-080, filed 6/13/01, effective 7/14/01. Statutory Authority: RCW 42.52.360 (2)(b). 98-22-072, § 292-130-080, filed 11/3/98, effective 12/4/98.]

WAC 292-130-130 Exemptions. (1) The board reserves the right to determine that a public record requested in accordance with the procedures outlined in WAC 292-130-060 is exempt under the provisions of RCW 42.17.310.

(2) It is the policy of the board during the course of any investigation that all records generated or collected as a result of that investigation are exempt from public inspection and copying under RCW 42.17.310 (1)(d). The investigation is not considered complete until a case is resolved either by a stipulation and settlement that is signed by all parties; or, when the board enters a final order after a public hearing. If a public records request is made following a signed stipulation and settlement or a final order for any such record which implicates the privacy of an individual, written notice of the records request will be provided to the individual in order that such individual may request a protective order from a court under RCW 42.17.330. The following records are not considered part of the investigation file and are releasable upon request:

- (a) Complaints, upon receipt by the respondent;
- (b) The board staff's preliminary review or investigation report;
- (c) The board's findings of reasonable cause or no reasonable cause; and
- (d) Proposed stipulations and settlements, upon receipt by the board.

(3) In addition, pursuant to RCW 42.17.310, the board reserves the right to withhold or delete information when it makes available or publishes any public record in any cases where there is reason to believe that disclosure of such details would be otherwise exempt from disclosure under chapter 42.17 RCW. The public records officer will fully justify such deletion in writing.

(4) Any denial of requests for public records must be accompanied by a written statement specifying the reason for the denial, including a statement of the specific exemption authorizing the withholding of the record and a brief explanation of how the exemption applies to the records withheld.

[Statutory Authority: RCW 42.52.360 (2)(b) and 42.52.425. 01-13-033, § 292-130-130, filed 6/13/01, effective 7/14/01. Statutory Authority: RCW 42.52.360 (2)(b). 98-22-072, § 292-130-130, filed 11/3/98, effective 12/4/98.]

Title 296 WAC

LABOR AND INDUSTRIES, DEPARTMENT OF

Chapters

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|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 296-04 | Internal rules—state apprenticeship and training council. |
| 296-05 | Apprenticeship rules. |
| 296-17 | General reporting rules, classifications, audit and recordkeeping, rates and rating system for Washington workers' compensation insurance. |
| 296-20 | Medical aid rules. |
| 296-23 | Radiology, radiation therapy, nuclear medicine, pathology, hospital, chiro- |

	practic, physical therapy, drugless therapeutics and nursing—Drugless therapeutics, etc.
296-23A	Hospitals.
296-23B	Ambulatory surgery center payment.
296-24	General safety and health standards.
296-27	Recordkeeping and reporting.
296-30	Rules for the administration of the crime victims compensation program.
296-31	Crime victims compensation mental health treatment rules and fees.
296-32	Safety standards for telecommunications.
296-36	Safety standards—Compressed air work.
296-37	Standards for commercial diving operations.
296-45	Safety standards for electrical workers.
296-46A	Safety standards—Installing electric wires and equipment—Administrative rules.
296-52	Safety standards for the possession and handling of explosives.
296-54	Safety standards—Logging operations.
296-56	Safety standards—Longshore, stevedore and related waterfront operations.
296-59	Safety standards for ski area facilities and operations.
296-62	General occupational health standards.
296-63	Right to know fee assessment.
296-67	Safety standards for process safety management of highly hazardous chemicals.
296-78	Safety standards for sawmills and wood-working operations.
296-79	Safety standards for pulp, paper, and paperboard mills and converters.
296-96	Safety regulations and fees for all elevators, dumbwaiters, escalators and other conveyances.
296-99	Safety standards for grain handling facilities.
296-104	Board of boiler rules—Substantive.
296-131	Agricultural employment standards.
296-150C	Commercial coaches.
296-150F	Factory-built housing and commercial structures.
296-150M	Manufactured homes.
296-150P	Recreational park trailers.
296-150R	Recreational vehicles.
296-150T	Factory-built temporary worker housing structures.
296-150V	Conversion vendor units and medical units.
296-155	Safety standards for construction work.
296-200A	Contractor certificate of registration renewals—Security—Insurance.
296-301	Safety standards for the textile industry.
296-302	Safety standards for bakery equipment.
296-303	Safety standards for laundry machinery and operations.
296-304	Safety standards for ship repairing, ship-building and shipbreaking.
296-305	Safety standards for fire fighters.
296-307	Safety standards for agriculture.
296-350	WISHA administrative rules.
296-401B	Certification of competency for journeyman electricians.
296-800	Safety and health core rules.

Chapter 296-04 WAC INTERNAL RULES—STATE APPRENTICESHIP AND TRAINING COUNCIL

WAC

296-04-001 through 296-04-480 Repealed.

DISPOSITION OF SECTIONS FORMERLY
CODIFIED IN THIS CHAPTER

296-04-001	Foreword. [Statutory Authority: RCW 49.04.010. 95-07-117, § 296-04-001, filed 3/21/95, effective 4/21/95. 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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-005	Apprenticeship and training agreements—Proposed standards. [Statutory Authority: RCW 49.04.010. 95-07-117, § 296-04-005, filed 3/21/95, effective 4/21/95. 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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-010	Regular meetings. [§ II, filed 10/11/65; § II, filed 2/12/65; § I, filed 3/23/60.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-015	Definitions. [Statutory Authority: RCW 49.04.010. 95-07-117, § 296-04-015, filed 3/21/95, effective 4/21/95. 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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-040	Council meetings—When held—Notice—Who may attend—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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-042	Voting. [Statutory Authority: RCW 49.04.010. 90-16-031, § 296-04-042, filed 7/23/90, effective 8/23/90.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-045	Supervisor-administrator of council. [Order 71-3, § 296-04-045, filed 3/25/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-05001	Plant program defined. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-060	Officers, appointment, duties—Ex officio members. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-090	Rules of order. [§ X, filed 10/11/65; § X, filed 2/12/65; § VI, filed 3/23/60.] Repealed by 01-22-055, filed

296-04-105	10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. Retroactivity. [Order 71-3, § 296-04-105, filed 3/25/71; § XII, filed 10/11/65; § XII, filed 2/12/65.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-330	1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. Equal opportunity standards. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-115	Amendment. [Order 71-3, § 296-04-115, filed 3/25/71; § XIII, filed 10/11/65; § XIII, filed 2/12/65.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-340	Affirmative action plans. [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 71-13, § 296-04-340, filed 1/25/77; Order 71-13, § 296-04-340, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-125	Rule change-procedures and forms. [Order 71-3, § 296-04-125, filed 3/25/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-350	Selection of apprentices. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-160	Apprenticeship committees. [Statutory Authority: RCW 49.04.010, 95-07-117, § 296-04-160, filed 3/21/95, effective 4/21/95. 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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-351	Employer's responsibility. [Order 76-4, § 296-04-351, filed 2/20/76.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-165	Union waiver. [Statutory Authority: RCW 49.04.010, 95-07-117, § 296-04-165, filed 3/21/95, effective 4/21/95; 78-12-022 (Order 78-21), § 296-04-165, filed 11/14/78.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-360	Existing lists of eligibles and public notice. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-260	Merit awards. [Order 71-3, § 296-04-260, filed 3/25/71; § XXV, filed 10/11/65; § XXV, filed 2/12/65.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-370	Records. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-270	Apprenticeship agreements—Types—Standards—Registration, review, cancellation, reregistration—Certificate of completion. [Statutory Authority: RCW 49.04.010, 95-07-117, § 296-04-270, filed 3/21/95, effective 4/21/95; 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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-380	Compliance reviews. [Order 71-13, § 296-04-380, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-275	Reciprocity. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-390	Noncompliance with federal and state equal opportunity requirements. [Order 71-13, § 296-04-390, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-280	On-the-job training programs. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-400	Complaint procedure. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-295	Complaint review procedure. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-410	Adjustments in schedule for compliance review or complaint 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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-300	Promulgation. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-420	Sanctions. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
296-04-310	Authority. [Order 71-13, § 296-04-310, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-04-430	Reinstatement of program registration. [Order 71-13, § 296-04-430, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
		296-04-440	Adoption of consistent state plans. [Statutory Authority: RCW 49.04.010, 95-07-117, § 296-04-440, filed 3/21/95, effective 4/21/95; 78-12-021 (Order 78-20), § 296-04-440, filed 11/14/78; Order 71-13, § 296-04-440, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.
		296-04-460	Intimidatory or retaliatory acts. [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.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-05-433	Enrollment deficiency analysis.
296-04-470	Nondiscrimination. [Order 71-13, § 296-04-470, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-05-435	Data and information.
296-04-480	Exemptions. [Order 76-4, § 296-04-480, filed 2/20/76; Order 71-13, § 296-04-480, filed 10/28/71.] Repealed by 01-22-055, filed 10/31/01, effective 1/17/02. Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW.	296-05-437	Developing and evaluating enrollment goals and timetables.
		296-05-439	Failure to meet goals and timetables.
		296-05-441	Noncompliance with federal and state equal opportunity requirements.
		296-05-443	Complaint filing.
		296-05-445	Private review panels.
		296-05-447	Processing of complaints.
		296-05-449	Program registration cancellation procedures.
		296-05-451	Reinstatement of program registration.
		296-05-453	Adoption of consistent state plans.
		296-05-455	Intimidatory or retaliatory acts.
		296-05-457	Exemptions.

WAC 296-04-001 through 296-04-480 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-05 WAC APPRENTICESHIP RULES

WAC

296-05-001	Purpose, scope, and authority.
296-05-003	Definitions.
296-05-005	Rule development.
296-05-007	Rules of procedure.
296-05-009	Complaint review procedures.
296-05-011	Compliance reviews.
296-05-013	Sanctions for noncompliance.
296-05-100	WSATC composition.
296-05-103	Officers.
296-05-105	Officer duties.
296-05-107	Additional duties for the supervisor-administrator of WSATC.
296-05-109	Merit awards.
296-05-200	Regular meetings.
296-05-203	Special meetings.
296-05-205	Petitions, requests, and correspondence submitted to the WSATC.
296-05-207	Other regulations that apply to council meeting conduct.
296-05-209	Voting.
296-05-211	Rules of order.
296-05-213	Retroactivity.
296-05-300	Apprenticeship and training programs—Approval.
296-05-302	Apprenticeship committee/program approval process.
296-05-303	Apprenticeship committees—Duties and responsibilities.
296-05-305	Apprenticeable occupations.
296-05-307	Types of apprenticeship agreements recognized by the WSATC.
296-05-309	Apprenticeship programs approved by the WSATC.
296-05-311	On-the-job training programs.
296-05-313	Apprenticeship committees—Composition.
296-05-315	Nonjoint and waiver committees—Additional requirements.
296-05-316	Apprenticeship agreements—Standards requirements.
296-05-317	Related/supplemental instruction.
296-05-318	Records required by the WSATC.
296-05-319	Apprenticeship agreement—Individual registration.
296-05-321	Apprenticeship agreement—Cancellation.
296-05-323	Certificate of completion.
296-05-325	Union waiver.
296-05-327	Reciprocity.
296-05-400	Equal employment opportunity plan—Purpose, scope and authority.
296-05-402	Equal employment opportunity process.
296-05-403	Definitions for Part D.
296-05-405	Exceptions to the requirement for adopting an affirmative action plan and a selection procedure.
296-05-407	Apprenticeship program sponsor's obligations.
296-05-409	Affirmative action information required by WSATC.
296-05-411	Affirmative action plan.
296-05-413	Outreach and recruitment requirements—Specific.
296-05-415	Affirmative action goals and timetables.
296-05-417	Selection of apprentices for approved apprenticeship programs.
296-05-419	Qualification standards.
296-05-427	Notification requirements.
296-05-429	Existing lists of eligibles and public notice.
296-05-431	Affirmative action records of the WSATC retained by the department.

WAC 296-05-001 Purpose, scope, and authority. (1) The Washington State Apprenticeship and Training Act (chapter 49.04 RCW) establishes the Washington state apprenticeship and training council (WSATC) and designates as its administrative arm the apprenticeship section of the department of labor and industries. The WSATC, acting in compliance with chapter 49.04 RCW, 29 CFR Part 29 and 29 CFR Part 30, has adopted these rules to:

- (a) Establish operating procedures for the WSATC;
 - (b) Establish standards for apprenticeship programs;
 - (c) Implement the intent and purpose of the Washington State Apprenticeship and Training Act;
 - (d) Perform other duties directed by the statute;
 - (e) Promote labor standards and the registration of approved programs to protect the welfare of the apprentice; and
 - (f) Encourage the establishment of apprenticeship programs and committees.
- (2) These rules are necessary to:
- (a) Strengthen apprenticeship and training in the state of Washington;
 - (b) Facilitate approval and registration of apprenticeship and training programs;
 - (c) Explain factors related to apprenticeship and training in Washington state and federal laws;
 - (d) Establish procedures for presenting matters to the WSATC;
 - (e) Govern the WSATC's operation and ability to carry out its statutory obligations;
 - (f) Establish a specific procedure to resolve an impasse if a tie vote occurs on the WSATC; and
 - (g) Regulate registered apprenticeship and training programs.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW, 01-22-055, § 296-05-001, filed 10/31/01, effective 1/17/02.]

WAC 296-05-003 Definitions. The following definitions apply to this chapter:

Adjudicative proceeding: A proceeding before the WSATC in which an opportunity for a hearing before the WSATC is authorized by chapter 49.04 RCW or these rules before or after the entry of an order by the WSATC.

Apprentice: Is an individual who is employed to learn an apprenticeable occupation and is registered with a sponsor in an approved apprenticeship program according to chapter 49.04 RCW and these rules.

Apprenticeable occupation: Is a skilled trade(s) or craft(s) which has been recognized by the United States

Department of Labor, Office of Apprenticeship, Training, Employer, and Labor Services or the WSATC and meets the criteria established in WAC 296-05-305.

Apprenticeship agreement: A written agreement between an apprentice and either the apprentice's employer(s), or an apprenticeship committee acting as agent for employer(s), containing the terms and conditions of the employment and training of the apprentice.

Apprenticeship committee: A quasi-public entity approved by the WSATC to perform apprenticeship and training services for employers and employees.

Apprenticeship program: A plan for administering an apprenticeship agreement(s). The plan must contain all terms and conditions for the qualification, recruitment, selection, employment and training of apprentices, including such matters as the requirement for a written apprenticeship agreement.

Approved: Approved by the WSATC or a person or entity authorized by the WSATC to do so.

CFR: The Code of Federal Regulations.

Cancellation: The termination of the registration or approval status of a program at the request of the supervisor or sponsor. Cancellation also refers to the termination of an apprenticeship agreement at the request of the apprentice, supervisor, or sponsor.

Certificate of completion: A record of the successful completion of a term of apprenticeship (see WAC 296-05-323).

Certification: Written approval by the WSATC of:

(1) A set of apprenticeship standards established by an apprenticeship program sponsor and substantially conforming to the standards established by the WSATC.

(2) An individual as eligible for probationary employment as an apprentice under a registered apprenticeship program.

Committee program: All apprenticeship programs as further described in WAC 296-05-309.

Competent instructor: An instructor who has demonstrated a satisfactory employment performance in his/her occupation or trade for a minimum of three years beyond the customary learning period for that trade or occupation.

Current instruction: The related/supplemental instructional content is and remains reasonably consistent with the latest trade practices, improvements, and technical advances.

Department: The department of labor and industries.

Employer: Any person or organization employing an apprentice whether or not such person or organization is a party to an apprenticeship agreement with the apprentice. "Employer" includes both union and open shop employers.

File: To send to:

Supervisor of Apprenticeship and Training
Department of Labor and Industries
Apprenticeship Section
Post Office Box 44530
Olympia, Washington 98504-4530

Or deliver to and receipt at:
Department of Labor and Industries
7273 Linderson Way SE
Tumwater, Washington 98501

Individual agreement: A written agreement between an apprentice and/or trainee and either the apprentice's employer or an apprenticeship committee acting as agent for the employer.

Industry wide standards: The current, acceptable trade practices, including technological advancements, that are being used in the different trades.

Journey level: An individual who has sufficient skills and knowledge of a trade, craft, or occupation, either through formal apprenticeship training or through practical on-the-job work experience, to be recognized by a state or federal registration agency and/or an industry as being fully qualified to perform the work of the trade, craft, or occupation. Practical experience must be equal to or greater than the term of apprenticeship.

On-the-job training program: A program that is set up in the same manner as an apprenticeship program with any exceptions authorized by the WSATC and as further described in WAC 296-05-311.

Notice: Where not otherwise specified, notice means posted in United States mail to the last known address of the person to be notified. Notice may be given by telefacsimile where copies are mailed simultaneously or by a commercial parcel delivery company.

Petitions, requests, and correspondence: Any written business brought before the WSATC (examples may include: (1) Requests for new committees; (2) Requests for revisions to the standards; and (3) Appeals).

Probation: (1) Initial: The period following the apprentice's acceptance into the program which is limited in time by these rules and during which the apprentice's appeal rights are impaired. (2) Disciplinary: A time assessed when the apprentice's progress is not satisfactory. During this time the program sponsor may withhold periodic wage advancements, suspend or cancel the apprenticeship agreement, or take further disciplinary action. A disciplinary probation may only be assessed after the initial probation is completed. During the disciplinary probation, the apprentice has the right to file an appeal of the committee's action with the WSATC (as described in WAC 296-05-009).

RCW: The Revised Code of Washington.

Registration: Maintaining the records of apprenticeship and training agreements and of training standards.

Regular quarterly meeting: A public meeting held quarterly by the WSATC as described in WAC 296-05-200.

Related/supplemental instruction: Is instruction approved by the program sponsor and taught by an instructor approved by the program sponsor. Instructors must be competent in his/her trade or occupation. A sponsor must review related/supplemental instruction annually to insure that it is relevant and current.

Relevant instruction: Is related/supplemental instructional content that is directly required in and applicable to the performance of the apprentice's work. Relevant does not

mean academic course content taught by a solely academically qualified instructor except for courses approved by the committee or specified by state law.

Secretary: The individual appointed by the director of the department according to RCW 49.04.030.

Special meeting: A public meeting of the council as described in WAC 296-05-203.

Sponsor: Any person, firm, association, committee, or organization operating an apprenticeship and training program and in whose name the program is registered or is to be registered.

Standards: Is a written agreement containing specific provisions for operation and administration of the apprenticeship program and all terms and conditions for the qualifications, recruitment, selection, employment, and training of apprentices, as further defined in WAC 296-05-316.

Supervision: The necessary education, assistance, and control provided by a journey-level employee that is on the same job site at least seventy-five percent of each working day, unless otherwise approved by the WSATC.

Supervisor: The individual appointed by the director of the department according to RCW 49.04.030 who acts as the secretary of the WSATC. Where these rules indicate a duty of the supervisor or secretary of the WSATC, the supervisor may designate a department of labor and industries' employee to assist in the performance of those duties subject to the supervisor's oversight and direction.

Trade: Any apprenticeable occupation defined by the apprenticeship, training, employer and labor services section of the United States Department of Labor and these rules.

Trainee: An individual registered with the supervisor according to WAC 296-05-311.

Training agent: Employer of registered apprentices approved by the program sponsor to furnish on-the-job training to satisfy the approved apprenticeship program standards who agrees to employ registered apprentices in that work process. The training agent shall use only registered apprentices to perform the work processes of the approved program standards.

Training agreement: A written agreement between a training agent and a program sponsor that contains the provisions of the apprenticeship program applicable to the training agent and the duties of the training agent in providing on-the-job training.

WAC: The Washington Administrative Code.

WSATC: The Washington state apprenticeship and training council.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-003, filed 10/31/01, effective 1/17/02.]

WAC 296-05-005 Rule development. (1) In developing and adopting rules, the WSATC:

(a) Seeks the cooperation and assistance of all interested persons, organizations, and agencies affected by its rules.

(b) Promotes the operation of apprenticeship programs to satisfy the needs of employers and employees for high quality training.

(c) Recognizes that rapid economic and technological changes require that workers must be trained to meet the demands of a changing marketplace.

(d) Recognizes employers will benefit if graduates of state approved apprenticeship programs are skilled workers trained to industry wide standards rather than the exclusive standards of an individual employer or group of employers.

(e) Acknowledges that approved apprenticeship programs should be organized and administered to assure the maximum protection of apprentices' rights.

(f) 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.

(g) Promotes comprehensive training and a variety of work experiences relevant to the occupations. Seeks to assure that during the approval process all apprenticeship standards are open to all employers on an equal and nondiscriminatory basis.

(h) Recognizes that quality training, equal treatment of apprentices, and efficient delivery of apprenticeship training are best provided by registered apprenticeship programs.

(2) All amendments to this chapter must be developed and adopted according to the provisions of chapter 49.04 RCW, Apprenticeship Act; chapter 34.05 RCW, Administrative Procedure Act; and Executive Order 97-02. All proposed amendments to these rules must be approved by a two-thirds majority vote of regular WSATC members before they are published for public hearing. All WSATC members, the apprenticeship supervisor, committees and any other interested parties must be promptly notified, in writing, of any proposed rule amendments, public hearings on proposed rule amendments and new rule adoptions.

(3) The specific procedure(s) and form(s) for petitions requesting the making, amendment, or repeal of a rule are in chapter 34.05 RCW, as are the specific procedure and form for requesting declaratory rulings.

(4) Such petitions and requests must be addressed to:

The Washington State Apprenticeship and Training Council
Attention: Supervisor of Apprenticeship and Training
Department of Labor and Industries
Post Office Box 44530
Olympia, Washington 98504-4530

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-005, filed 10/31/01, effective 1/17/02.]

WAC 296-05-007 Rules of procedure. All hearings and adjudication, under chapter 49.04 RCW and these rules, shall be conducted according to chapter 34.05 RCW, the Administrative Procedure Act and chapter 10-08 WAC, Model Rules of Procedure. The chair (or vice-chair in the chair's absence) is the presiding officer for adjudicative proceedings, held before the WSATC. The WSATC may refer a matter to the office of administrative hearings for initial adjudication. When an affected person(s) files an objection in a timely manner to proposed standards or a proposed amendment of existing standards, the initial adjudication of the objection shall be referred to the office of administrative hearings.

If the initial adjudication is before the WSATC, the WSATC will enter a final order. If the initial adjudication has been held at the office of administrative hearings, the administrative hearings judge shall issue an initial order. The WSATC, upon review of the initial order shall enter the final order. An initial order shall become final without further WSATC action five working days after the next regular quarterly meeting unless:

- (1) The WSATC upon its own motion determines that the initial order should be reviewed; or
- (2) A party to the proceedings files a petition for review of the initial order.

The WSATC may appoint a person to review the initial order and prepare and enter the final WSATC order.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-007, filed 10/31/01, effective 1/17/02.]

WAC 296-05-009 Complaint review procedures. If a local committee or other organization administering the agreement cannot satisfactorily resolve a complaint, any apprentice who has completed his/her initial probationary period may submit the complaint to the apprenticeship program for resolution. Complaints that involve matters covered by a collective bargaining agreement are not subject to the complaint review procedures in this section. The investigation or review of any controversy by the supervisor or the WSATC will not affect any action taken or decision made by a committee or other organization until a final decision resolving the matter is issued.

- (1) Within thirty days of the action leading to the complaint, the apprentice must request the local committee or other organization to reconsider action.

- (2) The local committee or other organization must, within thirty days of the apprentice's request, provide written notification to the apprentice of its decision on the request for reconsideration. This notification shall be considered the final action of the committee.

- (3) If the apprentice chooses to pursue the complaint further, the apprentice must submit a written complaint describing the controversy to the supervisor of the apprenticeship division within thirty days of the final action taken on the matter by the local committee or other organization. The written complaint must be specific and include all relevant facts and circumstances contributing to the complaint. Any documents or correspondence relevant to the complaint must be attached to the complaint. The apprentice must send a copy of the complaint to the interested local committee or other organization.

- (4) The supervisor must investigate complaints received from an apprentice. The supervisor must complete the investigation within thirty working days. During the investigation, the supervisor must attempt to effect a settlement between the parties. During the investigation the apprentice and the committee or other organization must fully cooperate with the supervisor by providing any relevant information or documents requested. The supervisor may delegate the investigation to any employee in the apprenticeship division. If the controversy is not settled during the investigation, the supervisor must issue a written decision resolving the controversy when the investigation is concluded.

- (5) If the apprentice, committee or other organization is dissatisfied with the decision of the supervisor, they may request the WSATC to review the decision. The request must be in writing and made within thirty days of the supervisor's decision. It must specify the reasons supporting the request. The party requesting review must provide a copy of the request to the other parties involved in the controversy. The WSATC must conduct an informal hearing to consider the request for review of the supervisor's decision. Unless special circumstances dictate, the hearing must be held in conjunction with the regular quarterly meeting.

At the hearing, the WSATC must review the supervisor's decision and all records of the investigation. The WSATC may also accept testimony or documents from any person, including the supervisor and the supervisor's staff, who has knowledge relating to the controversy. Parties at the informal hearing may be represented by counsel and may, at the WSATC's discretion, present argument concerning the controversy. The WSATC must not apply formal rules of evidence.

- (6) Within thirty days after the hearing, the WSATC must issue a written decision resolving the controversy. The WSATC's decision may be to affirm the decision of the supervisor. In that case, the supervisor's decision becomes the decision of the WSATC. All parties to the informal hearing must be sent a copy of the WSATC's decision. The chair may sign the decision for the WSATC.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-009, filed 10/31/01, effective 1/17/02.]

WAC 296-05-011 Compliance reviews. (1) The purpose of a compliance review is to systematically and periodically review apprenticeship programs to ensure that the sponsor is complying with the approved program standards and these rules. Compliance reviews consist of a comprehensive analysis and evaluations of each aspect of the apprenticeship program. They must include on-site investigations and audits.

- (2) A compliance review may be required:

- (a) For all existing programs on a regular and comprehensive basis.

- (b) When the WSATC receives a complaint, which has not been referred to a private review body. (See WAC 296-05-009.)

- (c) When a sponsor seeks to reregister a program.

- (d) When a sponsor seeks to register a new program.

- (3) If a compliance review indicates that the sponsor is not operating as required by these rules, the supervisor must notify the sponsor in writing of the results of the review. The supervisor must:

- (a) Make a reasonable effort to secure voluntary compliance on the part of the program sponsor within a reasonable time before penalizing as authorized in WAC 296-05-013.

- (b) Provide recommendations to the sponsor to assist in achieving compliance.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-011, filed 10/31/01, effective 1/17/02.]

WAC 296-05-013 Sanctions for noncompliance. The WSATC is responsible to take the necessary action to bring a noncomplying program into compliance with these rules.

When the apprenticeship supervisor, based upon a compliance review or other reason, concludes that an apprenticeship program is not in compliance with the rules of this chapter and that the sponsor will not take voluntary corrective action, the WSATC must:

- (1) Institute proceedings to withdraw the program registration;
- (2) Refer the matter to the equal employment opportunity commission;
- (3) Refer the matter 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
- (4) Refer the matter to the attorney general for other court action as authorized by law.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-013, filed 10/31/01, effective 1/17/02.]

WAC 296-05-100 WSATC composition. (1) The director of the department appoints three voting representatives each from employer and employee organizations, respectively. Each member shall be appointed for a three-year term.

(2) The governor shall appoint, subject to confirmation by the senate, a voting public member for a three-year term.

(3) The WSATC may also include ex officio members. These members have the right to participate in the discussion of any matter before the council but they may not vote.

(4) An appointed member shall remain on the council until replaced by a qualified successor. When a vacancy does occur, it shall be filled for the remaining portion of the vacated term.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-100, filed 10/31/01, effective 1/17/02.]

WAC 296-05-103 Officers. (1) To carry out the business of the WSATC and to conduct business efficiently the WSATC has three officers:

- Chair;
- Vice-chair; and
- Secretary.

(2) The chair and vice-chair shall be elected by majority vote of the WSATC members present. This election will take place in odd-numbered years at the April regular quarterly meeting. They shall hold office for a term of two years and until the successor(s) are elected, or until death, resignation, or incapacitation. The supervisor of apprenticeship shall be the secretary of the WSATC.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-103, filed 10/31/01, effective 1/17/02.]

WAC 296-05-105 Officer duties. (1) The chair shall preside over all meetings, conducting them in accordance with *Robert's Rules of Order* as modified by these rules and regulations. The chair may vote in all matters before the WSATC as a regular member and may participate in discussion of all matters before the WSATC. The chair may also have other powers and duties that are provided in these rules; and are usual or necessary with the office of the chair; and as provided in *Robert's Rules of Order*.

[2002 WAC Supp—page 958]

(2) The vice-chair shall preside over all WSATC meetings in the absence of the chair. When presiding, the vice-chair shall have all of the powers and duties of the chair.

(3) The secretary, with the assistance of a recording secretary, must take and keep minutes of all special and regular meetings on file in the supervisor's office. The secretary must forward copies of minutes of all meetings to all regular and ex officio members of the WSATC. The secretary must also make copies of the minutes of all meetings available to the public upon written request. The secretary may also have other powers and duties that are provided in these rules or are usual or customary to the office of secretary; and as provided in *Robert's Rules of Order*.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-105, filed 10/31/01, effective 1/17/02.]

WAC 296-05-107 Additional duties for the supervisor-administrator of WSATC. (1) In addition to being the council secretary, the apprenticeship supervisor (supervisor) is the WSATC administrator. As WSATC administrator, the supervisor must:

- (a) Perform the duties listed in RCW 49.04.030;
- (b) Register all apprenticeship agreements that comply with the rules in this chapter;
- (c) Review apprenticeship programs and recommend cancellation of any committee program, or plant program previously registered which is not operated in conformity with its apprenticeship standards; and
- (d) Receive all documents concerning apprenticeship or training agreements (including revisions to) or any other matters affecting apprenticeship or training.

All written correspondence to the supervisor should be addressed to:

Supervisor of Apprenticeship and Training
Department of Labor and Industries
Apprenticeship Section
P.O. Box 44530
Olympia, Washington 98504-4530

(2) The supervisor and the supervisor's staff:

(a) May be consulted on any matters concerning apprenticeship and training and will provide on request, any information concerning apprenticeship and training available to them.

(b) Will conduct systematic reviews of the operation of all programs and investigate any discrepancies between the actual and required operations of any program. The supervisor will notify the noncompliant committee of any violation.

(c) May recommend sanctions including cancellation of a program not in compliance with its approved program standards.

(d) Assists in the resolution of any complaints against committees or other organizations administering apprenticeship agreements, which have been filed with the WSATC by apprentice(s) who have completed his/her initial probationary period.

(e) Must investigate any discrepancies of all complaints as specified in WAC 296-05-009.

(f) Conducts compliance reviews as specified in WAC 296-05-011.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-107, filed 10/31/01, effective 1/17/02.]

WAC 296-05-109 Merit awards. The WSATC may issue awards when appropriate.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-109, filed 10/31/01, effective 1/17/02.]

WAC 296-05-200 Regular meetings. (1) Each year, regular meetings of the WSATC shall be convened on the third Thursday of January, April, July, and October. These regular quarterly meetings shall be held at locations within the state of Washington. All meetings are open to the general public.

(2) Notice of each regular quarterly meeting shall be given to all:

- WSATC members;
- Ex officio members; and
- Approved program sponsors.

In addition, notices of meetings may be sent to all persons, organizations, agencies, or interested parties whose presence is desired and to any newspaper, news service, television, radio station, or other interested parties who have requested notices of WSATC meetings. The supervisor must distribute the notice of the regular meeting at least thirty days prior to the meeting date.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-200, filed 10/31/01, effective 1/17/02.]

WAC 296-05-203 Special meetings. (1) Special meetings of the WSATC may be called at the request of the chair or by a majority of the WSATC members. To call a special meeting, a written notice of the meeting must be personally delivered or mailed to:

- Each member of the WSATC;
- All approved program sponsors; and
- Each general circulation newspaper, television or radio station which has on file with the WSATC or the supervisor a written request to be notified of special meetings.

In addition, notices of meetings may be sent to all persons, organizations, agencies, or interested parties whose presence is desired.

(2) To be valid, the written notice must list the date, time and location of the meeting and specify the business to be transacted by the WSATC. The WSATC cannot take final action on any matter that is not specified in the written notice. Special meetings must be open to the general public and adhere to the same open meeting requirements that apply to the regular quarterly WSATC meetings.

(3) Notices of special meetings must be delivered personally or by mail at least twenty-four hours before the specified time of the meeting.

(4) The exception is when a special meeting is called to consider rule changes according to chapter 34.05 RCW. In this case, the notice of the special meeting must be delivered at least twenty days before the time specified in the notice.

(5) If the notice requirements in this section are not followed, any action taken by the WSATC at the special meeting will be null and void. However, the notice requirements can be waived if each regular WSATC member signs a writ-

ten waiver of notice, at or prior to the meeting, and files it with the supervisor. With this filing, the notice shall be considered waived by any WSATC member present when the meeting convenes. Rule changes may not be made at special meetings where the notice requirements have been waived unless the requirements of chapter 34.05 RCW have been satisfied.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-203, filed 10/31/01, effective 1/17/02.]

WAC 296-05-205 Petitions, requests, and correspondence submitted to the WSATC. (1) For the WSATC to act upon petitions or requests at a regular quarterly meeting, the petitions or requests must be submitted in writing to the supervisor at least forty-five days prior to the date of the regular quarterly meeting. Any petitions or requests not submitted forty-five days prior to a quarterly meeting must be deferred to the next regular quarterly meeting. If a petition or request is deferred, the supervisor must notify the petitioner.

(2) Generally, correspondence not related to apprenticeship and training agreements and meetings, petitions and requests, must be submitted in writing to the supervisor of apprenticeship at least fifteen working days before the quarterly meeting at which the WSATC's consideration is requested. However, if the WSATC determines that the correspondence is crucial to any deliberations regarding approval or disapproval of an apprenticeship agreement, the supervisor may waive this fifteen-day requirement.

(3) Noncrucial correspondence submitted less than fifteen working days before the quarterly meeting must be considered by the WSATC at the next quarterly meeting.

(4) When an apprenticeship committee petitions the council or the supervisor, only the signature of the elected chair and secretary of the committee shall be accepted as a valid signature unless the petitioning committee has asked the council to recognize and accept the signature of another person. A petition requesting the recognition of a signature other than that of the elected chair and secretary must be signed by a quorum of the members from the petitioning committee.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-205, filed 10/31/01, effective 1/17/02.]

WAC 296-05-207 Other regulations that apply to council meeting conduct. (1) All council meetings must be open to the general public. Members of the public cannot be required to register his/her name, give any information, or fulfill any condition prior to attending council meetings. All council meetings must be conducted according to the provisions of chapter 42.30 RCW, the Open Public Meetings Act and chapter 34.05 RCW, the Administrative Procedure Act. The following WSATC activities must take place in open public meetings:

- All transactions of official business;
- All commitments or promises;
- All collective discussions;
- All collective decisions; and
- All council actions.

(2) The approval or disapproval of committee programs, plant programs, or amendments to those programs can only occur at regular quarterly meetings.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-207, filed 10/31/01, effective 1/17/02.]

WAC 296-05-209 Voting. (1) A quorum is two-thirds of the WSATC members entitled to vote.

(2) All council members appointed by either the director or the governor are voting members of the council. Ex officio members may not vote on any issue.

(3) To resolve tie votes, the chair shall establish a standing tie-breaker committee. The committee shall be comprised of an employer representative, an employee representative, and the public member on the WSATC. In case of a tie vote on any proposed standards brought before the WSATC, the tie-breaker committee shall meet or confer, review the record, and render a decision 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, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-209, filed 10/31/01, effective 1/17/02.]

WAC 296-05-211 Rules of order. *Robert's Rules of Order* shall prevail at all meetings unless otherwise provided for by these rules.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-211, filed 10/31/01, effective 1/17/02.]

WAC 296-05-213 Retroactivity. The WSATC may make any action or decision which it takes retroactive to the date of the previous business session.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-213, filed 10/31/01, effective 1/17/02.]

WAC 296-05-300 Apprenticeship and training programs—Approval. The WSATC is the body responsible for matters concerning apprenticeship and training in the state of Washington. The principal function of the WSATC is to approve, register, and regulate apprenticeship and training agreements. Persons or organizations desiring to institute an apprenticeship or training program must follow these steps:

(1) Organize an apprenticeship and training committee according to WAC 296-05-303 and file affidavits with the WSATC requesting that the committee be recognized.

(2) Once the committee is recognized, it must propose standards conforming to these rules and to chapter 49.04 RCW. In addition, the standards must include the composition of the committee and general rules that it will follow in administering the program. (The apprenticeship supervisor and department apprenticeship coordinators are available to give assistance drafting standards.)

(3) These standards must be presented to the supervisor at least forty-five days before the regular quarterly meeting at which the WSATC is requested to consider such proposed standards.

(4) At the regular quarterly meeting, the proposed standards will be considered by the WSATC. The WSATC will:

(a) Approve;

(b) Approve provided the sponsor accepts the changes recommended by the WSATC; or

(c) Disapprove.

At the regular quarterly meeting, the WSATC will allow changes to correct clerical errors. The addition of standard language will be allowed if authorized representatives of the sponsor are present and authorized to accept changes. At the regular quarterly meeting, the WSATC will not accept changes to the format, language, or provisions of the submitted program standards which are not reasonably consistent with previously approved program standards.

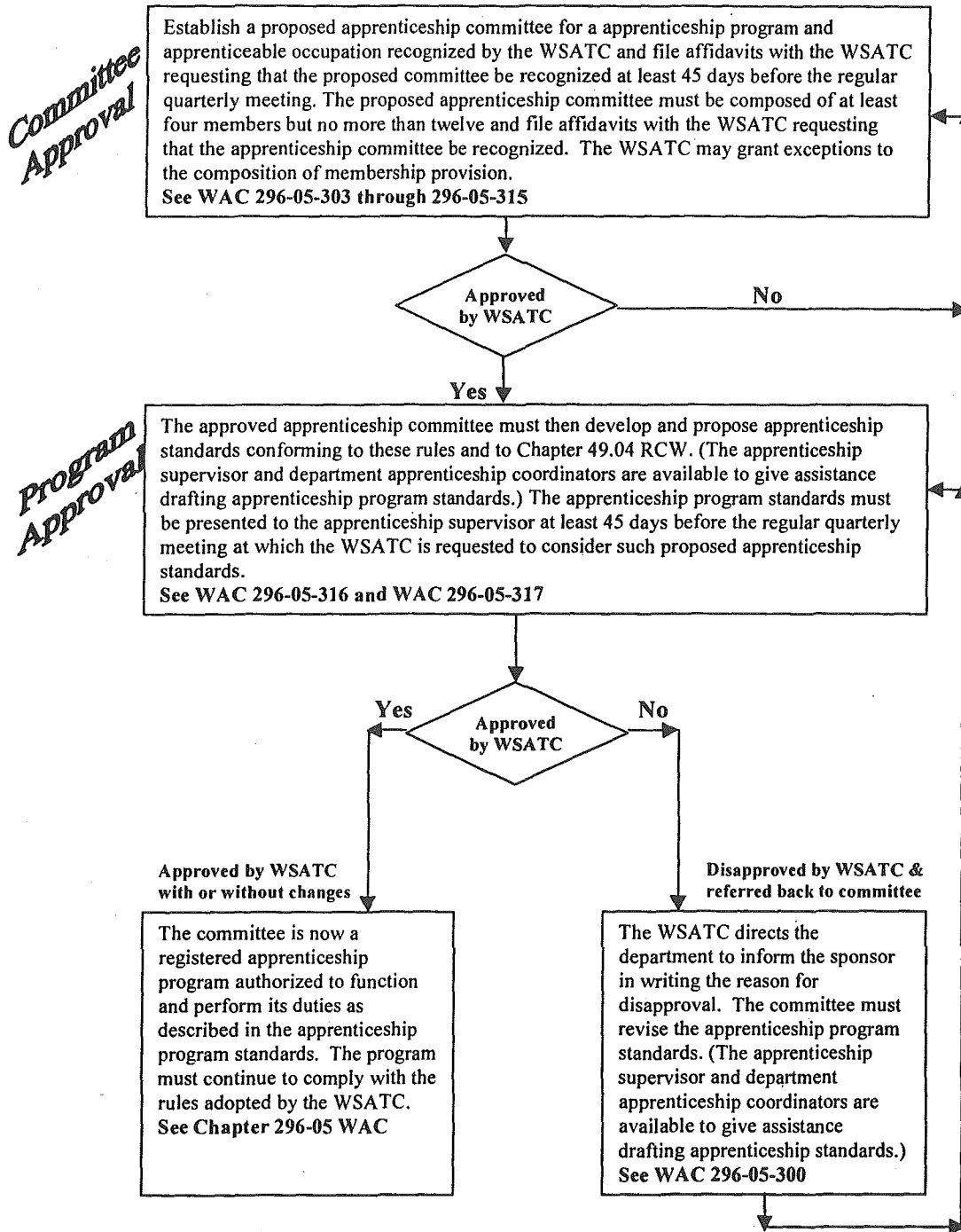
If the WSATC disapproves the standards, it shall direct the department to inform the sponsor in writing the reason for disapproval.

(5) Once the WSATC approves the program standards the committee is authorized to function and perform its duties as described in WAC 296-05-316.

(6) If a competitor objects to the proposed standards, the WSATC may either adjudicate the objections with the proposed standards or refer the objections with the proposed standards to an administrative hearing as described in WAC 296-05-007. For purposes of this subsection "competitor" means a competing apprenticeship program in a similar or subset of the trade, craft, or occupation within the geographic area served.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-300, filed 10/31/01, effective 1/17/02.]

WAC 296-05-302 Apprenticeship committee/program approval process.

Apprenticeship Committee/Program Approval Process

Note: This flowchart represents the general process for apprenticeship committee/program approval and does not include exceptions and variations.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-302, filed 10/31/01, effective 1/17/02.]

WAC 296-05-303 Apprenticeship committees—Duties and responsibilities. (1) Apprenticeship committees are appointed according to the provisions of RCW 49.04.040 and are composed of at least four members but no more than twelve. However, the WSATC may grant exceptions to this provision.

(2) Chapter 49.04 RCW, these rules, and the approved standards under which a committee operates define the duties of an apprenticeship committee. Committees shall function, administer or relinquish authority only with the consent of the WSATC.

(3) A committee is responsible for:

- The day-to-day operations of the apprenticeship and training program;
- Operating the program according to WSATC approved standards;
- Accepting or rejecting applicants for apprenticeship or training;
- Registering approved applicants with the supervisor;
- Removing apprentices from the program as provided by the approved program standards;
- Informing the supervisor of any matters that affect the standing of individuals as apprentices; and
- Entering into agreements with other apprenticeship committees for the use of apprentices by training agents that are working outside their approved geographic area served.

The WSATC will only recognize apprentices registered with the supervisor.

(4) Committees approved by the WSATC must offer training opportunities on an equal basis to all employers and apprentices including all rights, appeals, and services available in the existing apprenticeship program. All existing committees that represent multiple employer or employer associations, except for committees that represent plant programs, are expected to provide access to apprenticeship and training opportunities to employers not currently participating in the program. Those opportunities must:

- Provide training at a cost equivalent to that incurred by currently participating employers and apprentices;
- Grant equal treatment and opportunity for all apprentices;
- Offer reasonable working and training conditions and apply those conditions to all apprentices uniformly and equally;
- Not require an employer to sign a collective bargaining agreement as a condition of participation in an apprenticeship program;
- Require all employers requesting "approved training agent" status to comply with an WSATC approved agreement and all federal and state apprenticeship rules and the appropriate apprenticeship standards. (The training agent shall employ only registered apprentices when training for that occupation or trade);
- Require sponsors, who approve "approved training agent" agreements, to furnish the department with a copy of the agreement and/or the list of approved training agents within thirty days of committee approval; and
- Require sponsors who rescind "approved training agent" agreements and/or the list of approved training agents

to notify the department that they have done so within thirty days of said action.

(5) If an existing committee fails to or refuses to offer apprenticeship and training opportunities to all employers, the WSATC may take action to remove the restrictions to access in order to comply with the intent of chapter 49.04 RCW and these rules. Action may include, but is not limited to, the decertification of the existing committee and recognition of a new committee.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-303, filed 10/31/01, effective 1/17/02.]

WAC 296-05-305 Apprenticeable occupations. An apprenticeable occupation is a skilled trade which possesses all of the following characteristics:

- (1) It is customarily learned in a practical way through related instruction and on-the-job supervised training.
- (2) It is clearly identified and commonly recognized throughout an industry.
- (3) It is not part of an occupation previously recognized by the registering agency as apprenticeable, unless such part is practiced industry wide as an identifiable and distinct trade.
- (4) It involves manual, mechanical, or technical skills and knowledge which require a minimum of two thousand hours of on-the-job work experience.
- (5) It requires a minimum of one hundred forty-four hours of related instruction per year to supplement on-the-job work experience.

(6) It involves skill sufficient to establish normal career sustaining employment for the length of the apprentice's work life. It entails technical and theoretical considerations which are susceptible to instruction within the period defined in the program standards.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-305, filed 10/31/01, effective 1/17/02.]

WAC 296-05-307 Types of apprenticeship agreements recognized by the WSATC. The WSATC acting according to RCW 49.04.060, recognizes the following types of written apprenticeship agreements (statements) that describe the apprenticeship training conditions:

- (1) Agreements between an association of employers and an organization of employees.
- (2) An agreement between an employer and an employee organization.
- (3) An employer's statement when there is no bona fide employee organization in the plant affected by the agreement.
- (4) An agreement between an apprenticeship program and an individual apprentice.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-307, filed 10/31/01, effective 1/17/02.]

WAC 296-05-309 Apprenticeship programs approved by the WSATC. The following apprenticeship programs may be approved by the WSATC. All the following programs with the exception of individual waiver programs must be administered by a committee.

- (1) Group-joint, or area joint. A program where there is a labor organization. These programs are jointly sponsored by

a group of employers and a labor organization. They are administered by employer and employee representatives from an apprenticeship and training committee composed equally from management and labor.

(2) Individual-joint. A program where there is a labor organization. These programs are jointly sponsored by an individual employer and a labor organization. They are administered by employer and employee representatives from an apprenticeship and training committee composed equally from management and labor.

(3) Group nonjoint, or area group. A program where there is no labor organization. These programs are sponsored by an employer association(s) administered by an apprenticeship committee.

(4) Individual nonjoint. A program where there is no labor organization. These programs are sponsored and administered by an individual employer.

(5) Group waiver. These programs involve an employer association(s) and a labor organization. Either the employer group or the labor organization voluntarily waives participation in the program by notifying the other party in writing.

(6) Individual waiver. These programs involve an individual person, company, plant, firm, and a labor organization. Either management or labor voluntarily waives participation by notifying the other party in writing.

(7) Plant. A program for a single physical location or a group of physical locations owned by the sponsor. The WSATC, based on the authority in RCW 49.04.040, assumes jurisdiction and serves as the committee. The apprenticeship agreement must specify the number of required hours for completion of the apprenticeship. The hours specified must represent at least two thousand hours of reasonably continuous employment. That agreement must conform to the applicable provisions of chapter 49.04 RCW and these rules.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-309, filed 10/31/01, effective 1/17/02.]

WAC 296-05-311 On-the-job training programs. On-the-job training programs may be set up in the same manner as apprenticeship programs with any exceptions authorized by the WSATC. However, no on-the-job training program must be established or authorized where there is a parallel apprenticeship program in existence. An on-the-job training program shall be any program that requires two thousand or less hours of employment for completion. All of the rules in this chapter that apply to apprenticeship agreements and programs also apply to on-the-job training programs except on-the-job training programs will be approved by the supervisor subject to the review of the WSATC.

A sample standard for an on-the-job training program is available from the supervisor.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-311, filed 10/31/01, effective 1/17/02.]

WAC 296-05-313 Apprenticeship committees—Composition. (1) Apprenticeship committees must be composed of an equal number of management and nonmanagement representatives.

(2) For apprenticeship committees that represent one occupation, at least fifty percent of the members of committees

must be occupationally qualified by education and experience in the specific occupation for which the committee is responsible. The committee must be able to verify the occupational qualifications of the members.

(3) For apprenticeship committees that represent multiple occupations, the committee members must either:

- Be occupationally qualified by education and experience in the specific occupations for which the committee is responsible and must be able to verify the occupational qualifications of the members; or

- Be known to represent the interests of the multiple occupations served.

(4) All committee members must be knowledgeable in the process of apprenticeship and/or the application of chapter 49.04 RCW and these rules.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-313, filed 10/31/01, effective 1/17/02.]

WAC 296-05-315 Nonjoint and waiver committees—Additional requirements. (1) The WSATC shall only recognize nonjoint and waiver standards for a specific occupation or directly related occupations.

(2) When multiple related occupations are approved on a single standard, each occupation shall be considered as an individual standard.

(3) Unrelated occupations shall be submitted under separate standards.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-315, filed 10/31/01, effective 1/17/02.]

WAC 296-05-316 Apprenticeship agreements—Standards requirements. The WSATC shall have the authority to develop, administer, and enforce program standards for the operation and success of an apprenticeship and training program.

The sponsor's proposed program standards must include a list of duties and responsibilities of the program sponsor reasonably consistent with other approved program standards.

All apprenticeship agreements must comply with the approved program standards, chapter 49.04 RCW, and these rules. The standards of apprenticeship agreements must include the following:

(1) A statement of the trade or craft to be taught and the required hours for completion of apprenticeship which must not be less than two thousand hours of reasonably continuous employment.

(2) A statement identifying the program sponsor, establishing the apprenticeship committee and enumerating the sponsor's and committee's duties and responsibilities. This statement must include provisions to:

(a) Elect a chair and a secretary from employer and employee representatives of the committee.

EXCEPTION: This provision is not necessary for a plant program.

(b) Convene at least three annual regular meetings of the program sponsor and apprenticeship committee. The meetings shall be at least three times per year, be attended by a quorum of committee members (as defined in the approved program standards), be documented with minutes which must

be periodically submitted to the department and made available to the WSATC upon request. Conference call meetings may be conducted in lieu of regular meetings but must not exceed the number of attended meetings and no disciplinary action shall be taken at conference call meetings.

(c) Determine need for apprentices in the area covered by the apprenticeship standards established under these rules. (Statistical analysis of workload projections, demographics, and information relating to expected workload growth are examples of ways the sponsor may demonstrate that the need for apprentices exists.)

(d) Establish minimum standards of education and skilled occupational experience required of apprentices.

(e) Rotate apprentices in the various processes of the skilled occupation to assure a well-rounded, competent worker.

(f) Determine the adequacy of an employer to furnish proper on-the-job training in accordance with the provisions of the approved standards.

EXCEPTION: This does not apply to plant programs.

(g) Recommend competent instructors and related/supplemental instruction in accordance with local vocational requirements.

(h) Recommend a course outline for related/supplemental instruction, as well as coordinate related/supplemental instruction with on-the-job work experience.

(i) Hear and adjust all complaints of violations of apprenticeship agreements.

(j) Adopt, as necessary, program rules to administer the apprenticeship program in compliance with its standards, chapter 49.04 RCW, and these rules.

(k) Periodically review and evaluate apprentices before advancement to the apprentice's next wage progression period.

(l) Maintain apprenticeship records and records of the administrative program as may be required by the WSATC, chapter 49.04 RCW, and these rules. (See WAC 296-05-318.)

(3) The following Equal Employment Opportunity Pledge:

"The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, sex, color, religion, national origin, age, disability or as otherwise specified by law. The sponsor shall take positive 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."

(4) When applicable, an affirmative action plan and selection procedures.

(5) A numeric ratio of apprentices to journey-level workers may not exceed one apprentice per journey-level worker. It must be consistent with proper supervision, training, safety, continuity of employment, and applicable provisions in collective bargaining agreement, if any. The ratio must be described in the program standards and shall be specific and clear as to application in terms of job site, work group, department, or plant. An exception to this requirement may be granted by the WSATC.

(6) A statement of the related/supplemental instruction including content, format, hours of study per year (which shall be a minimum of one hundred forty-four hours per year).

(7) An attendance policy which includes a provision that if the apprentice fails to fulfill the related/supplemental instruction obligations, the sponsor may withhold the apprentice's periodic wage advancement, suspend or cancel the apprenticeship agreement. A provision that time spent in related/supplemental instruction classes shall not be considered as hours of work and the apprentice is not paid for the classroom time. A provision that the hours of actual attendance by the apprentice in related supplemental instruction classes must be reported to the department on a quarterly basis for industrial insurance purposes.

(8) A provision to ensure that the sponsor provides for instruction of the apprentice during the apprentice's related/supplemental instruction in safe and healthful work practices in compliance with the Washington Industrial Safety and Health Act, and applicable federal and state regulations. Also, the sponsor must ensure that the employer provides the necessary instruction in safe and healthful work practices in compliance with the Washington Industrial Safety and Health Act, and applicable federal and state regulations to the apprentice for the on-the-job training portion of the apprenticeship.

(9) A provision for a formal agreement between the apprentice and the sponsor and for registering that agreement with the department.

(10) A provision for the timely notice to the department of all requests for disposition or modification of apprenticeship agreements including:

- Certificate of completion;
- Additional credit;
- Suspension;
- Military service;
- Reinstatement;
- Cancellation; and
- Corrections.

(11) A provision for advancing an apprentice's standing based on previous experience in the skilled trade or in some other related capacity.

(12) A provision for the transfer of an apprentice from one training agent to another training agent or the sponsor in order to provide as much as possible, continuous employment and diversity of training experiences for apprentices.

(13) A provision for the amendment of the standards or deregistration of the program. This provision must comply with chapter 49.04 RCW, these rules, and WSATC policies and procedures.

(14) An apprenticeship appeal procedure in compliance with chapters 49.04, 34.05 RCW, and these rules.

(15) A statement of the processes in the trade or craft divisions in which the apprentice is to be taught and the approximate amount of time to be spent at each process.

(16) A statement of the number of hours to be spent by the apprentice in work and the number of hours to be spent in related/supplemental instruction which instruction shall be not less than one hundred forty-four hours per year.

(17) A statement of the minimum qualifications for persons entering the apprenticeship program including the age of the apprentice which may not be less than sixteen years of age. All exceptions to minimum qualifications, if any, must be clearly stated and applied in a nondiscriminatory manner.

(18) Provision that the services of the supervisor and the WSATC may be utilized for consultation regarding the settlement of differences arising out of the apprenticeship agreement where such differences cannot be adjusted locally or as required by the established trade procedure.

(19) Provision that if an individual training agent is unable to fulfill its obligation under the apprenticeship agreement, it will transfer the obligation to the program sponsor.

(20) Such additional standards as may be prescribed in accordance with the provisions of this chapter.

(21) Disciplinary procedures and criteria for apprentices. The procedures may include a committee-imposed disciplinary probation during which the committee may according to expressed criteria:

- Withhold periodic wage advancements;
- Suspend or cancel the apprenticeship agreement;
- Take further disciplinary action; or
- The disciplinary procedures must include a notice to the apprentice that the apprentice has the right to file an appeal, of the committee's action, to the WSATC.

(22) A provision for an initial probation which the WSATC or the supervisor of apprenticeship may terminate an apprenticeship agreement at the written request by any affected party. The initial probation must not exceed twenty percent of the term of apprenticeship unless an exemption has been granted for longer probationary periods as specified by Civil Service or law. The initial probationary period must be expressed in hours of employment. During the initial probationary period, the apprenticeship agreement may be terminated by the sponsor or the apprentice without a hearing or stated cause. An appeal process is available to apprentices who have completed the initial probationary period.

(23) Provisions prohibiting discrimination on the race, sex, color, religion, national origin, age, disability or as otherwise specified by law during all phases of apprenticeship.

(24) Provisions to ensure adequate records of the selection process are kept for a period of at least five years and are available to the WSATC or its representative on request. ("Adequate records" means at least 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.)

(25) Provisions to ensure that local committee rules and regulations be consistent with these rules and the applicable apprenticeship agreement.

(26) Provisions to ensure any proposed standards for apprenticeship are reasonably consistent with any standards for apprenticeship already approved by the WSATC for the industry, craft or trade in question taking into account the WSATC's determination of the apprenticeship needs of the trade and geographic area. (Statistical analysis of workload projections, demographics, and information relating to expected workload growth are examples of ways the sponsor may demonstrate that the need for apprentices exists.) The goal is to achieve general statewide uniformity of standards

in each industry, trade or craft. Proposed standards for a new program shall be considered consistent if they are equal to or exceed the minimum number of hours approved by the United States Department of Labor for a trade, craft, or occupation. If the United States Department of Labor has not established a minimum number of hours for a trade, craft, or occupation, the WSATC may utilize its discretion to determine the minimum number of hours that must be achieved. In addition, the course content and delivery method must be designed to achieve the same levels of skills as existing standards within the state for that industry, trade, or craft.

(27) A provision to ensure that the progressively increasing wage scales based on specified percentages of journey-level wage, which must be submitted, at least annually, to the WSATC. These may be submitted on a form provided by the department.

A sample apprenticeship agreement and a standard form for program standards are available from the supervisor.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-316, filed 10/31/01, effective 1/17/02.]

WAC 296-05-317 Related/supplemental instruction.

The WSATC shall establish apprentice-related/supplemental instruction for trades and occupations based on recommendations from the state board for community and technical colleges.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-317, filed 10/31/01, effective 1/17/02.]

WAC 296-05-318 Records required by the WSATC.

Each sponsor must keep adequate records including, but not limited to, the following:

- (1) Selection of applicants:
 - (a) A summary of the qualifications of each applicant;
 - (b) The basis for evaluation and for selection or rejection of each applicant;
 - (c) The records pertaining to the interviews of applicants; and
 - (d) The original application for each applicant.
- (2) Operation of the apprenticeship program:
 - (a) On-the-job training assignments;
 - (b) Promotion, demotion, layoff, or termination;
 - (c) Rates of pay or other forms of compensation or conditions of work;
 - (d) Hours of training provided; and
 - (e) Any other records needed by WSATC to determine compliance with these rules.
- (3) Affirmative action plans:
 - (a) A copy of the program's complete affirmative action plan. All data and analysis made to determine enrollment deficiencies;
 - (b) Evidence that affirmative action plans are reviewed on an annual basis; and
 - (c) Evidence that affirmative action plans, goals and timetables are updated when necessary.
- (4) Documentation necessary to establish a sponsor's good faith effort in implementing its affirmative action plan:
 - (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.

(5) Qualification standards: Evidence that the sponsor's qualification standards meet the requirements of WAC 296-05-316.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-318, filed 10/31/01, effective 1/17/02.]

WAC 296-05-319 Apprenticeship agreement—Individual registration. All individual agreements are subject to the approval of the supervisor and must be registered with the supervisor.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-319, filed 10/31/01, effective 1/17/02.]

WAC 296-05-321 Apprenticeship agreement—Cancellation. The supervisor may recommend that an agreement and program be canceled when a program does not comply with these rules or the program's standards. The procedures for cancellation are as follows:

(1) When any program is found to be operating inconsistently or contrary to these rules or its established program standards, the supervisor must notify the offending committee, person, firm or agency of the violation(s).

(2) The offending committee, firm, or agency has sixty days to correct the violation(s).

(3) If the supervisor does not receive notice, within sixty days, that action has been taken to correct the violations, the supervisor may recommend cancellation of the apprenticeship or training program and agreement to the WSATC.

(4) A recommendation to cancel a program must be in writing, addressed to each WSATC member, and detail the reasons for the recommendation.

(5) A copy of the recommendation, along with a notice that the WSATC will consider the recommendation, must be mailed to the last known address of each member of the committee administering said program, or to those persons responsible for the program.

(6) The WSATC must consider the recommendation at its next regularly scheduled quarterly meeting. However, at least thirty days must pass between the date of the recommendation and the date of the regular quarterly meeting. If thirty days has not passed, the recommendation must be considered at the subsequent regular quarterly meeting.

(7) At the regular quarterly meeting, all interested person(s) may present evidence or testimony regarding the recommendation.

(8) The WSATC must act on the recommendation by a majority vote of the members present and voting.

(9) Once the WSATC has voted, it must give written notification of its decision to all interested parties along with the reasons supporting it.

(10) The cancellation of any program or agreement automatically cancels any agreement(s) registered under them. However, any organization or firm not responsible for the violations that caused the cancellation may petition the WSATC for approval of the canceled agreement or program as a new program.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-321, filed 10/31/01, effective 1/17/02.]

WAC 296-05-323 Certificate of completion. At the request of the apprenticeship committee, the WSATC shall issue certificates of completion. An affidavit of the secretary, chair, or authorized official of the committee concerned must accompany the request. The affidavit must state that the apprentice has been an active, registered participant of that committee's program for at least six months and has successfully completed his/her apprenticeship. These may be submitted on a form provided by the department.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-323, filed 10/31/01, effective 1/17/02.]

WAC 296-05-325 Union waiver. (1) When apprenticeship programs allowing for the substantive union participation are proposed for registration by an employer or employers' association and the union does participate, the proposal must be accompanied by a written statement from the union supporting the registration. Such a statement is referred to as a "no objection" statement.

(2) When there is no evidence of any union participation, the employer or employers' association must simultaneously furnish to the union that serves as the collective bargaining agent of the employees to be trained, copies of the registration application and the apprenticeship program. Before taking a final action on the application, the supervisor must give the union a reasonable time period to respond. (A "reasonable time" shall be at least thirty days but no more than sixty days.) If the union fails to comment within the allotted time period, it will have waived its right to participate in the program.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-325, filed 10/31/01, effective 1/17/02.]

WAC 296-05-327 Reciprocity. Reciprocity means that the WSATC will recognize and approve out-of-state apprenticeship programs and standards of employers and unions in other than the building and construction industry if certain conditions are met and the out-of-state sponsoring entity requests it. To qualify for reciprocity, the out-of-state sponsoring employers and unions must:

(1) Jointly form a sponsoring entity on a multistate basis; and

(2) Register with any recognized state apprenticeship agency/council or with the United States Department of Labor, Apprenticeship Training and Employer Labor Services according to the requirements of 29 CFR Part 29, as adopted February 15, 1977.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-327, filed 10/31/01, effective 1/17/02.]

WAC 296-05-400 Equal employment opportunity plan—Purpose, scope and authority. The WSATC's affirmative action plan is based on the statutory authority granted in chapter 49.04 RCW and according to the provisions of 29 CFR Part 30. The purpose of the affirmative action plan is to promote equality of opportunity in apprenticeship by:

- Prohibiting discrimination in apprenticeship programs based on race, sex, color, religion, national origin, age disability or as otherwise specified by law;

- Requiring equal employment opportunities in apprenticeship programs through affirmative action; and
- Coordinating the WSATC's equal employment opportunity programs with affirmative action policies and procedures with other equal opportunity programs.

The following sections contain the policies and procedures to promote equality of opportunity and equity of treatment of apprentices in apprenticeship programs approved by the WSATC. These policies and procedures are to be used to:

- Recruit and select apprentices;
- Review and revise apprenticeship programs;
- Process equal employment opportunity complaints;
- Take corrective action when appropriate;
- Deregister noncomplying apprenticeship programs;

and

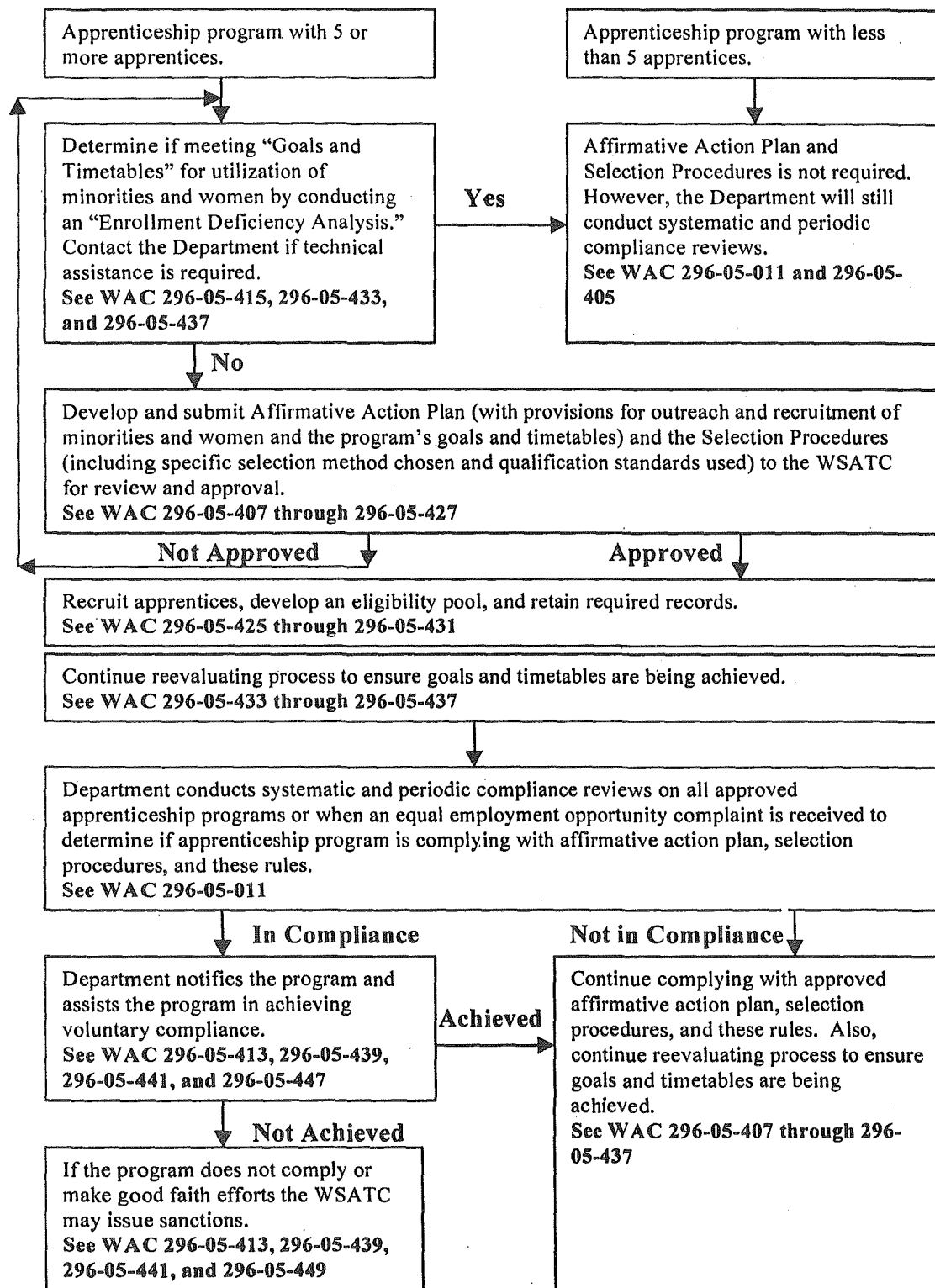
- Continue recognition or withdraw recognition of apprenticeship programs.

An affirmative action program must not be used to discriminate against any qualified applicant or apprentice on the basis of race, sex, color, religion, national origin, age, disability or as otherwise specified by law.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-400, filed 10/31/01, effective 1/17/02.]

WAC 296-05-402 Equal employment opportunity process.

Equal Employment Opportunity Process



WAC 296-05-403 Definitions for Part D. The following definitions are to be used with this part.

Underutilization: Enrolling minorities and women in a ratio not proportionate to the participation of minorities and women that is representative of the geographical region served.

Women or female: As used in Part D of this chapter refers to minority women and nonminority women.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-403, filed 10/31/01, effective 1/17/02.]

WAC 296-05-405 Exceptions to the requirement for adopting an affirmative action plan and a selection procedure. (1) A sponsor is not required to adopt an affirmative action plan or a selection procedure if:

- (a) It has fewer than five apprentices; or
- (b) The program is determined by the WSATC to be in compliance with an approved equal employment opportunity program. An approved program is one which:
 - (i) Provides for selection of apprentices;
 - (ii) Provides for affirmative action in apprenticeship;
 - (iii) Includes goals and timetables for participation of minorities and women in the labor force in apprenticeship which meet or exceed the requirements of WAC 296-05-415; and
 - (iv) Meets the requirements of the following laws:
 - Title VII of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000, et seq.);
 - The regulations implementing 42 U.S.C. 2000, et seq.;
 - Executive Order 11246 as amended; and
 - The regulations (41 CFR Part 60) implementing Executive Order 11246.

(2) A program sponsor must submit satisfactory evidence of its qualification for the exception to the WSATC. If the program sponsor designed the apprenticeship program or the equal opportunity program to circumvent the requirements of these rules, the program will not qualify for an exception.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-405, filed 10/31/01, effective 1/17/02.]

WAC 296-05-407 Apprenticeship program sponsor's obligations. (1) A sponsor of an approved apprenticeship program must:

- (a) Promote equal opportunity in its apprenticeship program; and
- (b) Recruit, select, employ and train apprentices without discrimination based on race, sex, color, religion, national origin, age, disability or as otherwise specified by law.

(2) A sponsor of an approved apprenticeship program with five or more apprentices must uniformly apply all rules related to apprentices. Such rules include, but are 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.

(3) Adopt and implement an affirmative action plan and selection procedure as required by chapter 49.04 RCW, 29 CFR Part 30, and these rules unless the approved apprenticeship program qualifies for an exception (see WAC 296-05-405).

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-407, filed 10/31/01, effective 1/17/02.]

WAC 296-05-409 Affirmative action information required by WSATC. In addition to the program standards required by WAC 296-05-316, program sponsors seeking new program registration and approval by the WSATC must submit the following:

- (1) The proposed affirmative action plan;
- (2) The proposed selection procedures; and
- (3) Any other information about the sponsor's equal employment opportunity plan required by the WSATC.

The affirmative action plan and additional information is considered in conjunction with the program standards in the WSATC's decision whether to approve or disapprove an apprenticeship program. If the WSATC disapproves the apprenticeship program, it shall direct the department to inform the sponsor in writing the reason for disapproval.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-409, filed 10/31/01, effective 1/17/02.]

WAC 296-05-411 Affirmative action plan. An approved affirmative action plan must:

- (1) Be in writing.
- (2) Be more than passive nondiscrimination.
- (3) Include procedures, methods and programs to:
 - (a) Clearly identify present and potential minority and female apprentices.
 - (b) Establish affirmative action goals and timetables.
 - (c) Equalize opportunity in apprenticeship to allow full utilization of the work potential of minorities and women.
 - (d) Assure equal opportunity in apprenticeship for all individuals participating in or seeking entrance into Washington's labor force.

(4) Include provisions for outreach and positive recruitment to increase the participation of minorities and women in apprenticeship programs by expanding and promoting apprenticeship opportunities to minorities and women. (See WAC 296-05-413.)

Nothing in a sponsor's approved affirmative action plan may be used to discriminate against any qualified applicant or apprentice on the basis of race, sex, color, religion, national origin, age, disability or as otherwise specified by law.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-411, filed 10/31/01, effective 1/17/02.]

WAC 296-05-413 Outreach and recruitment requirements—Specific. To gain approval, an affirmative action plan must include the following specific provisions for outreach and recruitment criteria:

(1) To increase minority and female participation in apprenticeship, program sponsors are expected to strengthen program outreach and recruitment efforts. The affirmative action plan must specify the activities they will use to achieve this result.

(2) The program sponsor is not necessarily required to include all of the listed activities in its affirmative action program. The WSATC, when approving the sponsor's affirmative action plan, will determine the number of specific activities a sponsor must implement to satisfy this outreach and recruitment requirement. The WSATC will consider all circumstances including the size and type of the program and its resources. When special circumstances exist, the WSATC may provide financial or other assistance it deems necessary to implement the requirements of this section from any funds made available to it for such purpose.

(3) Examples of positive outreach and recruitment activities are:

(a) Distributing information about the nature of apprenticeship programs, program admission requirements, current apprenticeship opportunities, sources of apprenticeship applications, and the equal opportunity policy of the sponsor.

For programs only accepting applications at specific intervals, such information shall be disseminated at least thirty days in advance of each application date. For programs that accept applications throughout the year, this information must be distributed at least semiannually.

To be effective, the information described in this section must be given to the WSATC, local schools, employment service offices, women's centers, outreach programs and community organizations which effectively reach minorities and women. Also it must 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) Participating in workshops conducted by employment service agencies, school districts, and community based organizations to increase apprenticeship program awareness of apprenticeship opportunities.

(c) Cooperating with local school districts, vocational education systems, and school employees to develop programs for preparing students to meet the standards and criteria required to qualify for entry into apprenticeship programs.

(d) Increasing awareness of a sponsor's equal opportunity policy within the sponsor's organization. The goal of this increased awareness within the sponsor's organization is to foster understanding, acceptance, and support among the sponsor's various officers, supervisors, employees, employers, and members. This is to encourage the necessary active assistance in achieving the program's obligations required by these rules.

(e) Participating in existing outreach programs whose focus is the recruitment and preparation of minority and female apprenticeship applicants. Whenever possible, these should provide applicants with pretesting experience and training.

(f) Developing outreach programs whose focus is the recruitment and preparation of minority and female apprenticeship applicants. If apprenticeship outreach programs do not exist, the sponsor should attempt to develop them. This

effort may require working with other sponsors and appropriate community organizations. It may require obtaining financial assistance from the WSATC. Also, the sponsor shall initiate programs that prepare and encourage women to enter traditionally male dominated apprenticeship programs and trades.

(g) Encouraging the development and use of programs for preapprenticeship education, preparatory trade training, or other work related experiences that prepare candidates for apprenticeship.

(h) Granting to all applicants, without prejudice, advance standing or credit for previously acquired experience, training, skills, or aptitude.

(i) Engaging in other activities to ensure that the recruitment, selection, employment, and training of apprentices without discrimination based upon race, color, religion, national origin, sex, age, disability or as otherwise specified by law. Some examples of these activities include:

(i) General publication of advertisements, industry reports, articles on apprenticeship opportunities and advantages.

(ii) Use minority and female apprentices and journey-level workers as recruiters.

(iii) Provide career counseling to prospective applicants.

(iv) Periodically audit affirmative action programs to see if goals are being met.

(v) Develop monitoring procedures to ensure that employers are granting equal employment opportunities to apprentices (these procedures may include reporting systems, on-site reviews, or briefing sessions).

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-413, filed 10/31/01, effective 1/17/02.]

WAC 296-05-415 Affirmative action goals and timetables. (1) An affirmative action plan must include goals and timetables. The first step in deciding whether goals and timetables are necessary is the completion of an analysis of the sponsor's program to determine whether there is an underutilization of minorities and/or women in the trade(s) represented by the program. This analysis must be:

(a) Conducted by the sponsor with technical assistance provided by the department;

(b) In writing; and

(c) Included in the sponsor's affirmative action plan.

(2) If the sponsor's analysis demonstrates that minorities and females are underutilized in the program, the program has an enrollment deficiency that must be corrected. Enrollment goals and timetables to correct this deficiency must be established and they must be included in the sponsor's affirmative action plan. (See WAC 296-05-433.)

(3) If the sponsor's analysis demonstrates that no enrollment deficiencies exist, enrollment goals and timetables are not required. However, where no goals and timetables are established, the affirmative action plan must include a detailed explanation why no goals and timetables have been established.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-415, filed 10/31/01, effective 1/17/02.]

WAC 296-05-417 Selection of apprentices for approved apprenticeship programs. In addition to development of a written affirmative action plan, the sponsor must submit a written plan for the selection of apprentices. The selection plan must ensure that minorities and women have an equal opportunity to be selected as apprentices and that full utilization and equal opportunity in apprenticeship is achieved promptly. The selection procedures must use one of the methods specified in this section.

(1) A sponsor may not implement any selection method until the WSATC approves the program's affirmative action plan. In the affirmative action plan, the sponsor must identify the approved selection method it has adopted. The WSATC allows the following selection methods to be used:

(a) **Selection on basis of rank from pool of eligible applicants.** With this method, a sponsor selects apprentices from a pool of eligible applicants based upon a rank ordering of applicant qualifying standard scores. A sponsor adopting this method must create a pool of eligible candidates who have either reached the minimum legal working age and meet the sponsor's minimum physical requirements or who have reached the minimum legal working age and meet the sponsor's qualification standards.

(b) **Random selection from pool of eligible applicants.** A pool of eligible applicants must be created from persons who have either reached the minimum legal working age and meet the sponsor's minimum physical requirements or who have reached the minimum legal working age and meet the sponsor's qualification standards. With WSATC approval, a sponsor may randomly select apprentices from a pool of eligible applicants. This method must be supervised by an impartial person(s) not associated with the administration of the apprenticeship program. The time and place of the selection, and the number of apprentices to be selected, must be publicly announced before the selection takes place. The selection process must 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.

(c) **Selection from pool of current employees.** A sponsor may select apprentices from an eligibility pool of program employees. The actual selection process may be prescribed by a collective bargaining agreement where one exists, or by the sponsor's established promotion policy.

(d) **Alternative selection methods.** In addition to the above specified methods, the WSATC allows a sponsor to select apprentices by alternative methods, including its present selection method. However, the sponsor who adopts an alternative method of selection must submit the following information to the apprenticeship supervisor:

- (i) A detailed discussion of the selection method it proposes to use;
- (ii) A copy of its affirmative action plan;
- (iii) A copy of its enrollment deficiency analysis; and
- (iv) If necessary, its goals and timetables for increasing the number of minority and female applicants and apprentices in the program.

The sponsor may not implement any such alternative method until the WSATC has approved the method and the

affirmative action program (including its goals and timetables).

When an alternative selection method is used and the training agent selects the apprentices, the employer must sign an agreement with the WSATC, agreeing to comply with the equal employment opportunity requirements of these rules and 29 CFR Part 30.

(2) Exceptions to selection procedures may be used if:

(a) An employee of an employer not qualifying as a journey-level worker becomes a training agent, he/she shall be evaluated by the apprenticeship program using constant standard nondiscriminatory means and registered at the appropriate period of apprenticeship based on previous work experience and related training.

(b) The individual who signs an authorization card during the organizing effort by an employer wherein fifty percent or more of the employees have signed whether or not the individual is approved as a training agent, an individual not qualifying as a journey-level worker shall be evaluated by the sponsor and registered at the appropriate period of apprenticeship based on previous work experience and related training.

(3) Organizing statements specified in subsection (2) of this section, that result in direct entry into the apprenticeship program, shall be properly placed within the program selection procedure as an exemption.

(4) If the WSATC or the department fails to act upon the sponsor's selection method and affirmative action program within thirty days of its submission to the department, the sponsor may implement the selection method until acted upon by the WSATC.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-417, filed 10/31/01, effective 1/17/02.]

WAC 296-05-419 Qualification standards. Qualification standards are the criteria, used by sponsors to select applicants into an eligibility pool. These qualification standards and the procedures used to determine the standards must be specified in detail in the sponsor's affirmative action plan and must:

- Identify the specific criteria and attributes used to evaluate applicants;
- Specify the acceptable scores required for each qualification standard;
- Demonstrate a direct relationship between each qualification standard, its required score and the expected job performance;
- Establish a significant statistical relationship between the score required for admission to the pool and the applicant's performance in the apprenticeship program. This statistical relationship must be based upon the procedures discussed in 41 CFR Part 60-3 (Guidelines on employee selection procedures); and
- Specify that the applicant has achieved an acceptable score on all the qualification. Unless an applicant achieves an acceptable score on all the qualification standards, the applicant will be ineligible for admission to the pool.

(1) **Aptitude test scores for use as qualification standards.** Aptitude tests may be used as qualification standards; however, any aptitude test score used as a qualification stan-

dard must be directly related to apprenticeship job performance. To demonstrate this relationship, there must be a significant statistical relationship between the aptitude test scores required for admission to the pool and performance in the apprenticeship program. In determining this relationship, the sponsor must follow the procedures discussed in 41 CFR Part 60-3. These requirements also apply to any aptitude tests used by a program sponsor and administered either by a state employment agency or any person, agency or organization engaged in the selection or evaluation of personnel. If a national aptitude test is developed and administered by a national apprenticeship committee, it must meet these requirements before it will be approved by the United States Department of Labor.

(2) **Educational achievements for use as qualification standards.** Educational achievements can be used as qualification standards; however, all such achievements used to determine admission to a program pool must be directly related to apprenticeship job performance. This direct relationship must be demonstrated by a significant statistical relationship between the achievement scores required for admission and expected performance in the apprenticeship program. In demonstrating such a statistical relationship, the sponsor must meet the requirements of 41 CFR Part 60-3.

Official school records or a certified passing grade on a general educational development (GED) test recognized by state or local public instruction officials shall be evidence of educational achievement. These education achievement requirements must be uniformly applied to all applicants.

(3) **Role of the interview in the applicant selection process.** Interviews must not be used as a qualification standard for admission to an eligibility pool for programs using the selection methods described in WAC 296-05-417 (1) and (2). However, after an applicant is placed in a pool and before selections are made from that pool, an applicant can be interviewed. When interviews are conducted, they must:

- (a) Consist only of objective questions relevant to the applicant's fitness for the apprenticeship program.
- (b) Not include questions related to qualifications previously used to determine entrance to the pool.
- (c) Require each interviewer to record the questions and the general nature of the applicant's answers.
- (d) Require each interviewer to prepare a summary of any interview conclusions.

Adequate records of the interviews must be kept including a brief summary and conclusion and how the specific factors like applicant motivation, ambition, and willingness to accept direction affected the interviewer's final decision.

(4) **Examples of qualification standards include:**

- Standardized aptitude tests;
- School diplomas or the equivalent;
- Health requirements essential to the chosen occupation;
- Interviews conducted in a fair manner (see subsection (3) of this section);
- School grades; and
- Previous work experience.

In applying these standards, the sponsor must meet the requirements of 41 CFR Part 60-3.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-419, filed 10/31/01, effective 1/17/02.]

[2002 WAC Supp—page 972]

WAC 296-05-427 Notification requirements. All applicants who meet the program admission requirements must be notified that they have been placed in an eligibility pool. All program sponsors must give a written notice of rejection to each applicant who is not selected for either an eligibility pool or the apprenticeship program. This rejection notice must include the reasons for rejection, the admission requirements for those admitted to the pool or program and the appeal procedures available.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-427, filed 10/31/01, effective 1/17/02.]

WAC 296-05-429 Existing lists of eligibles and public notice. (1) A sponsor who adopts a selection method under WAC 296-05-417 must conduct an enrollment deficiency analysis (see WAC 296-05-433). If, as a result of this analysis, the sponsor concludes that there are fewer minorities and/or women on its existing pools and lists than there should be, these pools and lists must be discarded.

(2) Once the existing pools and lists have been discarded, new eligibility pools must be established and lists must be posted at the sponsor's place of business. Sponsors must allow at least a two-week period for accepting applications for admission to the apprenticeship program. There must be at least thirty days of public notice in advance of the earliest date for application for admission to the apprenticeship program (see WAC 296-05-411).

(3) Once an applicant has been placed in an eligibility pool, they must be retained on the eligibility lists for two years unless they request, in writing, that they be removed or unless they fail to respond to an apprentice job opportunity mailed to applicant's last known address by certified mail, return receipt requested. It is the applicant's responsibility to keep the sponsor informed of the applicant's current mailing address. A sponsor, upon receiving a written request from a former applicant whose name was removed from an eligibility list, may restore the applicant's name to the list.

(4) Applicants who have been accepted in the program must be given a reasonable time in which to report for work. A "reasonable time" will be interpreted in light of the customs and practices of the industry for reporting for work. All applicants must be treated equally in the determination and application of "a reasonable time."

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-429, filed 10/31/01, effective 1/17/02.]

WAC 296-05-431 Affirmative action records of the WSATC retained by the department. The WSATC must keep the following types of records in the apprenticeship supervisor's office:

- (1) Registration requirements;
- (2) Individual program standards;
- (3) Registration records;
- (4) Program compliance reviews and investigations;
- (5) Any other records pertinent to the determination of compliance with these rules; and
- (6) Any records that must be reported to the United States Department of Labor.

The records required by these rules and any other information relevant to compliance with 29 CFR Part 30 must be

maintained for five years. Also, these records and related information must be made available upon request to the United States Department of Labor or other authorized representatives.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-431, filed 10/31/01, effective 1/17/02.]

WAC 296-05-433 Enrollment deficiency analysis. (1)

In analyzing a program to determine whether a deficiency exists, the sponsor must consider at least the following factors:

(a) The percentage of the working age minority and female population in the program sponsor's labor market area;

(b) The percentage of the minority and female labor force in the program sponsor's labor market area;

(c) The percentage of the minority and female apprentices participating in a particular trade or craft compared to the percentage of minorities and women in the labor force in the program sponsor's labor market area;

(d) The percentage of minorities and women participating as journey-level employee(s) employed by the employer(s) participating in the program as compared with the percentage of minorities and women 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; and

(e) The general availability of minorities and women in the sponsor's labor market that have present or potential capacity for apprenticeship in the program sponsor's labor market area.

(2) To calculate the above percentage(s) or any other percentages for the analysis, the sponsor must use the following formula: Divide the number of minority individuals or females in a particular classification in the labor force or population by the total labor force or population.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-433, filed 10/31/01, effective 1/17/02.]

WAC 296-05-435 Data and information. (1) The apprenticeship supervisor must provide program sponsors with data and information on minorities and women labor force characteristics generated by the employment security department or the office of financial management. This information is available for standard metropolitan statistical areas as well as special statistical areas.

(2) The specific data used to calculate the percentages in WAC 296-05-433 must be obtained from records maintained by apprenticeship committees.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-435, filed 10/31/01, effective 1/17/02.]

WAC 296-05-437 Developing and evaluating enrollment goals and timetables. (1) Goals and timetables must be based upon the sponsor's enrollment analysis of its underutilization of minorities and women and its entire affirmative action program. Specific enrollment goals for minorities and a separate single goal for women may be acceptable unless a

particular group is employed in a substantially disparate manner. In such a case, separate goals must be established for the disparate group. An example of such a situation would be where a specific minority group of women were underutilized even though the sponsor had achieved its enrollment goals for women generally. A separate, additional goal should be established to increase the enrollment of this specific group.

(2) In establishing the enrollment goals and timetables, the sponsor should establish reasonable goals that can be achieved through a good faith effort.

(3) In evaluating whether a sponsor has satisfied the affirmative action requirements of these rules, the WSATC must determine whether the sponsor has made a good faith effort to do so.

(4) The sponsor's good faith efforts shall be judged by whether the sponsor is following its affirmative action program and attempting to make it work. A specific example of a good faith effort by a sponsor would be when a sponsor conducts evaluations of its affirmative action program and makes the necessary changes to achieve success in the attainment of its goals.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-437, filed 10/31/01, effective 1/17/02.]

WAC 296-05-439 Failure to meet goals and timetables. (1) If 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 in order to obtain maximum effectiveness toward the attainment of its goals.

(2) If the WSATC determines the failure of a sponsor to meet its goals and timetables is substantially a result of the enrollment selection method adopted, the sponsor may be required to develop and adopt a WSATC prescribed selection method.

(3) If a sponsor's failure to meet its goals is substantially a result of the qualification standard it used to select minorities and/or women, the sponsor may be required to show that the qualification standards directly relate to job performance. Specifically, the sponsor will be expected to demonstrate a significant statistical relationship between the qualification standards used and the required job performance. This statistical relationship must be based upon the procedures discussed in 41 CFR Part 60-3 (Guidelines on employee selection procedures).

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-439, filed 10/31/01, effective 1/17/02.]

WAC 296-05-441 Noncompliance with federal and state equal opportunity requirements. When a compliance review concludes that a sponsor is not operating according to the federal or state laws or regulations requiring equal opportunity, the apprenticeship supervisor must take action. Such action must include:

(1) Notifying the sponsor in writing of the review results;

(2) Making a reasonable effort to secure voluntary compliance from the program sponsor; and

(3) Giving the sponsor a reasonable amount of time to comply with the review recommendations before undertaking sanctions under WAC 296-05-013.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-441, filed 10/31/01, effective 1/17/02.]

WAC 296-05-443 Complaint filing. (1) Any apprentice or applicant for apprenticeship who believes they have been discriminated against may file a complaint. The basis of the complaint may be:

(a) Discrimination on the basis of race, sex, color, religion, national origin, age, disability or as otherwise specified by law by a sponsor or a sponsor's program;

(b) The equal opportunity standards have not been followed; or

(c) The sponsor's affirmative action plan does not comply with the requirements of this chapter.

(2) A complaint may be filed in person or through an authorized representative. The complainant may choose to file a complaint with the WSATC or with a private review panel as established in WAC 296-05-445.

(3) A complaint must be in writing and shall be signed by the complainant. The complaint 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 leading to the complaint.

(4) The complaint must be filed not later than one hundred eighty days from the date of the alleged discrimination or violation of the sponsor's affirmative action plan or the rules of this chapter. If a complaint is initially filed with the private review panel and the complainant later wishes to refer the complaint to the WSATC, the referral must occur within one hundred eighty days of the circumstances leading to the complaint or within thirty days of the private review panel's final decision, whichever is later. If good cause is shown, the WSATC may extend these time periods.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-443, filed 10/31/01, effective 1/17/02.]

WAC 296-05-445 Private review panels. Sponsors may establish private review panels to resolve affirmative action complaints. The WSATC encourages sponsors to establish, fair, speedy, and effective procedures for the operation of the private review panel. Private review panels should be comprised of three or more responsible persons from the community who will serve without compensation. They should not be directly associated with the administration of an apprenticeship program. If necessary, sponsors may join together to establish a private review panel.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-445, filed 10/31/01, effective 1/17/02.]

WAC 296-05-447 Processing of complaints. (1) All approved programs must establish procedures explaining the program's complaint review process. These procedures must comply with the requirements of this section. Each sponsor must give a copy of the complaint procedures to each apprenticeship applicant and to all enrolled apprentices.

(2) When the apprenticeship supervisor receives a complaint and the sponsor has a private review panel in place, the

complaint must be referred to the panel unless the complainant chooses otherwise or unless the council concludes that the panel will not satisfactorily resolve the complaint.

(3) Once the complaint is referred to the private review panel, the panel has no more than thirty days to resolve it. At the end of the period, the supervisor will obtain the reports from the complainant and the review body as to the disposition of the complaint. If the complaint has been satisfactorily resolved and there is no other indication of failure to apply equal opportunity standards, the case shall be closed and the parties formally notified.

(4) If the private review panel has not satisfactorily resolved the complaint within ninety days, the WSATC may conduct a compliance review and take all necessary steps to resolve the complaint.

(5) If the review panel satisfactorily resolves the complaint but there is evidence that the equal opportunity practices of the sponsor's program are not in compliance with the requirements of this chapter, the council must conduct a compliance review and take all steps necessary to bring the program into compliance.

(6) When a private review panel does not exist, the WSATC may conduct a compliance review to determine the facts of the complaint and any other information necessary to resolve the dispute.

(7) If the WSATC believes that satisfactorily resolving a complaint requires a change in the time limits established in this section, it can modify the time constraints by adopting special processing procedures. However, special processing procedures must only be adopted when circumstances warrant them and only if they will not prejudice any person or party associated with the complaint.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-447, filed 10/31/01, effective 1/17/02.]

WAC 296-05-449 Program registration cancellation procedures. (1) If the WSATC decides to withdraw a program's registration, it must give written notice to the sponsor that there is reasonable cause, under WAC 296-05-013, to do so.

(2) If the sponsor requests a hearing, it must be a written request to the apprenticeship supervisor within fifteen days of the receipt of the WSATC's withdrawal notice. When the supervisor receives the sponsor's request, a hearing must be convened. The WSATC's final decision to withdraw a program's registration must be based on the compliance review file and other evidence presented at the hearing. The WSATC may allow the sponsor a reasonable time to achieve voluntary corrective action. If the WSATC decides that the apprenticeship program is not in compliance and that voluntary corrective action is not an option, the program's registration may be withdrawn. If the WSATC decides to withdraw the program's registration, it must make public notice of the order and give written notice to the sponsor. If the withdrawal was the result of complaint proceedings, the WSATC must give written notice of the withdrawal to the complainant as well.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-449, filed 10/31/01, effective 1/17/02.]

WAC 296-05-451 Reinstatement of program registration. Any apprenticeship program deregistered as authorized by these rules may be reinstated upon presentation of adequate evidence to the WSATC that the apprenticeship program is operating in compliance with these rules.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-451, filed 10/31/01, effective 1/17/02.]

WAC 296-05-453 Adoption of consistent state plans. All apprenticeship programs registered with the WSATC must comply with the requirements of these rules and 29 CFR Part 30. If a program fails to comply or is inconsistent with the requirements of these rules and/or 29 CFR Part 30, the WSATC may disapprove or deregister the program. The WSATC must notify the United States Department of Labor of any state apprenticeship program disapproved and deregistered by it. The state apprenticeship program disapproved or deregistered by the WSATC for noncompliance with the requirements of these rules or 29 CFR Part 30 may, within fifteen days of the receipt of the notice of disapproval or deregistration, appeal to the United States Department of Labor to set aside the determination of the WSATC. The United States Department of Labor must make its determination on the basis of the record. The United States Department of Labor may grant the state program sponsor, the state apprenticeship and training, and the complainant, if any, the opportunity to present oral or written argument.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-453, filed 10/31/01, effective 1/17/02.]

WAC 296-05-455 Intimidatory or retaliatory acts. (1) Any intimidation, threat, coercion, or retaliation by or with the approval of a sponsor, against a person who has exercised rights or privilege under Title VII of the Civil Rights Act of 1964 as amended or the amended Executive Order 11246 is a violation of the equal opportunity standards of these rules. Such acts may be investigated by the WSATC and, if appropriate, will be prosecuted.

(2) Identity of a complainant must be kept confidential except when it is necessary to carry out the intent of these rules, for example, the need to conduct an investigation, hearing, or judicial proceeding.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-455, filed 10/31/01, effective 1/17/02.]

WAC 296-05-457 Exemptions. A sponsor may request an exemption from Part D of these rules. The request may ask exemption from all of the section or from selected ones. The request must be in writing and must be addressed to the apprenticeship supervisor. It must explain why an exemption is needed. An exemption may be granted either by the WSATC or by the secretary of the United States Department of Labor, but can only be granted for good cause. If the WSATC approves an exemption that affects a substantial number of employers, it must notify the United States Department of Labor explaining why the exemption was allowed.

[Statutory Authority: RCW 49.04.010, 2001 c 204, and chapter 49.04 RCW. 01-22-055, § 296-05-457, filed 10/31/01, effective 1/17/02.]

Chapter 296-17 WAC

GENERAL REPORTING RULES, CLASSIFICATIONS, AUDIT AND RECORDKEEPING, RATES AND RATING SYSTEM FOR WASHINGTON WORKERS' COMPENSATION INSURANCE

WAC

296-17-31013	Building construction.
296-17-35203	Special reporting instruction.
296-17-52116	Repealed.
296-17-52118	Repealed.
296-17-52119	Repealed.
296-17-52120	Repealed.
296-17-52121	Repealed.
296-17-52122	Repealed.
296-17-52123	Repealed.
296-17-52124	Repealed.
296-17-52125	Repealed.
296-17-52126	Repealed.
296-17-52140	Classification 0540.
296-17-52141	Classification 0541.
296-17-52150	Classification 0550.
296-17-52151	Classification 0551.
296-17-855	Experience modification.
296-17-875	Table I.
296-17-880	Table II.
296-17-885	Table III.
296-17-890	Table IV.
296-17-895	Industrial insurance accident fund base rates and medical aid base rates by class of industry.
296-17-89502	Industrial insurance accident fund, medical aid and supplemental pension rates by class of industry for nonhourly rated classifications.
296-17-90409	I understand that there are specific prerequisites that an organization must meet to sponsor a new retrospective rating group plan.
296-17-90421	Is there a requirement for employer members of an organization to be engaged in substantially similar businesses to participate in the organization's group plan?
296-17-90447	How are third-party, second injury, and occupational disease claims handled for retrospective premium calculations?
296-17-90492	Table I.
296-17-90493	Table II.
296-17-90494	Table III.
296-17-90495	Table IV.
296-17-90496	Table V.
296-17-90497	Table VI.
296-17-920	Assessment for supplemental pension fund.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-17-52116	Classification 0524. [Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-52116, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 97-06-007, § 296-17-52116, filed 2/24/97, effective 4/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
296-17-52118	Classification 0526. [Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-52118, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 97-12-011, § 296-17-52118, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
296-17-52119	Classification 0527. [Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-52119, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 97-12-011, § 296-17-52119, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
296-17-52120	Classification 0528. [Statutory Authority: RCW 51.16.035. 98-18-042, § 296-17-52120, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 97-12-011, § 296-17-52120, filed 5/27/97, effective 7/1/97.] Repealed by

- 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
- 296-17-52121 Classification 0529. [Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-52121, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-12-011, § 296-17-52121, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
- 296-17-52122 Classification 0530. [Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-52122, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-12-011, § 296-17-52122, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
- 296-17-52123 Classification 0531. [Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-52123, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-12-011, § 296-17-52123, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
- 296-17-52124 Classification 0532. [Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-52124, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-12-011, § 296-17-52124, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
- 296-17-52125 Classification 0533. [Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-52125, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-12-011, § 296-17-52125, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.
- 296-17-52126 Classification 0534. [Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-52126, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-12-011, § 296-17-52126, filed 5/27/97, effective 7/1/97.] Repealed by 01-23-059, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.16.035.

WAC 296-17-31013 Building construction. (1) Does this same classification approach apply to building and construction contractors?

Yes, but it may not appear that way without further explanation. We classify contractors by phase and type of construction since it is common for each contract to vary in scope.

Example: A contractor who builds and remodels private residences may frame the structure and work on no other phases of the project. On another job the same contractor may do only the interior finish carpentry. On still another job the contractor may install a wood deck or build a garden arbor. Each of these carpentry activities is covered by a different classification code. To ensure that contractor businesses receive the same treatment as other businesses, we assign classifications according to the phases and types of construction they contract to perform. Since some contractors specialize in one area of construction, such as plumbing, roofing, insulation, or electrical services, this classification approach mirrors that of nonbuilding contractor businesses. The policy of assigning several basic classifications to contractors engaged in multiple phases of construction may seem to be in conflict with the classification approach used for nonbuilding contractor businesses, but we have simply used the **multiple business classification approach**.

If we have assigned multiple classifications to your construction business you should take special care in maintaining the records required in the auditing and recordkeeping section of this manual. If we discover that you have failed to keep the required records we will assign all worker hours for which the records were not maintained to the highest rated classification applicable to the work that was performed.

(2) Who does this rule apply to?

If you are a building, construction or erection contractor and we have assigned one or more of the following classifications to your business, this rule applies to you: 0101, 0103, 0104, 0105, 0107, 0108, 0201, 0202, 0210, 0212, 0214, 0217, 0219, 0301, 0302, 0303, 0306, 0307, 0403, 0502, 0504, 0506, 0507, 0508, 0509, 0510, 0511, 0512, 0513, 0514, 0516, 0517, 0518, 0519, 0521, 0540, 0541, 0550, 0551, 0601, 0602, 0603, 0607, 0608, and 0701.

(3) Can I have a single classification assigned to my business to cover a specific construction project?

Yes, to simplify recordkeeping and reporting requirements we will assign a single classification to cover an entire project.

(4) How do I request the single classification for one of my construction projects?

You should send your request to the attention of your policy manager at the address below:

Department of Labor and Industries
P.O. Box 44144
Olympia, Washington 98504-4144

(5) If I have asked for a single classification on one of my construction projects, how do you determine which classification will apply?

You must supply us with a description of the project and a break down of the total number of hours of exposure by phase of construction that you are responsible for.

Example: You notify us that your company will be responsible for all plumbing and iron erection work on a commercial building site. You have requested a single classification for this project. In your request you tell us that you estimate that it will take one thousand work hours to perform all the plumbing work and five hundred work hours to do the steel erection work.

With this information we will estimate the premiums by classification.

Example: We determine that the plumbing work is covered under classification 0306 and the steel erection work is covered under classification 0518. Assume that classification 0306 has an hourly premium rate of \$1.50 and classification 0518 has an hourly premium rate of \$2.55. We estimate the total premium on this job to be \$2,775 (1,000 hours x \$1.50 = \$1,500 + 500 hours x \$2.55 = \$1,275).

Our next step in this process is to develop an average hourly rate for the project. We will use this information to select the single classification which will apply to this project.

Example: We will take the estimated premium (\$2,775) and divide this number by the estimated hours (1,500) and arrive at an average hourly rate of \$1.85.

To select the single classification that will apply to a construction project, we will compare the average hourly rate that we have computed to the rates of the classifications applicable to the project. We will select the classification whose hourly rate is the closest to the average hourly rate that we computed from the information you supplied us with.

Example: From the information you supplied, we have determined that the average hourly rate for this project is \$1.85. We also know that the rate for the plumbing classification (0306) is \$1.50 per hour and the rate for steel erection is \$2.55 per hour. We would assign classification 0306 as the single classification applicable to this project.

(6) How will I know what classification will apply to my construction project?

We will send you a written notice which will specify the basic classification and premium rate that will apply to this project.

(7) If I have asked for a single classification to cover one of my construction projects, am I required to use the single classification which you gave me?

No, but you should call your policy manager to verify what other classifications would apply to the project. The name and phone number of your policy manager can be found on your quarterly premium report or your annual rate notice. For your convenience you can call us at (360) 902-4817 and we will put you in contact with your assigned policy manager.

(8) I am a general construction or erection contractor, I subcontract all my work and have no employees of my own. Do I have to report to the department of labor and industries?

No, since you do not have employees, you do not need to report to the department of labor and industries. You should be aware that the workers' compensation insurance laws of Washington include certain independent contractors as workers. If we determine that an independent contractor that you used qualifies as a covered worker, you will be responsible for the premium due for their work time. You can also be held responsible for premiums due to labor and industries if you subcontract with an unregistered contractor and they fail to pay premiums on behalf of their employees. It is in your best interest to make sure that your subcontractors are registered contractors by contacting us at 1-800-647-0982.

(9) Am I required to keep any special records of subcontractors that I use?

Yes, you are required to keep certain information about the subcontractors that you use. The information required is:

- Subcontractor's legal name;
- Contractor registration number and expiration date;
- UBI number (or labor and industries account ID number).

If you supply materials to a subcontractor, also keep a record of the:

- Amount of material supplied;
- Project name or location;
- Date material was supplied; and
- Completion date of contracted work.

Failure to maintain these records may result in the subcontractor being considered a covered worker for whom you must report hours.

[Statutory Authority: RCW 51.16.035, 01-23-059, § 296-17-31013, filed 11/20/01, effective 1/1/02; 99-18-068, § 296-17-31013, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-31013, filed 8/28/98, effective 10/1/98.]

WAC 296-17-35203 Special reporting instruction. (1)

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:

(a) Agreement must be in writing and signed by the employer and the individual athlete.

(b) 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.

(c) The state agreed upon accepts responsibility for providing coverage and acknowledges such to the department by certified mail.

(d) Agreement and certification by the other state must be received by this department's underwriting section prior to any injury incurred by the athlete.

(e) 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.

(2) 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.

(3) **Special trucking industry rules.** The following subsection shall apply to all trucking industry employers as applicable.

(a) **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.

(b) **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.

(c) **Exclusions.** Trucking industry employers meeting all of the following conditions are exempted from mandatory coverage.

(i) Must be engaged exclusively in interstate or foreign commerce.

(ii) 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.

(iii) 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 (i), (ii), and (iii) 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.

(d) **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:

(i) "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).

(ii) "Contacts" means locations at which freight, merchandise, or goods are picked up or dropped off within the boundaries of this state.

(iii) "Doing business" means having any terminals, agents or contacts within the boundaries of this state.

(iv) "Employees" means the same as the term "worker" as contained in RCW 51.08.180.

(v) "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.

(vi) "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).

- The individual must be hired in Washington or must have been transferred to Washington; and
- The individual must perform some work in Washington (i.e., driving, loading, or unloading trucks).

(4) **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 (d) of this subsection 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.

(a) General definitions. For purpose of interpretation of this section, the following terms shall have the meanings given below:

(i) "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.

(ii) "Work day" shall mean any consecutive twenty-four-hour period.

(b) 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:

(i) The name of each worker;

(ii) The Social Security number of each worker;

(iii) The beginning date of employment for each worker and, if applicable, the separation date of employment for each such worker;

(iv) The basis upon which wages are paid to each worker;

(v) The number of units earned or produced for each worker paid on a piece-work basis;

(vi) The risk classification(s) applicable to each worker;

(vii) The number of actual hours worked by each worker, unless another basis of computing hours worked is prescribed in WAC 296-17-31021. 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;

(viii) 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;

(ix) In the event a single worker's time is divided between two or more risk classifications, the summary contained in (b)(viii) of this subsection shall be further broken down to show the actual hours worked in each risk classification for the worker;

(x) The workers' total gross pay period earnings;

(xi) The specific sums withheld from the earnings of each worker, and the purpose of each sum withheld;

(xii) The net pay earned by each such worker.

(c) 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.

(d) Recordkeeping - estimated premium computation. Any employer required by this section to make, keep, and preserve records containing the information as specified in (b) and (c) of this subsection, who fails to make, keep, and preserve such records, shall have premiums calculated as follows:

(i) 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.

(ii) 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 (d)(i) of this subsection.

(e) Reporting requirements and premium payments.

(i) 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 (e)(iii) of this subsection. Employers reporting under the provisions of (e)(iii) 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.

(ii) 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 (e)(i) 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.

(iii) 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.

(f) 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.

(g) 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.

(h) 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.

(i) 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:

- (I) The name of the contractor who has been engaged to perform the work;
- (II) The contractor's UBI number;
- (III) The contractor's farm labor contractor number;
- (IV) The total contract award;
- (V) The date the work is to be commenced; a description of the work to be performed including any pertinent acreage information;
- (VI) Location where the work is to be performed;
- (VII) A contact name and phone number of the person, firm, or corporation who let the contract;
- (VIII) The total estimated wages to be paid by the contractor and any subcontractors;
- (IX) The amount to be subcontracted out if such subcontracting is permitted under the terms of the contract;
- (X) The total estimated number of worker hours anticipated by the contractor and his/her subcontractors in the fulfillment of the contract terms;
- (j) 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

(k) 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.

(5) Logging and/or tree thinning—Mechanized operations—Industry rule. The following subsection shall apply to all employers assigned to report worker hours in risk classification 5005, WAC 296-17-66003.

(a) 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 may be required after the initial survey to retain the risk classification assignment.

(b) 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 sub-account 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.

(c) 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.

(6) Special drywall industry rule.

(a) **Why have we changed the way you pay premiums?** Under Washington law (RCW 51.16.035), we are given the authority to establish how workers' compensation insurance rates are computed. For most industries, workers' compensation insurance rates are based on hours worked by employees. While the worker hour system works well for most industries, this method of paying premium can be unfair when a large segment of workers within an industry are not paid an hourly wage. The drywall industry is one in which many workers are paid on the basis of material installed and/or finished, (piece work), not the hours they work. To help remedy the problems caused by using work hours as the basis of how you pay premiums, and to provide greater fairness to employers engaged in drywall work, the premium for classifications 0540, 0541, 0550, and 0551 is based on material (square feet).

(b) **How can I qualify for a discounted rate?** For each drywall industry classification, we have established a second classification covering the same activity. The second classification carries a discounted rate. To qualify for a discounted classification and rate you are required to meet all of the following conditions:

(i) Prior to the end of the quarter that you want the discounted classifications and rates to be applied to your business, you (an owner/officer) must attend two workshops that we offer. For example, if you want the discounted classifications and rates to apply to your business for the third calendar quarter (July 1 through September 30), you (an owner/officer) must attend the two workshops by September 30. One workshop covers claims and risk management practices; the other workshop covers premium reporting and record-keeping. The two workshops may be offered together or separately. Be sure to sign in so that you receive credit for attending the workshops.

(ii) You (an owner/officer) must provide us with a signed and completed voluntary release of information form that we may provide to you at the workshops. If we audit your account we will use this release form to obtain material and supply/purchase sales records from the material supply dealer(s) you use. This will aid us as we verify the information you supply us on your premium and supplemental

reports. If we need to verify the information that you supplied us, we will send you written notice before we contact your material supply dealer(s). We must receive this release form prior to the end of the quarter in which you want the discounted classifications and rates to become effective. For example, if you want the discounted classifications and rates to apply to your business for the third calendar quarter (July 1 through September 30), we must receive your signed and completed release of information form by September 30. You can complete the voluntary release form at the workshop and give it to our representative at the workshop or mail it to:

Labor and Industries
Employer Services - Drywall Manager
P.O. Box 44166
Olympia, Washington 98504-4166

(iii) You must submit complete and accurate premium reports when they are due and be current with all premium reports and payments. If you owe us money (premiums) for any quarter, we will not allow you to report in the discounted classifications until your premium obligations have been paid. This requirement applies to any classification assigned to your business and for any exposure (hours, square feet, etc.) which occurs. Businesses requesting the use of the discounted classifications while in field audit status shall not be assigned the discounted classifications and rates until the audit process is complete and all criteria for this rule have been met.

(iv) You must provide us with a supplemental quarterly report which shows by employee the employee's name and Social Security number, the wages you paid them during the quarter, the basis for how they are paid, (piece rate, commission, hourly, etc.) their rate of pay per unit/hour, and a notation as to whether they are an installer, finisher, scrapper, painter, etc. This report is to be attached to and submitted with your quarterly premium report.

(v) For any work which you subcontract to others, you must maintain the records described in WAC 296-17-31013 which requires you to keep certain information about the subcontractors you use and materials you may have supplied to the subcontractors.

(vi) You must keep and retain the payroll and employment records described in WAC 296-17-35201.

If you do not meet all of the above conditions, we will not assign the discounted rates to your business and you will be required to pay premiums in the nondiscounted classification(s).

(c) **Can I be disqualified from using the discounted rates?** Yes, as opposed to failing to qualify because you did not meet the conditions of (b) of this subsection, your business will be disqualified from using the discounted premium rates if:

- You do not file premium reports on time;
- You fail to pay premiums on time;
- You under report or misclassify the work performed by your employees; or
- You fail to meet any other condition set forth in this rule.

(d) **How long will I be disqualified from using the discounted classifications?** If the drywall underwriter discov-

ers your business has failed to meet the conditions as required in this rule, your business will need to comply to retain using the discounted classifications. If your business does not comply timely, your business may be referred for an audit. If, as a result of an audit, your business is in noncompliance, your business will be disqualified from using the discounted classifications for three years (thirty-six months) from the period of last noncompliance. If your business does comply, we will schedule your business to be audited over the next several years to ensure continued compliance.

(e) **I have several businesses. If one of my businesses is disqualified from using the discounted rates will that affect my other businesses?** Yes, if you have ownership interest in a business which has been disqualified from using the discounted rates, and you also have ownership interest in other construction businesses which have separate industrial insurance accounts or subaccounts, all businesses in which you have ownership interest will be disqualified from using the discounted rates. This includes a business which you own or owned that is in bankruptcy status and for which you have not entered into a payment agreement, if you owe us any money; or money that you owe us which we wrote off as an uncollectible debt.

(f) **If I make a mistake in how I reported to you, should I correct the error?** Yes, you should send in a revised report(s) with an explanation of the error you are trying to correct to the drywall underwriter. If we audit your business, and we determine that you have under reported exposure in any classification assigned to your business, all exposure which you reported in the discounted classifications for the audit period will be reclassified to the nondiscounted classifications.

(g) **If I disagree with an audit or other decision can I still use the discounted rates while we are resolving the issue?** Yes, if you are involved in a dispute with us over the status of an independent contractor, the issue being whether an individual is a covered worker; the proper classification of work your employees performed; or under reporting; you may qualify for the discounted classifications by paying the disputed amount while the issue is under dispute. In the event the issue is resolved in your favor we will refund any moneys which you paid which were disputed. We will not pay interest on the refunded amount. If you do not pay the audit balance or disputed amount when requested or do not post an equivalent bond, you will not be permitted to use any of the discounted classifications.

(h) **I am the owner of the business, and I do some of the work myself. Can I deduct the work I do from the total square feet to be reported to you?** Yes, as an owner of the business you can deduct the amount of work that you did from the total square feet which you are going to report to us.

(i) **How do I calculate and report this deduction to you?** To claim this deduction you must send us a report which shows by job, project, site or location the total amount of material that was installed or finished at that job, project, site or location; the amount of material which you, the owner, installed and/or finished at the job, project, site or location; the hours it took you to install and/or finish the material you are claiming deduction for; the total material installed and/or

finished by subcontractors (including the subcontractor's legal name and Unified Business Identifier (UBI) at the job, project, site or location); the total material installed and/or finished by employees at the job, project, site or location; and the hours the employees worked by job, project, site or location. This report must accompany the quarterly report in which you are claiming a deduction. If there are several owners, you must supply this information for each owner for whom you wish to claim a deduction.

[Statutory Authority: RCW 51.16.035, 01-23-059, § 296-17-35203, filed 11/20/01, effective 1/1/02; 99-18-068, § 296-17-35203, filed 8/31/99, effective 10/1/99; 98-18-042, § 296-17-35203, filed 8/28/98, effective 10/1/98.]

WAC 296-17-52116 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52118 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52119 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52120 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52121 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52122 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52123 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52124 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52125 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52126 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-17-52140 Classification 0540.

0540-00 Wallboard installation, including scrapping - discounted rate (to be assigned only by the drywall underwriter)

Applies to contractors engaged in the installation or repair of wallboard. This classification includes the installation of wallboard, drywall, or sheetrock in all types of residential or commercial buildings or structures. The process consists of cutting wallboard with a utility knife, hacksaw, or power saw to the desired size and then butting material into place and nailing or screw fastening to wood or metal wall studs. Electrical box, window, or door openings are cut out where needed. Installation may require the use of scaffolding, ladders, specialty lifts, or stilts when working at heights,

including the use of T holders or hydraulic lifts to hold material being installed on ceilings. This classification also includes wallboard scrapping (picking up and discarding unused portions of wallboard remnants or scraps) at the construction site when performed by employees of the wallboard contractor.

This classification excludes delivery of materials to the construction site by material dealer employees which is to be reported separately in the applicable delivery classification; delivery and stocking of materials to the construction site when performed by employees of the wallboard contractor which is to be reported separately in classification 1101; wallboard taping (including priming and texturing when performed by employees of the wallboard contractor) which is to be reported separately in classification 0541 or 0551; wallboard scrapping by nonwallboard contractor employees which is to be reported separately in the applicable construction debris cleanup classification; plastering, stuccoing or lathing work which is to be reported separately in classification 0303; and the framing of nonbearing walls when performed by the drywall contractor which is to be reported separately in classification 0516.

Special note: *The basis of premium for this classification is material installed (square feet).* The amount used to determine premium calculation for material installed shall be the same amount used for premium calculation of material finished for use in classification 0541 or 0551. The amount of wallboard purchased for each job, project, site or location shall be equal to the amount of material installed or finished. For contractors to be assigned and continue to report in this classification, their account must remain in good standing and conform to the conditions specified in the special drywall industry rule.

[Statutory Authority: RCW 51.16.035. 01-23-059, § 296-17-52140, filed 11/20/01, effective 1/1/02.]

WAC 296-17-52141 Classification 0541.

0541-00 Wallboard taping, including texturing and priming -discounted rate (to be assigned only by the drywall underwriter)

Applies to contractors engaged in taping wallboard in residential or commercial buildings or structures. The process of taping occurs after wallboard, drywall, or sheetrock has been installed and involves taping the seams, and spreading joint compound over the seams and nail or screw heads. When dry, the seams are sanded to remove any rough edges. This classification includes the following activities when performed by employees of a wallboard contractor and part of the taping process which includes wallboard texturing (a putty-like material that is sprayed over the prepared wallboard in a clump-like application and smoothed with a trowel or putty knife), and wallboard priming (the application of an undercoating that may be applied either directly to the wallboard or after it has been textured). This classification also includes incidental painting when performed by employees of a wallboard contractor and part of the taping process.

This classification excludes wallboard installation which is to be reported separately in classification 0540 or 0550;

wallboard priming and texturing not performed by employees of the wallboard contractor and part of the taping process which is to be reported separately in classification 0521; interior painting which is to be reported separately in classification 0521; and wallboard scrapping by nonmaterial dealer employees which is to be reported separately in classification 0540 or 0550.

Special note: *The basis of premium for this classification is material finished (square feet).* The amount used to determine premium calculation for material finished shall be the same amount used for premium calculation of material installed for use in classification 0540 or 0550. The amount of wallboard purchased for each job, project, site or location shall be equal to the amount of material installed or finished. For contractors to be assigned, and continue to report in this classification, their account must remain in good standing and conform to the conditions specified in the special drywall industry rule.

[Statutory Authority: RCW 51.16.035. 01-23-059, § 296-17-52141, filed 11/20/01, effective 1/1/02.]

WAC 296-17-52150 Classification 0550.

0550-00 Wallboard installation, including scrapping - nondiscounted rate (to be assigned only by the drywall underwriter)

Applies to contractors engaged in the installation or repair of wallboard. This classification includes the installation of wallboard, drywall, or sheetrock in all types of residential or commercial buildings or structures. The process consists of cutting wallboard with a utility knife, hacksaw, or power saw to the desired size and then butting material into place and nailing or screw fastening to wood or metal wall studs. Electrical box, window, or door openings are cut out where needed. Installation may require the use of scaffolding, ladders, specialty lifts, or stilts when working at heights, including the use of T holders or hydraulic lifts to hold material being installed on ceilings. This classification also includes wallboard scrapping (picking up and discarding unused portions of wallboard remnants or scraps) at the construction site when performed by employees of the wallboard contractor.

This classification excludes delivery of materials to the construction site by material dealer employees which is to be reported separately in the applicable delivery classification; delivery and stocking of materials to the construction site when performed by employees of the wallboard contractor which is to be reported separately in classification 1101; wallboard taping (including priming and texturing when performed by employees of the wallboard contractor) which is to be reported separately in classification 0541 or 0551; wallboard scrapping by nonwallboard contractor employees which is to be reported separately in the applicable construction debris cleanup classification; plastering, stuccoing or lathing work which is to be reported separately in classification 0303; and the framing of nonbearing walls when performed by the drywall contractor which is to be reported separately in classification 0516.

Special note: *The basis of premium for this classification is material installed (square feet).* The amount used to determine premium calculation for material installed shall be the same amount used for premium calculation of material finished for use in classification 0541 or 0551. The amount of wallboard purchased for each job, project, site or location shall be equal to the amount of material installed or finished. For contractors to be assigned and continue to report in this classification, their account must remain in good standing and conform to the conditions specified in the special drywall industry rule.

[Statutory Authority: RCW 51.16.035. 01-23-059, § 296-17-52150, filed 11/20/01, effective 1/1/02.]

WAC 296-17-52151 Classification 0551.

0551-00 Wallboard taping, including texturing and priming -nondiscounted rate (to be assigned only by the drywall underwriter)

Applies to contractors engaged in taping wallboard in residential or commercial buildings or structures. The process of taping occurs after wallboard, drywall, or sheetrock has been installed and involves taping the seams, and spreading joint compound over the seams and nail or screw heads. When dry, the seams are sanded to remove any rough edges. This classification includes the following activities when performed by employees of a wallboard contractor and part of the taping process which includes wallboard texturing (a putty-like material that is sprayed over the prepared wallboard in a clump-like application and smoothed with a trowel or putty knife), and wallboard priming (the application of an undercoating that may be applied either directly to the wallboard or after it has been textured). This classification also includes incidental painting when performed by employees of a wallboard contractor and part of the taping process.

This classification excludes wallboard installation which is to be reported separately in classification 0540 or 0550; wallboard priming and texturing not performed by employees of the wallboard contractor and part of the taping process which is to be reported separately in classification 0521; interior painting which is to be reported separately in classification 0521; and wallboard scrapping by nonmaterial dealer employees which is to be reported separately in classification 0540 or 0550.

Special note: *The basis of premium for this classification is material finished (square feet).* The amount used to determine premium calculation for material finished shall be the same amount used for premium calculation of material installed for use in classification 0540 or 0550. The amount of wallboard purchased for each job, project, site or location shall be equal to the amount of material installed or finished. For contractors to be assigned, and continue to report in this classification, their account must remain in good standing and conform to the conditions specified in the special drywall industry rule.

[Statutory Authority: RCW 51.16.035. 01-23-059, § 296-17-52151, filed 11/20/01, effective 1/1/02.]

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:

$$\text{MODIFICATION} = \frac{A_p + W A_e + (1-W) E_e + B}{E + B}$$

The components A_p , $W A_e$, and $(1-W) E_e$ 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.

" A_p " 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 \$11,764 the primary actual loss shall be determined from the formula:

$$\text{PRIMARY LOSS} = \frac{29,410}{\text{Total loss} + 17,646} \times \text{total loss}$$

Primary actual losses for selected claim values are shown in Table I. For each claim less than \$11,764 the full value of the claim shall be considered a primary loss.

" A_e " 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 " $W A_e$ " 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.

" E_e " 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 " $(1-W) E_e$ " in the experience

rience 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, 51.16.035, 51.32.073, 51.18.010. 01-23-061, § 296-17-855, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-855, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.16.035, 51.04.020. 00-14-052, § 296-17-855, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 99-24-055, § 296-17-855, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-855, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-855, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-855, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.04.020, 95-23-080, § 296-17-855, filed 11/20/95, effective 1/1/96; 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 296-17-875 Table I.

Primary Losses for Selected Claim Values

CLAIM VALUE	PRIMARY LOSS
11,764	11,764
12,163	12,000
13,979	13,000
16,031	14,000
18,368	15,000
24,173	17,000
32,207	19,000
44,063	21,000
63,316	23,000
193,599*	26,953
294,100**	27,745

* Average death value

** Maximum claim value

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010. 01-23-061, § 296-17-875, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-875, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 99-24-055, § 296-17-875, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-875, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-875, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-875, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.04.020. 95-23-080, § 296-17-875, filed 11/20/95, effective 1/1/96; 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. 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 = \$294,100

Average Death Value = \$193,599

Expected Losses	B	W
6,371 & Under	55,490	0.00
6,372 - 12,839	54,935	0.01
12,840 - 19,402	54,380	0.02
19,403 - 26,066	53,825	0.03
26,067 - 32,831	53,270	0.04
32,832 - 39,700	52,716	0.05
39,701 - 46,677	52,161	0.06
46,678 - 53,763	51,606	0.07
53,764 - 60,962	51,051	0.08
60,963 - 68,276	50,496	0.09
68,277 - 75,710	49,941	0.10
75,711 - 83,264	49,386	0.11
83,265 - 90,944	48,831	0.12
90,945 - 98,752	48,276	0.13
98,753 - 106,692	47,721	0.14
106,693 - 114,768	47,167	0.15
114,769 - 122,982	46,612	0.16
122,983 - 131,340	46,057	0.17
131,341 - 139,846	45,502	0.18
139,847 - 148,502	44,947	0.19
148,503 - 157,315	44,392	0.20
157,316 - 166,287	43,837	0.21
166,288 - 175,425	43,282	0.22
175,426 - 184,733	42,727	0.23
184,734 - 194,216	42,172	0.24
194,217 - 203,879	41,618	0.25
203,880 - 213,728	41,063	0.26
213,729 - 223,769	40,508	0.27
223,770 - 234,007	39,953	0.28
234,008 - 244,449	39,398	0.29
244,450 - 255,102	38,843	0.30
255,103 - 265,972	38,288	0.31
265,973 - 277,066	37,733	0.32

Expected Losses			B	W	Expected Losses			B	W
277,067	-	288,391	37,178	0.33	2,062,164	-	2,148,108	4,439	0.92
288,392	-	299,956	36,623	0.34	2,148,109	-	2,239,562	3,884	0.93
299,957	-	311,769	36,069	0.35	2,239,563	-	2,337,077	3,329	0.94
311,770	-	323,837	35,514	0.36	2,337,078	-	2,441,278	2,774	0.95
323,838	-	336,170	34,959	0.37	2,441,279	-	2,552,882	2,220	0.96
336,171	-	348,776	34,404	0.38	2,552,883	-	2,672,712	1,665	0.97
348,777	-	361,667	33,849	0.39	2,672,713	-	2,801,718	1,110	0.98
361,668	-	374,851	33,294	0.40	2,801,719	-	2,940,999	555	0.99
374,852	-	388,339	32,739	0.41	2,941,000 & Over			0	1.00
388,340	-	402,143	32,184	0.42	[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-880, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-880, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 99-24-055, § 296-17-880, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-880, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-880, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-880, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.04.020, 95-23-080, § 296-17-880, filed 11/20/95, effective 1/1/96; 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.]				
402,144	-	416,274	31,629	0.43					
416,275	-	430,744	31,074	0.44					
430,745	-	445,567	30,520	0.45					
445,568	-	460,755	29,965	0.46					
460,756	-	476,324	29,410	0.47					
476,325	-	492,288	28,855	0.48					
492,289	-	508,662	28,300	0.49					
508,663	-	525,464	27,745	0.50					
525,465	-	542,712	27,190	0.51					
542,713	-	560,423	26,635	0.52					
560,424	-	578,617	26,080	0.53					
578,618	-	597,315	25,525	0.54					
597,316	-	616,539	24,971	0.55					
616,540	-	636,312	24,416	0.56					
636,313	-	656,659	23,861	0.57					
656,660	-	677,606	23,306	0.58					
677,607	-	699,180	22,751	0.59					
699,181	-	721,411	22,196	0.60					
721,412	-	744,330	21,641	0.61					
744,331	-	767,970	21,086	0.62					
767,971	-	792,368	20,531	0.63					
792,369	-	817,560	19,976	0.64					
817,561	-	843,587	19,422	0.65					
843,588	-	870,493	18,867	0.66					
870,494	-	898,323	18,312	0.67					
898,324	-	927,127	17,757	0.68					
927,128	-	956,959	17,202	0.69					
956,960	-	987,875	16,647	0.70					
987,876	-	1,019,936	16,092	0.71					
1,019,937	-	1,053,210	15,537	0.72					
1,053,211	-	1,087,766	14,982	0.73					
1,087,767	-	1,123,683	14,427	0.74					
1,123,684	-	1,161,043	13,873	0.75					
1,161,044	-	1,199,936	13,318	0.76					
1,199,937	-	1,240,461	12,763	0.77					
1,240,462	-	1,282,724	12,208	0.78					
1,282,725	-	1,326,840	11,653	0.79					
1,326,841	-	1,372,936	11,098	0.80					
1,372,937	-	1,421,151	10,543	0.81					
1,421,152	-	1,471,635	9,988	0.82					
1,471,636	-	1,524,555	9,433	0.83					
1,524,556	-	1,580,093	8,878	0.84					
1,580,094	-	1,638,450	8,323	0.85					
1,638,451	-	1,699,850	7,769	0.86					
1,699,851	-	1,764,539	7,214	0.87					
1,764,540	-	1,832,791	6,659	0.88					
1,832,792	-	1,904,911	6,104	0.89					
1,904,912	-	1,981,241	5,549	0.90					
1,981,242	-	2,062,163	4,994	0.91					

WAC 296-17-885 Table III.

Expected Loss Rates and D-Ratios
for Indicated Fiscal Year

Expected Loss Rates in Dollars Per Worker Hour

Class	1998	1999	2000	D-Ratio
0101	1.2461	1.1315	0.9796	0.418
0103	1.4722	1.3405	1.1652	0.467
0104	0.8899	0.8086	0.7007	0.434
0105	1.1262	1.0295	0.9002	0.521
0107	1.0286	0.9364	0.8136	0.446
0108	0.8899	0.8086	0.7007	0.434
0112	0.5818	0.5313	0.4637	0.462
0201	2.1323	1.9361	1.6762	0.399
0202	2.8174	2.5608	2.2191	0.373
0210	1.0246	0.9296	0.8038	0.422
0212	0.8184	0.7444	0.6459	0.416
0214	1.0605	0.9640	0.8361	0.454
0217	0.9489	0.8632	0.7493	0.478
0219	0.9697	0.8836	0.7686	0.476
0301	0.4781	0.4383	0.3851	0.545
0302	1.6489	1.4900	1.2814	0.390

Workers' Compensation Insurance

296-17-885

Class	1998	1999	2000	D-Ratio	Class	1998	1999	2000	D-Ratio
0303	1.6613	1.5068	1.3023	0.410	1802	0.5022	0.4599	0.4032	0.535
0306	0.8951	0.8121	0.7029	0.455	2002	0.6154	0.5654	0.4985	0.567
0307	0.7192	0.6559	0.5719	0.486	2004	0.6083	0.5591	0.4932	0.601
0308	0.4515	0.4146	0.3651	0.575	2007	0.3990	0.3655	0.3205	0.506
0403	1.3332	1.2216	1.0722	0.539	2008	0.2639	0.2419	0.2126	0.513
0502	1.2402	1.1261	0.9749	0.447	2009	0.2855	0.2636	0.2343	0.604
0504	1.1410	1.0403	0.9055	0.436	2101	0.5808	0.5326	0.4675	0.479
0506	3.7620	3.4268	2.9789	0.412	2102	0.4140	0.3808	0.3361	0.562
0507	2.7630	2.5172	2.1891	0.436	2104	0.2463	0.2273	0.2019	0.618
0508	2.0211	1.8311	1.5805	0.378	2105	0.5795	0.5311	0.4664	0.578
0509	1.4285	1.2921	1.1129	0.404	2106	0.3178	0.2919	0.2571	0.538
0510	1.3374	1.2185	1.0601	0.447	2201	0.2230	0.2046	0.1798	0.526
0511	1.2978	1.1814	1.0270	0.474	2202	0.5219	0.4780	0.4192	0.544
0512	1.0420	0.9494	0.8265	0.516	2203	0.3649	0.3364	0.2981	0.604
0513	0.6631	0.6036	0.5247	0.494	2204	0.2230	0.2046	0.1798	0.526
0514	1.2024	1.1002	0.9639	0.537	2401	0.3569	0.3278	0.2887	0.584
0516	1.3374	1.2185	1.0601	0.447	2903	0.5386	0.4957	0.4381	0.594
0517	1.4362	1.3118	1.1452	0.484	2904	0.6377	0.5855	0.5152	0.528
0518	1.4723	1.3375	1.1587	0.414	2905	0.4587	0.4222	0.3731	0.608
0519	1.4606	1.3328	1.1623	0.455	2906	0.3109	0.2852	0.2508	0.561
0521	0.7635	0.6957	0.6051	0.430	2907	0.4513	0.4145	0.3653	0.557
0601	0.4884	0.4457	0.3890	0.527	2908	0.8146	0.7457	0.6535	0.513
0602	0.4712	0.4298	0.3749	0.587	2909	0.3283	0.3018	0.2663	0.547
0603	0.8275	0.7511	0.6502	0.435	3101	0.6741	0.6149	0.5359	0.463
0604	0.8072	0.7406	0.6508	0.501	3102	0.2203	0.2023	0.1782	0.563
0606	0.3379	0.3109	0.2748	0.583	3103	0.5023	0.4601	0.4033	0.452
0607	0.3402	0.3115	0.2732	0.538	3104	0.5179	0.4726	0.4124	0.485
0608	0.2535	0.2321	0.2036	0.544	3105	0.6811	0.6256	0.5510	0.594
0701	1.6935	1.5261	1.3076	0.356	3303	0.2901	0.2667	0.2355	0.564
0803	0.3740	0.3423	0.3002	0.574	3304	0.5048	0.4650	0.4111	0.578
0901	1.4723	1.3375	1.1587	0.414	3309	0.3570	0.3286	0.2904	0.597
1002	0.8501	0.7777	0.6807	0.507	3402	0.3903	0.3578	0.3143	0.556
1003	0.7653	0.7021	0.6169	0.493	3403	0.1679	0.1537	0.1349	0.512
1004	0.4390	0.4004	0.3494	0.512	3404	0.4263	0.3917	0.3452	0.574
1005	5.5246	5.0174	4.3417	0.409	3405	0.2255	0.2069	0.1819	0.573
1007	0.2813	0.2568	0.2242	0.530	3406	0.1955	0.1798	0.1586	0.576
1101	0.5385	0.4934	0.4332	0.549	3407	0.4733	0.4323	0.3777	0.527
1102	1.0660	0.9707	0.8437	0.466	3408	0.1279	0.1173	0.1029	0.615
1103	0.8441	0.7720	0.6749	0.450	3409	0.1046	0.0964	0.0852	0.624
1104	0.3939	0.3630	0.3213	0.593	3410	0.2025	0.1869	0.1657	0.593
1105	0.8502	0.7780	0.6808	0.456	3411	0.3680	0.3369	0.2953	0.525
1106	0.3153	0.2909	0.2578	0.523	3412	0.4195	0.3835	0.3352	0.491
1108	0.4567	0.4192	0.3689	0.562	3413	0.5169	0.4728	0.4142	0.544
1109	0.9482	0.8697	0.7641	0.496	3414	0.4490	0.4110	0.3604	0.527
1301	0.4750	0.4332	0.3775	0.602	3415	0.6319	0.5788	0.5072	0.481
1303	0.1668	0.1529	0.1344	0.602	3501	0.7907	0.7237	0.6332	0.484
1304	0.0216	0.0198	0.0174	0.543	3503	0.2504	0.2316	0.2060	0.599
1305	0.2746	0.2520	0.2219	0.536	3506	0.8795	0.7974	0.6893	0.463
1401	0.5113	0.4695	0.4132	0.520	3509	0.3487	0.3211	0.2839	0.634
1404	0.4735	0.4347	0.3826	0.545	3510	0.3183	0.2928	0.2584	0.572
1405	0.3381	0.3103	0.2731	0.563	3511	0.5610	0.5144	0.4520	0.531
1407	0.4735	0.4347	0.3826	0.545	3512	0.3234	0.2977	0.2631	0.598
1501	0.4590	0.4191	0.3660	0.544	3513	0.4095	0.3766	0.3323	0.486
1507	0.4310	0.3942	0.3451	0.517	3602	0.1001	0.0922	0.0817	0.632
1701	0.7002	0.6389	0.5571	0.513	3603	0.4474	0.4107	0.3614	0.540
1702	1.5957	1.4480	1.2525	0.395	3604	0.8778	0.8072	0.7121	0.542
1703	0.5539	0.5017	0.4324	0.316	3605	0.4180	0.3823	0.3346	0.547
1704	0.7002	0.6389	0.5571	0.513	3701	0.2203	0.2023	0.1782	0.563
1801	0.5790	0.5291	0.4625	0.453	3702	0.3425	0.3151	0.2784	0.615

Class	1998	1999	2000	D-Ratio	Class	1998	1999	2000	D-Ratio
3708	0.4503	0.4124	0.3616	0.527	5109	0.5432	0.4960	0.4333	0.511
3802	0.1476	0.1359	0.1201	0.607	5201	0.3144	0.2880	0.2527	0.549
3808	0.3875	0.3548	0.3111	0.492	5204	0.7663	0.7022	0.6163	0.505
3901	0.1378	0.1275	0.1137	0.637	5206	0.3212	0.2935	0.2565	0.486
3902	0.3448	0.3174	0.2803	0.595	5207	0.1534	0.1415	0.1256	0.649
3903	1.0105	0.9315	0.8248	0.537	5208	0.7420	0.6800	0.5971	0.505
3905	0.1378	0.1275	0.1137	0.637	5209	0.6804	0.6230	0.5463	0.524
3906	0.4175	0.3838	0.3383	0.552	5301	0.0281	0.0259	0.0229	0.582
3909	0.1997	0.1840	0.1630	0.648	5305	0.0484	0.0446	0.0395	0.662
4002	0.9391	0.8559	0.7451	0.543	5306	0.0443	0.0407	0.0359	0.624
4101	0.2401	0.2201	0.1935	0.566	5307	0.3470	0.3175	0.2781	0.571
4103	0.3092	0.2859	0.2547	0.672	6103	0.0672	0.0622	0.0553	0.617
4107	0.1150	0.1054	0.0927	0.563	6104	0.2932	0.2698	0.2382	0.588
4108	0.1371	0.1259	0.1109	0.547	6105	0.2097	0.1918	0.1682	0.516
4109	0.2033	0.1867	0.1645	0.557	6107	0.1044	0.0967	0.0864	0.611
4201	0.4749	0.4318	0.3747	0.516	6108	0.3490	0.3224	0.2864	0.609
4301	0.6547	0.6024	0.5320	0.548	6109	0.0680	0.0624	0.0549	0.553
4302	0.4837	0.4431	0.3887	0.539	6110	0.3537	0.3252	0.2869	0.579
4304	0.7325	0.6719	0.5903	0.530	6201	0.2876	0.2625	0.2291	0.479
4305	0.9071	0.8264	0.7194	0.552	6202	0.5639	0.5194	0.4589	0.507
4401	0.3509	0.3226	0.2845	0.478	6203	0.0744	0.0689	0.0616	0.654
4402	0.5926	0.5437	0.4784	0.551	6204	0.1344	0.1237	0.1094	0.579
4404	0.3314	0.3050	0.2694	0.533	6205	0.2003	0.1843	0.1629	0.573
4501	0.1492	0.1372	0.1211	0.608	6206	0.1788	0.1642	0.1447	0.594
4502	0.0405	0.0372	0.0329	0.551	6207	1.1615	1.0762	0.9597	0.568
4504	0.0897	0.0829	0.0736	0.620	6208	0.2087	0.1935	0.1727	0.577
4601	0.5732	0.5265	0.4634	0.512	6209	0.2221	0.2051	0.1821	0.578
4802	0.1897	0.1744	0.1541	0.549	6301	0.1226	0.1117	0.0973	0.437
4803	0.1931	0.1781	0.1578	0.578	6302	0.1453	0.1338	0.1183	0.539
4804	0.5253	0.4823	0.4247	0.568	6303	0.0596	0.0548	0.0483	0.551
4805	0.2336	0.2154	0.1909	0.584	6304	0.2318	0.2145	0.1912	0.622
4806	0.0451	0.0415	0.0367	0.535	6305	0.0805	0.0744	0.0662	0.610
4808	0.3800	0.3487	0.3066	0.530	6306	0.2226	0.2046	0.1804	0.596
4809	0.2671	0.2458	0.2173	0.575	6308	0.0470	0.0433	0.0383	0.603
4810	0.1216	0.1125	0.0999	0.596	6309	0.1406	0.1297	0.1150	0.603
4811	0.2066	0.1905	0.1689	0.607	6402	0.2380	0.2191	0.1937	0.636
4812	0.2989	0.2744	0.2417	0.584	6403	0.1324	0.1223	0.1087	0.598
4813	0.1457	0.1340	0.1182	0.536	6404	0.1598	0.1477	0.1313	0.621
4900	0.3212	0.2935	0.2565	0.486	6405	0.4880	0.4475	0.3931	0.541
4901	0.0606	0.0555	0.0486	0.503	6406	0.0719	0.0663	0.0589	0.613
4902	0.0760	0.0697	0.0612	0.588	6407	0.2155	0.1985	0.1755	0.573
4903	0.0674	0.0617	0.0542	0.563	6408	0.2850	0.2618	0.2309	0.604
4904	0.0247	0.0228	0.0201	0.596	6409	0.5169	0.4728	0.4142	0.544
4905	0.2890	0.2668	0.2369	0.589	6410	0.2049	0.1881	0.1657	0.506
4906	0.0803	0.0736	0.0648	0.587	6501	0.1139	0.1047	0.0923	0.652
4907	0.0466	0.0428	0.0378	0.546	6502	0.0233	0.0216	0.0191	0.605
4908	0.1206	0.1129	0.1023	0.672	6503	0.0615	0.0562	0.0490	0.529
4909	0.0512	0.0478	0.0432	0.624	6504	0.3007	0.2785	0.2484	0.634
4910	0.3479	0.3197	0.2817	0.548	6505	0.0895	0.0827	0.0737	0.579
5001	4.2539	3.8570	3.3306	0.395	6506	0.0771	0.0712	0.0631	0.605
5002	0.4713	0.4314	0.3781	0.570	6509	0.2751	0.2539	0.2253	0.591
5003	1.3275	1.2046	1.0417	0.419	6510	0.3349	0.3063	0.2677	0.451
5004	1.0357	0.9481	0.8302	0.458	6511	0.2759	0.2549	0.2263	0.589
5005	0.6543	0.5949	0.5157	0.463	6601	0.1574	0.1452	0.1288	0.604
5006	1.4912	1.3556	1.1750	0.395	6602	0.3702	0.3403	0.3001	0.556
5101	0.8211	0.7526	0.6613	0.595	6603	0.3007	0.2762	0.2433	0.550
5103	0.6634	0.6120	0.5427	0.610	6604	0.0554	0.0512	0.0454	0.553
5106	0.6634	0.6120	0.5427	0.610	6605	0.2590	0.2405	0.2156	0.662
5108	0.7358	0.6763	0.5970	0.621	6607	0.1670	0.1537	0.1359	0.564

Class	1998	1999	2000	D-Ratio
6608	0.4469	0.4060	0.3518	0.430
6620	2.8266	2.5916	2.2804	0.663
6704	0.1097	0.1009	0.0893	0.596
6705	0.7042	0.6510	0.5793	0.653
6706	0.3354	0.3101	0.2758	0.590
6707	1.6167	1.4916	1.3233	0.635
6708	6.6154	6.1343	5.4665	0.444
6709	0.2272	0.2100	0.1867	0.625
6801	0.3391	0.3101	0.2716	0.589
6802	0.3776	0.3484	0.3094	0.620
6803	0.6588	0.6013	0.5243	0.394
6804	0.2115	0.1944	0.1715	0.583
6809	4.9067	4.5214	4.0025	0.610
6901	0.0431	0.0412	0.0384	0.765
6902	0.7534	0.6845	0.5927	0.406
6903	6.1013	5.5359	4.7880	0.297
6904	0.2782	0.2535	0.2207	0.637
6905	0.3047	0.2787	0.2442	0.596
6906	0.1335	0.1276	0.1189	0.701
6907	0.8993	0.8248	0.7251	0.565
6908	0.4613	0.4232	0.3722	0.611
6909	0.0903	0.0831	0.0735	0.586
7100	0.0266	0.0245	0.0216	0.489
7101	0.0261	0.0241	0.0211	0.487
7102	3.4651	3.2282	2.9015	0.593
7103	0.3493	0.3189	0.2785	0.538
7104	0.0240	0.0221	0.0196	0.616
7105	0.0223	0.0207	0.0183	0.650
7106	0.1397	0.1288	0.1141	0.599
7107	0.2306	0.2128	0.1889	0.612
7108	0.1947	0.1803	0.1608	0.613
7109	0.1286	0.1187	0.1054	0.644
7110	0.3476	0.3180	0.2783	0.490
7111	0.3468	0.3181	0.2798	0.571
7112	0.5378	0.4940	0.4351	0.569
7113	0.4250	0.3916	0.3469	0.608
7114	0.5641	0.5223	0.4661	0.683
7115	0.4685	0.4310	0.3808	0.625
7116	0.4603	0.4235	0.3738	0.561
7117	0.9221	0.8471	0.7469	0.598
7118	0.8553	0.7854	0.6922	0.593
7119	1.4060	1.2895	1.1334	0.585
7120	4.8822	4.4822	3.9453	0.521
7121	4.5635	4.1854	3.6781	0.522
7201	0.9989	0.9107	0.7933	0.530
7202	0.0309	0.0283	0.0248	0.519
7203	0.1102	0.1021	0.0910	0.586
7204	0.0000	0.0000	0.0000	1.000
7301	0.4409	0.4047	0.3557	0.489
7302	0.6465	0.5934	0.5220	0.553
7307	0.4753	0.4377	0.3868	0.570
7308	0.2314	0.2149	0.1925	0.629
7309	0.2272	0.2100	0.1867	0.625

**Expected Loss Rates in Dollars Per Sq. Ft.
of Wallboard Installed**

Class	1998	1999	2000	D-Ratio
0524	0.0162	0.0148	0.0127	0.466
0526	0.0081	0.0073	0.0063	0.442
0527	0.0007	0.0007	0.0005	0.365
0528	0.0021	0.0019	0.0016	0.436
0529	0.0012	0.0011	0.0010	0.402
0530	0.0230	0.0208	0.0179	0.377
0531	0.0105	0.0095	0.0082	0.403
0532	0.0010	0.0009	0.0008	0.413
0533	0.0030	0.0027	0.0024	0.414
0534	0.0021	0.0019	0.0016	0.407

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-885, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-885, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.16.035, 51.04.020, 00-14-052, § 296-17-885, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 99-24-055, § 296-17-885, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-885, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-885, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-885, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.16.035, 96-12-039, § 296-17-885, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.04.020, 95-23-080, § 296-17-885, filed 11/20/95, effective 1/1/96; 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
2,784 & Lower	0.90
2,785 - 2,978	0.89
2,979 - 3,189	0.88
3,190 - 3,417	0.87
3,418 - 3,664	0.86
3,665 - 3,932	0.85
3,933 - 4,224	0.84
4,225 - 4,541	0.83
4,542 - 4,887	0.82
4,888 - 5,263	0.81
5,264 - 5,674	0.80
5,675 - 6,122	0.79
6,123 - 6,612	0.78
6,613 - 7,149	0.77
7,150 - 7,737	0.76
7,738 - 8,383	0.75
8,384 - 9,092	0.74
9,093 - 9,872	0.73
9,873 - 10,732	0.72
10,733 - 11,680	0.71
11,681 - 12,727	0.70
12,728 - 13,885	0.69
13,886 - 15,168	0.68
15,169 - 16,592	0.67
16,593 - 18,173	0.66
18,174 - 19,934	0.65
19,935 - 21,896	0.64
21,897 - 24,088	0.63
24,089 - 26,540	0.62
26,541 - 29,288	0.61
29,289 & Higher	0.60

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-890, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-890, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073. 99-24-055, § 296-17-890, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-890, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-890, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-890, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.04.020, 95-23-080, § 296-17-890, filed 11/20/95, effective 1/1/96; 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.

Class	Base Rates Effective January 1, 2002	
	Accident Fund	Medical Aid Fund
0101	1.3447	0.4491
0103	1.5243	0.5809
0104	0.9524	0.3271
0105	1.0887	0.5027
0107	1.0675	0.4024
0108	0.9524	0.3271
0112	0.5714	0.2511
0201	2.2980	0.7663
0202	2.9870	1.0432
0210	1.1223	0.3578
0212	0.8593	0.3113
0214	1.1269	0.3968
0217	1.0005	0.3626
0219	0.9935	0.3908
0301	0.4356	0.2324
0302	1.9150	0.4954
0303	1.8274	0.5733
0306	0.9764	0.3168
0307	0.7203	0.3009
0308	0.3999	0.2284
0403	1.2293	0.6373
0502	1.3445	0.4454
0504	1.1535	0.4672
0506	3.8554	1.4972
0507	2.8276	1.1071
0508	2.2515	0.6720
0509	1.6359	0.4465
0510	1.3656	0.5388
0511	1.3458	0.5107
0512	1.0682	0.4219
0513	0.6907	0.2600
0514	1.1380	0.5539
0516	1.3656	0.5388
0517	1.4086	0.6232
0518	1.5761	0.5384
0519	1.4496	0.6178
0521	0.7789	0.3072
0601	0.4865	0.2078
0602	0.4763	0.1981
0603	0.8985	0.2948
0604	0.7257	0.3968
0606	0.2856	0.1805
0607	0.3183	0.1592
0608	0.2362	0.1194
0701	2.0413	0.4516
0803	0.3529	0.1742
0901	1.5761	0.5384
1002	0.8093	0.3870
1003	0.6886	0.3757

Base Rates Effective January 1, 2002			Base Rates Effective January 1, 2002		
Class	Accident Fund	Medical Aid Fund	Class	Accident Fund	Medical Aid Fund
1004	0.4384	0.1856	3309	0.3010	0.1918
1005	5.9734	1.9847	3402	0.3562	0.1894
1007	0.2783	0.1211	3403	0.1548	0.0798
1101	0.4961	0.2581	3404	0.3726	0.2191
1102	1.1037	0.4208	3405	0.2028	0.1117
1103	0.8069	0.3791	3406	0.1686	0.1019
1104	0.3226	0.2179	3407	0.4631	0.2074
1105	0.8040	0.3880	3408	0.1191	0.0613
1106	0.2496	0.1789	3409	0.0878	0.0567
1108	0.4083	0.2278	3410	0.1610	0.1155
1109	0.8551	0.4639	3411	0.3454	0.1713
1301	0.4857	0.1970	3412	0.4046	0.1867
1303	0.1530	0.0809	3413	0.4924	0.2363
1304	0.0189	0.0109	3414	0.4199	0.2098
1305	0.2425	0.1384	3415	0.5870	0.2967
1401	0.4521	0.2574	3501	0.7506	0.3609
1404	0.4209	0.2375	3503	0.1883	0.1503
1405	0.3007	0.1696	3506	0.9746	0.3014
1407	0.4209	0.2375	3509	0.2929	0.1889
1501	0.4536	0.1987	3510	0.2734	0.1668
1507	0.4110	0.1960	3511	0.5090	0.2734
1701	0.7009	0.2954	3512	0.2716	0.1741
1702	1.7366	0.5617	3513	0.3467	0.2154
1703	0.6200	0.1800	3602	0.0822	0.0554
1704	0.7009	0.2954	3603	0.3976	0.2242
1801	0.5575	0.2564	3604	0.7515	0.4593
1802	0.4708	0.2350	3605	0.4008	0.1895
2002	0.5351	0.3175	3701	0.1937	0.1120
2004	0.5279	0.3162	3702	0.2918	0.1820
2007	0.3700	0.1886	3708	0.4208	0.2110
2008	0.2393	0.1283	3802	0.1242	0.0796
2009	0.2205	0.1671	3808	0.3607	0.1814
2101	0.5286	0.2806	3901	0.1026	0.0837
2102	0.3536	0.2180	3902	0.2914	0.1846
2104	0.1927	0.1428	3903	0.8160	0.5627
2105	0.5340	0.2790	3905	0.1026	0.0837
2106	0.2787	0.1617	3906	0.3622	0.2159
2201	0.2006	0.1099	3909	0.1650	0.1103
2202	0.4868	0.2457	4002	0.9639	0.3821
2203	0.2962	0.2039	4101	0.2182	0.1175
2204	0.2006	0.1099	4103	0.2337	0.1861
2401	0.3147	0.1818	4107	0.1043	0.0562
2903	0.4529	0.2898	4108	0.1198	0.0700
2904	0.5649	0.3205	4109	0.1779	0.1040
2905	0.3868	0.2468	4201	0.5058	0.1794
2906	0.2810	0.1529	4301	0.5527	0.3486
2907	0.3950	0.2309	4302	0.4490	0.2292
2908	0.7648	0.3785	4304	0.6640	0.3579
2909	0.2807	0.1722	4305	0.9341	0.3670
3101	0.6760	0.2811	4401	0.2993	0.1829
3102	0.1937	0.1120	4402	0.5302	0.2947
3103	0.4655	0.2356	4404	0.2786	0.1769
3104	0.5133	0.2208	4501	0.1281	0.0786
3105	0.6018	0.3465	4502	0.0341	0.0216
3303	0.2480	0.1525	4504	0.0700	0.0521
3304	0.4194	0.2750	4601	0.5040	0.2901

Base Rates Effective January 1, 2002			Base Rates Effective January 1, 2002		
Class	Accident Fund	Medical Aid Fund	Class	Accident Fund	Medical Aid Fund
4802	0.1614	0.1001	6207	0.8313	0.7236
4803	0.1551	0.1087	6208	0.1475	0.1313
4804	0.4654	0.2654	6209	0.1725	0.1289
4805	0.1887	0.1308	6301	0.1236	0.0503
4806	0.0369	0.0247	6302	0.1201	0.0791
4808	0.3397	0.1889	6303	0.0504	0.0316
4809	0.2233	0.1441	6304	0.1707	0.1417
4810	0.0925	0.0722	6305	0.0600	0.0486
4811	0.1669	0.1159	6306	0.1937	0.1152
4812	0.2640	0.1517	6308	0.0395	0.0254
4813	0.1244	0.0765	6309	0.1122	0.0798
4900	0.3111	0.1420	6402	0.2005	0.1286
4901	0.0573	0.0279	6403	0.1025	0.0773
4902	0.0699	0.0368	6404	0.1226	0.0944
4903	0.0626	0.0319	6405	0.4440	0.2374
4904	0.0205	0.0136	6406	0.0561	0.0416
4905	0.2248	0.1680	6407	0.1783	0.1176
4906	0.0726	0.0396	6408	0.2490	0.1469
4907	0.0398	0.0244	6409	0.4924	0.2363
4908	0.0622	0.0923	6410	0.1795	0.1037
4909	0.0280	0.0379	6501	0.0998	0.0591
4910	0.3029	0.1789	6502	0.0188	0.0131
5001	4.7105	1.4436	6503	0.0613	0.0262
5002	0.4451	0.2191	6504	0.2179	0.1867
5003	1.4514	0.4656	6505	0.0662	0.0542
5004	0.9719	0.4776	6506	0.0605	0.0445
5005	0.6978	0.2443	6509	0.2176	0.1574
5006	1.5815	0.5548	6510	0.3208	0.1497
5101	0.7541	0.3979	6511	0.2134	0.1612
5103	0.5302	0.3767	6601	0.1256	0.0893
5106	0.5302	0.3767	6602	0.3194	0.1926
5108	0.6367	0.3845	6603	0.2631	0.1535
5109	0.5331	0.2360	6604	0.0440	0.0314
5201	0.2925	0.1486	6605	0.1735	0.1709
5204	0.7027	0.3671	6607	0.1394	0.0902
5206	0.3111	0.1420	6608	0.4789	0.1636
5207	0.1215	0.0883	6614	792.0000*	422.0000*
5208	0.6773	0.3574	6615	292.0000*	157.0000*
5209	0.6343	0.3195	6616	261.0000*	133.0000*
5301	0.0238	0.0150	6617	96.0000*	48.0000*
5305	0.0404	0.0265	6618	99.0000*	50.0000*
5306	0.0380	0.0234	6620	2.5835	1.3909
5307	0.3311	0.1591	6704	0.0922	0.0590
6103	0.0499	0.0407	6705	0.5356	0.4206
6104	0.2494	0.1557	6706	0.2549	0.1989
6105	0.1968	0.0973	6707	1.2905	0.9222
6107	0.0730	0.0662	6708	4.6330	4.1378
6108	0.2701	0.2041	6709	0.1743	0.1344
6109	0.0609	0.0338	6801	0.3256	0.1540
6110	0.3049	0.1847	6802	0.2970	0.2175
6201	0.2847	0.1225	6803	0.6481	0.2796
6202	0.4656	0.3065	6804	0.1831	0.1098
6203	0.0519	0.0476	6809	4.0319	2.7122
6204	0.1115	0.0730	6901	0.0000	0.0451
6205	0.1693	0.1070	6902	0.8083	0.2745
6206	0.1578	0.0909	6903	6.5754	2.1405

Class	Base Rates Effective January 1, 2002	
	Accident Fund	Medical Aid Fund
6904	0.2885	0.1131
6905	0.2917	0.1394
6906	0.0000	0.1394
6907	0.8149	0.4418
6908	0.4176	0.2284
6909	0.0746	0.0493
7100	0.0228	0.0138
7101	0.0230	0.0132
7102	2.1275	2.4076
7103	0.3446	0.1515
7104	0.0194	0.0134
7105	0.0176	0.0129
7106	0.1137	0.0777
7107	0.1827	0.1321
7108	0.1412	0.1205
7109	0.1009	0.0745
7110	0.3313	0.1576
7111	0.3129	0.1715
7112	0.4737	0.2734
7113	0.3480	0.2354
7114	0.4120	0.3499
7115	0.3981	0.2502
7116	0.3917	0.2437
7117	0.8056	0.4754
7118	0.7528	0.4362
7119	1.2801	0.6890
7120	4.3112	2.4570
7121	4.1232	2.2341
7201	1.0168	0.4113
7202	0.0288	0.0145
7203	0.0793	0.0685
7204	0.0000	0.0000
7301	0.3941	0.2181
7302	0.5774	0.3226
7307	0.3974	0.2569
7308	0.1550	0.1524
7309	0.1743	0.1344

* These rates are calculated on a per license basis for parimutuel race tracks and are base rated.

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-895, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-895, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.16.035, 51.04.020, 00-14-052, § 296-17-895, filed 7/1/00, effective 7/1/00. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 99-24-055, § 296-17-895, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-895, filed 12/1/98, effective 1/1/99. Statutory Authority: RCW 51.16.035, 98-18-042, § 296-17-895, filed 8/28/98, effective 10/1/98. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 97-24-062, § 296-17-895, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-895, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.16.035, 96-12-039, § 296-17-895, filed 5/31/96, effective 7/1/96. Statutory Authority: RCW 51.16.035 and 51.32.073, 96-06-025, § 296-17-895, filed 2/28/96, effective 4/1/96. Statutory Authority: RCW 51.04.020, 95-23-080, § 296-17-895, filed 11/20/95, effective 1/1/96; 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, effective 7/1/88; 88-06-047 (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.]

tive 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, effective 7/1/88; 88-06-047 (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 296-17-89502 Industrial insurance accident fund, medical aid and supplemental pension rates by class of industry for nonhourly rated classifications. The base rates as set forth below are for classifications whose premium rates are based on units other than hours worked.

Base Rates Effective
January 1, 2002

Class	Accident Fund	Medical Aid Fund	Supplemental Pension Fund
0524	0.0179	0.0057	0.0005
0526	0.0088	0.0029	0.0005
0527	0.0008	0.0002	0.0001
0528	0.0022	0.0008	0.0001
0529	0.0014	0.0004	0.0001
0530	0.0263	0.0071	0.0005
0531	0.0119	0.0034	0.0005
0532	0.0011	0.0003	0.0001
0533	0.0032	0.0011	0.0001
0534	0.0023	0.0007	0.0001
0540	0.0188	0.0060	0.0006
0541	0.0092	0.0030	0.0006
0550	0.0275	0.0075	0.0006
0551	0.0125	0.0036	0.0006

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010; 01-23-061, § 296-17-89502, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-89502, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 99-24-055, § 296-17-89502, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-89502, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-89502, filed 12/1/97, effective 1/1/98;

97-12-011, § 296-17-89502, filed 5/27/97, effective 7/1/97; 97-06-007, § 296-17-89502, filed 2/24/97, effective 4/1/97.]

WAC 296-17-90409 I understand that there are specific prerequisites that an organization must meet to sponsor a new retrospective rating group plan. Can you tell me what these requirements are? Yes. Before we can consider an organization's request to sponsor a new retrospective rating group plan they must meet all the following requirements:

(1) The sponsoring organization must have been in existence for at least four years prior to sponsoring a retrospective rating group.

(a) To validate this, the sponsoring organization must provide the department with copies of its articles of incorporation, bylaws and marketing/membership applications or similar material, accompanied with an affidavit certifying that the documents are true and the information contained in the documents is accurate as of the date of submittal.

(b) The department will verify this information through contacts with various state, local and federal agencies and other businesses.

(2) The sponsoring organization must have been formed for purposes other than that of obtaining or offering insurance coverage or insurance services described in WAC 296-17-90408.

(3) Employer members of the proposed retrospective rating group must be dues paying members of the organization. We recognize that some organizations may be funded through member donations and not dues. The intent of this requirement is to ensure that the members of the organization are current members as opposed to potential members. Where an organization's members do not pay dues the organization must provide a list of its current members and a written explanation of how member contributions are determined.

(a) An organization seeking to sponsor a group retrospective rating plan must submit a list of its current members that want to participate in the organization's group plan to the department. The membership list must include the effective date of membership for each proposed member and an affidavit signed by an officer of the sponsoring organization certifying the list to be true and accurate as of the date of submittal.

(b) Each employer member who wants to participate in the organization's retrospective rating group plan must have an industrial insurance account in good standing with the department.

(c) Each employer member who wants to participate in the proposed sponsoring organization's retrospective rating group must provide us with a written request/release. This is to be done on a form provided by the sponsoring organization and approved by the department. Sample forms can be found in Appendix A of this manual. Completion and submission of this application to the department signifies the employer's desire to participate in the organization's retrospective rating group if it is approved. The proposed retrospective rating group membership list must be submitted with the group application of the organization and the other material listed in this section.

(d) All employers in the retrospective rating group must be members of the sponsoring entity.

(e) Fifty percent of the members of the proposed retrospective rating group must have been members of the sponsoring organization for one year prior to the group's entrance into the retrospective rating program. We will verify this from the membership information provided to the department in (a) of this subsection.

(4) The sponsoring organization must have an industrial insurance account and the account must be in good standing at all times, including the application process and the coverage and adjustment periods.

(5) The initial premium level of the proposed retrospective rating group must be at least one million five hundred thousand dollars. This will be based on the standard premium of the proposed group members' most current fiscal year (four quarters) of reporting.

(6) The requirements contained in this rule are in addition to any other requirements contained in the retrospective rating manual such as those found in WAC 296-17-90412(2) applicable to an annual safety report and WAC 296-17-90421(2) applicable to selection of an industry group by the sponsoring organization.

[Statutory Authority: RCW 51.18.010(2). 01-23-058, § 296-17-90409, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90409, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90421 Is there a requirement for employer members of an organization to be engaged in substantially similar businesses to participate in the organization's group plan? (1) Yes, Washington law (RCW 51.18.040) requires all retrospective rating groups to be made up of employer members who are engaged in substantially similar business operations when the nature of their services or work activities of employees is considered.

(2) The first step in this process is for the sponsoring organization to select the single retrospective rating group it wishes to sponsor. This is done at the time the application for group is submitted to the department from the broad industry or business category from the table below:

Industry/business group table

- Agriculture and related services.
- Automotive, truck and boat, manufacturing, sales, repair and related services.
- Construction and related services.
- Distillation, chemicals, food and related services.
- Entertainment, hospitality and related services.
- Facilities, property management, maintenance and related services.
- Government, utilities, schools, healthcare and related services.
- Grocery stores, grocery distribution centers, bakeries, milk and dairy products processing, delivery to customers and related services.
- Healthcare, pharmaceutical, laboratories and related services.
- Logging and wood products manufacturing and related services.
- Manufacturing, processing, mining, quarrying, and related services.

- Retail and wholesale stores and professional services such as banks and law firms and related services.
- Temporary help and related services.
- Transportation, recycle, warehousing, facility maintenance and related services.

The intent of this process is to ensure that the homogeneity requirement of RCW 51.18.040 is met.

Example: An organization that was formed to advance the interests of apple growers would select the agriculture and related services business/industry group plan. This organization could sponsor a single group for all its grower members or could offer different performance groups for its grower members.

(3) To simplify administration and keep the administrative costs associated with devising a different classification system for the retrospective rating plan to a minimum, the retrospective rating program follows the same classification procedure established by the department to assign workers' compensation insurance classifications to an employer (WAC 296-17-31012). This procedure requires employers to be assigned a classification or series of classifications based on the nature of their business, not the occupations or duties of the workers they employ. Only those members whose business undertakings are substantially similar to the industry/business group selected by the organization will be permitted to participate. This grouping technique is fundamental to workers' compensation insurance and is referred to as "homogeneity of risk."

Example: Having selected the agriculture and related services business/industry grouping the department would verify that the employer members of the apple grower organization were either apple growers or were involved in a related service such as an apple processing operation owned by the grower.

[Statutory Authority: RCW 51.18.010(2). 01-23-058, § 296-17-90421, filed 11/20/01, effective 1/1/02. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90421, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90447 How are third-party, second injury, and occupational disease claims handled for retrospective premium calculations? (1) Third-party claims.

(a) For claims with injury dates prior to July 1, 1996, a potential claim cost recovery from action against a third party, either by the injured worker or by the department, shall not be considered in the evaluation of incurred losses until the third party action has been completed.

(b) For claims with injury dates on or after July 1, 1996, if the department determines that there is a reasonable potential of recovery from an action against a third party, the incurred loss value of the claim shall be reduced by fifty percent until the third-party action has been completed. This valuation shall not be retroactively adjusted, regardless of the final outcome of the third-party action. After a third-party recovery is made, the actual percentage recovery shall be applied to the incurred losses used in future retrospective premium calculations.

(c) For third-party actions completed on or after July 1, 1996, the claim shall be credited with the department's gross share of the recovery, before deducting attorney fees and costs.

(2) **Second injury claims.** The incurred losses of any claim that becomes eligible for second injury relief under the provisions of RCW 51.16.120 shall be reduced by the percentage of relief granted.

(3) **Occupational disease claims.** When a claim results from a worker's exposure to an occupational disease hazard, the "date of injury" for retrospective rating purposes shall be the last date of employment involving the exposure to the hazard. In the event it is determined that the last exposure to an occupational disease hazard involves a state fund insured employer the department will prorate the cost of the claim to all state fund employers that exposed the worker to the occupational disease hazard that contributed to the injury. The date of last employment involving exposure to the occupational disease hazard shall be used for the injury date for retrospective premium calculations. Any employer charged with ten percent or more of an occupational disease claim as provided in our experience rating plan (chapter 296-17 WAC) will have their prorated share of the incurred losses included in the retro premium calculation if the date of injury (as defined above) falls within the retro coverage period being adjusted.

(4) Incurred losses determined in subsections (1) through (3) of this section are still subject to development for retrospective premium calculations per the provisions of WAC 296-17-90401 through 296-17-90497.

[Statutory Authority: RCW 51.18.010(2). 01-23-058, § 296-17-90447, filed 11/20/01, effective 1/1/02.]

WAC 296-17-90492 Table I.

RETROSPECTIVE RATING PLANS A, A1, A2, A3, AND B
STANDARD PREMIUM SIZE RANGES
Effective January 1, 2002

Size Group Number	Standard Premium Range
63	\$ 3,202 - \$ 3,648
62	3,649 - 4,381
61	4,382 - 5,213
60	5,214 - 6,168
59	6,169 - 7,260
58	7,261 - 8,490
57	8,491 - 9,887
56	9,888 - 11,369
55	11,370 - 12,937
54	12,938 - 14,591
53	14,592 - 16,331
52	16,332 - 18,157
51	18,158 - 20,069
50	20,070 - 22,068
49	22,069 - 24,188
48	24,189 - 26,322
47	26,323 - 28,462
46	28,463 - 30,813
45	30,814 - 33,429

Size Group Number	Standard Premium Range	Size Group Number	Standard Premium Range
44	33,430 - 36,342	22	280,631 - 317,655
43	36,343 - 39,563	21	317,656 - 361,973
42	39,564 - 43,170	20	361,974 - 415,488
41	43,171 - 47,221	19	415,489 - 479,560
40	47,222 - 51,734	18	479,561 - 558,536
39	51,735 - 56,831	17	558,537 - 657,049
38	56,832 - 62,608	16	657,050 - 778,945
37	62,609 - 69,099	15	778,946 - 995,070
36	69,100 - 76,008	14	995,071 - 1,271,163
35	76,009 - 83,610	13	1,271,164 - 1,623,860
34	83,611 - 91,970	12	1,623,861 - 2,074,416
33	91,971 - 101,168	11	2,074,417 - 2,649,964
32	101,169 - 111,284	10	2,649,965 - 3,809,234
31	111,285 - 121,853	9	3,809,235 - 5,590,539
30	121,854 - 133,510	8	5,590,540 - 7,948,637
29	133,511 - 146,795	7	7,948,638 - 11,711,689
28	146,796 - 161,821	6	11,711,690 - 18,215,127
27	161,822 - 179,114	5	18,215,128 - 28,753,854
26	179,115 - 199,119	4	28,753,855 & Over
25	199,120 - 222,074	[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010. 01-23-061, § 296-17-90492, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-90492, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90492, filed 5/12/00, effective 7/1/00.]	
24	222,075 - 248,951		
23	248,952 - 280,630		

WAC 296-17-90493 Table II.

RETROSPECTIVE RATING PLAN A
BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR=.729
Effective January 1, 2002

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														
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

Workers' Compensation Insurance

296-17-90494

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
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
4	.096	.089	.084	.081	.078	.076	.074	.072	.070	.068	.066	.065	.064	.063

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010. 01-23-061, § 296-17-90493, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-90493, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90493, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90494 Table III.

RETROSPECTIVE RATING PLAN A1
MINIMUM PREMIUM RATIOS
BASIC PREMIUM RATIO=.058
LOSS CONVERSION FACTOR=.729
Effective January 1, 2002

Maximum
Premium
Ratio:Size
Group

	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
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

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														
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
4	.967	.937	.909	.884	.860	.838	.818	.800	.783	.766	.732	.701	.672	.620

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010. 01-23-061, § 296-17-90494, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-90494, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90494, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90495 Table IV.

RETROSPECTIVE RATING PLAN A2
MINIMUM PREMIUM RATIOS
AND BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR=.729
Effective January 1, 2002

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														
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

Workers' Compensation Insurance

296-17-90495

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															
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

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															
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

Workers' Compensation Insurance

296-17-90496

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														
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
4	Basic Premium Ratio	.077	.074	.071	.070	.068	.067	.066	.065	.064	.063	.062	.062	.061	.061
	Minimum Premium Ratio	.855	.830	.811	.782	.767	.752	.729	.714	.700	.689	.677	.658	.624	.586

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-90495, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-90495, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.18.010, 00-11-060, § 296-17-90495, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90496 Table V.

RETROSPECTIVE RATING PLAN A3
MINIMUM PREMIUM RATIOS
AND BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR=.729
Effective January 1, 2002

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														
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

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															
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

Workers' Compensation Insurance

296-17-90497

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															
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
4	Basic Premium Ratio	.104	.089	.085	.081	.078	.075	.073	.072	.070	.068	.066	.065	.064	.062
	Minimum Premium Ratio	.532	.513	.497	.483	.469	.457	.446	.436	.427	.417	.399	.383	.368	.342

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010. 01-23-061, § 296-17-90496, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-90496, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.18.010. 00-11-060, § 296-17-90496, filed 5/12/00, effective 7/1/00.]

WAC 296-17-90497 Table VI.

RETROSPECTIVE RATING PLAN B
BASIC PREMIUM RATIOS
AND LOSS CONVERSION FACTORS
Effective January 1, 2002

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															
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

Workers' Compensation Insurance

296-17-90497

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														
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

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															
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	.042	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.958	.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
4	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.815	.800	.797	.794	.792	.790	.788	.786	.785	.784	.782	.781	.779	.777

[Statutory Authority: RCW 51.04.020, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-90497, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-90497, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.18.010, 00-11-060, § 296-17-90497, filed 5/12/00, effective 7/1/00.]

WAC 296-17-920 Assessment for supplemental pension fund. The amount of 36.0 mills (\$.0360) shall be retained by each employer from the earnings of each worker for each hour or fraction thereof the worker is employed. 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, 51.16.035, 51.32.073, 51.18.010, 01-23-061, § 296-17-920, filed 11/20/01, effective 1/1/02; 00-23-101, § 296-17-920, filed 11/21/00, effective 1/1/01. Statutory Authority: RCW 51.04.020, 51.16.035 and 51.32.073, 99-24-055, § 296-17-920, filed 11/29/99, effective 12/31/99; 98-24-094, § 296-17-920, filed 12/1/98, effective 1/1/99; 97-24-062, § 296-17-920, filed 12/1/97, effective 1/1/98; 96-24-063, § 296-17-920, filed 11/29/96, effective 1/1/97. Statutory Authority: RCW 51.16.035 and

51.32.073, 96-06-025, § 296-17-920, filed 2/28/96, effective 4/1/96. Statutory Authority: RCW 51.04.020, 95-23-080, § 296-17-920, filed 11/20/95, effective 1/1/96; 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.]

Chapter 296-20 WAC

MEDICAL AID RULES

WAC

296-20-01002	Definitions.
296-20-03001	Treatment requiring authorization.
296-20-091	Home nursing.
296-20-135	Conversion factors.
296-20-303	Attendant services.

WAC 296-20-01002 Definitions. 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).

Attendant care: Those proper and necessary personal care services provided to maintain the worker in his or her residence. Refer to WAC 296-20-303 for more information.

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.

Authorization: Notification by a qualified representative of the department or self-insurer that specific proper and 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.

Average wholesale price (AWP): A pharmacy reimbursement formula by which the pharmacist is reimbursed for the cost of the product plus a mark-up. The AWP is an industry benchmark which is developed independently by companies that specifically monitor drug pricing.

Baseline price (BLP): Is derived by calculating the mean average for all NDC's (National Drug Code) in a specific product group, determining the standard deviation, and calculating a new mean average using all prices within one standard deviation of the original mean average. "Baseline price" is a drug pricing mechanism developed and updated by First Data Bank.

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.

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.

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.

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 of 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.

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.

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.

Fatal: When the attending doctor has reason to believe a worker has died as a result of an industrial injury or expo-

sure, 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.

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.

(e) Average wholesale price (AWP), baseline price (BLP), and policies related to the purchase of medications.

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.

Home nursing: Those nursing services that are proper and necessary to maintain the worker in his or her residence. These services must be provided through an agency licensed, certified or registered to provide home care, home health or hospice services. Refer to WAC 296-20-091 for more information.

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.

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 limita-

tions 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.

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.

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.**

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.

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.

Proper and necessary:

(1) The department or self-insurer pays for proper and necessary health care services that are related to the diagnosis and treatment of an accepted condition.

(2) Under the Industrial Insurance Act, "proper and necessary" refers to those health care services which are:

(a) Reflective of accepted standards of good practice, within the scope of practice of the provider's license or certification;

(b) Curative or rehabilitative. Care must be of a type to cure the effects of a work-related injury or illness, or it must be rehabilitative. Curative treatment produces permanent changes, which eliminate or lessen the clinical effects of an accepted condition. Rehabilitative treatment allows an injured or ill worker to regain functional activity in the pres-

ence of an interfering accepted condition. Curative and rehabilitative care produce long-term changes;

(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.

(3) The department or self-insurer stops payment for health care services once a worker reaches a state of maximum medical improvement. Maximum medical improvement occurs when no fundamental or marked change in an accepted condition can be expected, with or without treatment. Maximum medical improvement may be present though there may be fluctuations in levels of pain and function. A worker's condition may have reached maximum medical improvement though it might be expected to improve or deteriorate with the passage of time. Once a worker's condition has reached maximum medical improvement, treatment that results only in temporary or transient changes is not proper and necessary. "Maximum medical improvement" is equivalent to "fixed and stable."

(4) 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 proper and necessary. Services that are controversial, obsolete, investigational or experimental are presumed not to be proper and necessary, and shall be authorized only as provided in WAC 296-20-03002(6) and 296-20-02850.

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.

Temporary partial disability: Partial time loss compensation may be paid when the worker can return to work on a limited basis or return to a 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.**

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.

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.

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.

Unusual or unlisted procedure: Value of unlisted services or procedures should be substantiated "by report" (BR).

Utilization review: The assessment of a claimant's medical care to assure that it is proper and 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.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-20-01002, filed 8/29/01, effective 10/1/01. Statutory Authority: RCW 51.04.020 and 51.04.030. 00-01-039, § 296-20-01002, filed 12/7/99, effective 1/8/00. Statutory Authority: RCW 51.04.030, 70.14.050 and 51.04.020(4). 95-16-031, § 296-20-01002, filed 7/21/95, effective 8/22/95. 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 296-20-03001 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, attendant services or convalescent center care must be authorized per provisions outlined in WAC 296-20-091 or 296-20-303.

(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, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-20-03001, filed 8/29/01, effective 10/1/01. 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 296-20-091 Home nursing. A worker temporarily totally disabled or permanently totally disabled may either temporarily or permanently require home nursing care. A physician's request and prior department authorization are required for home nursing care.

Home health, hospice, and home care agency providers shall be licensed.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-20-091, filed 8/29/01, effective 10/1/01. 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 296-20-135 Conversion factors. (1) Conversion factors are used to calculate payment levels for services reimbursed under the Washington resource based relative value scale (RBRVS), and for anesthesia services payable with base and time units.

(2) **Washington RBRVS** services have a conversion factor of \$ \$49.60. The fee schedules list the reimbursement levels for these services.

(3) **Anesthesia services** that are paid with base and time units have a conversion factor of \$2.70 per minute, which is equivalent to [\$40.50] per 15 minutes. The base units and payment policies can be found in the fee schedules.

[Statutory Authority: RCW 51.04.020(1) and 51.04.030. 01-10-026, § 296-20-135, filed 4/24/01, effective 7/1/01; 00-09-077, § 296-20-135, filed 4/18/00, effective 7/1/00. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 99-10-043, § 296-20-135, filed 4/30/99, effective 7/1/99; 98-09-125, § 296-20-135, filed 4/22/98, effective 7/1/98; 97-10-017, § 296-20-135, filed 4/28/97, effective 7/1/97. Statutory Authority: RCW 51.04.020 and 51.04.030. 96-19-060, § 296-20-135, filed 9/16/96, effective 10/17/96; 96-10-086, § 296-20-135, filed 5/1/96, effective 7/1/96; 95-17-001, § 296-20-135, filed 8/2/95, effective 10/1/95; 95-05-072, § 296-20-135, filed 2/15/95, effective 3/18/95. 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.]

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 296-20-303 Attendant services. (1) **What are attendant services?** Attendant services are proper and necessary personal care services provided to maintain the injured worker in his or her residence.

(2) **Who may receive attendant services?** Workers who are temporarily or permanently totally disabled and rendered physically helpless by the nature of their industrial injury or occupational disease may receive attendant services.

(3) **Is prior authorization required for attendant services?** Yes. To be covered by the department, attendant services must be requested by the attending physician and authorized by the department before care begins.

(4) **What attendant services does the department cover?** The department covers proper and necessary attendant services that are provided consistent with the injured worker's needs, abilities and safety. Only attendant services that are necessary due to the physical restrictions caused by the accepted industrial injury or occupational disease are covered.

The following are examples of attendant services that may be covered:

- Bathing and personal hygiene;
- Dressing;
- Administration of medications;
- Specialized skin care, including changing or caring for dressings or ostomies;
- Tube feeding;
- Feeding assistance (not meal preparation);
- Mobility assistance, including walking, toileting and other transfers;
- Turning and positioning;
- Bowel and incontinent care; and
- Assistance with basic range of motion exercises.

Services the department considers everyday environmental needs, unrelated to the medical care of the worker are not covered. The following chore services are examples of services that are not covered: Housecleaning, laundry, shopping, meal planning and preparation, transportation of the injured worker, errands for the injured worker, recreational activities, yard work, and child care.

(5) **Who may provide attendant services?** Attendant services provided on or after June 1, 2002, must be provided through an agency licensed, certified or registered to provide home care or home health services.

EXCEPTION: A worker who received department approved attendant services from a spouse prior to October 1, 2001, may continue to receive attendant services from that spouse as long as all of the following criteria are met. The attendant service spouse provider:

- (a) Had an active provider account with the department on September 30, 2001; and
- (b) Maintains an active provider account with the department; and
- (c) Remains legally married to the injured worker; and
- (d) Allows the department or its designee to perform periodic independent nursing evaluations in the worker's residence.

(6) What are the treatment limits for attendant services? The department will determine the maximum hours of authorized attendant care services based on an independent nursing assessment of the worker's care needs.

Spouses eligible to provide attendant services are limited to a maximum of seventy hours of attendant services per week or to the maximum hours authorized for the worker, whichever is less. Workers who are receiving attendant services from spouses and whose care needs exceed seventy hours per week must receive attendant services in excess of seventy hours from an agency eligible to provide attendant services.

EXCEPTION: The department may exempt a spouse from the seventy-hour limit if, after review by the department and based on independent nursing assessment:

- (a) The injured worker is receiving proper and necessary care; and
- (b) The worker's care needs exceed seventy hours per week; and
- (c) No eligible agency provider is available.

(7) Will the department review attendant services? Yes. The department or its designee will perform periodic independent nursing evaluations of attendant services. Evaluations may include, but are not limited to, on-site review of the injured worker and review of medical records.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-20-303, filed 8/29/01, effective 10/1/01.]

Chapter 296-23 WAC

RADIOLOGY, RADIATION THERAPY, NUCLEAR MEDICINE, PATHOLOGY, HOSPITAL, CHIROPRACTIC, PHYSICAL THERAPY, DRUGLESS THERAPEUTICS AND NURSING— DRUGLESS THERAPEUTICS, ETC.

WAC

296-23-165	Miscellaneous services and appliances.
296-23-170	Nursing services.
296-23-220	Physical therapy rules.
296-23-230	Occupational therapy rules.
296-23-245	Licensed nursing billing instructions.

WAC 296-23-165 Miscellaneous services and appliances. (1) The department or self-insurer will reimburse for certain proper and necessary miscellaneous services and items needed as a result of an industrial accident. Nursing care, attendant services, 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, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-23-165, filed 8/29/01, effective 10/1/01. 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. 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 are listed in the fee schedules.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-23-170, filed 8/29/01, effective 10/1/01. 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 296-23-220 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 296-21-290.

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 \$99.00 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(1) and 51.04.030. 01-10-026, § 296-23-220, filed 4/24/01, effective 7/1/01; 00-09-077, § 296-23-220, filed 4/18/00, effective 7/1/00. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 99-10-043, § 296-23-220, filed 4/30/99, effective 7/1/99; 98-09-125, § 296-23-220, filed 4/22/98, effective 7/1/98; 97-10-017, § 296-23-220, filed 4/28/97, effective 7/1/97; 96-10-086, § 296-23-220, filed 5/1/96, effective 7/1/96; 95-05-072, § 296-23-220, filed 2/15/95, effective 3/18/95. 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 296-23-230 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.

pist 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 \$99.00 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(1) and 51.04.030. 01-10-026, § 296-23-230, filed 4/24/01, effective 7/1/01; 00-09-077, § 296-23-230, filed 4/18/00, effective 7/1/00. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 99-10-043, § 296-23-230, filed 4/30/99, effective 7/1/99; 98-09-125, § 296-23-230, filed 4/22/98, effective 7/1/98; 97-10-017, § 296-23-230, filed 4/28/97, effective 7/1/97; 96-10-086, § 296-23-230, filed 5/1/96, effective 7/1/96; 95-05-072, § 296-23-230, filed 2/15/95, effective 3/18/95. 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 296-23-245 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 WAC 296-20-303 for rules regarding home attendant services.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.32.060, 51.32.072, and 7.68.070. 01-18-041, § 296-23-245, filed 8/29/01, effective 10/1/01. 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.]

Chapter 296-23A WAC HOSPITALS

WAC

296-23A-0220	How does the department pay for hospital outpatient services?
296-23A-0221	How does the self-insurer pay for hospital outpatient services?
296-23A-0700	What is the "ambulatory payment classification" (APC) payment system?
296-23A-0710	Definitions.
296-23A-0720	How does the department calculate the hospital-specific per APC rate used for paying outpatient services under the outpatient prospective payment system (OPPS)?
296-23A-0730	How does the department determine the APC relative weights?
296-23A-0740	How does the department calculate payments for covered outpatient services through the outpatient prospective payment system (OPPS)?
296-23A-0750	What exclusions and exceptions apply to ambulatory-payment-classification (APC) payments for hospital services?
296-23A-0770	How will excluded outpatient services and hospitals be paid?
296-23A-0780	What information needs to be submitted for the hospital to be paid for outpatient services?

WAC 296-23A-0220 How does the department pay for hospital outpatient services? The department will pay for hospital outpatient services according to the following table:

Hospitals

296-23A-0220

<i>Hospital Type or Service Location</i>	<i>Does the Ambulatory Payment Classification System apply?</i>	<i>Do percent of allowed charges (POAC) payment methods apply?</i>	<i>Do the department's Medical Aid Rules and Fee Schedules apply to hospital outpatient radiology, laboratory, pathology, occupational therapy, and physical therapy services?</i>
Children's hospitals	No	Yes, paid 100% of allowed charges	Yes
Chronic Pain Management Program	No	Exempt, paid per department agreement	Exempt, paid per department agreement
Health Maintenance Organizations	Yes, paid statewide average per APC rate	Yes, applies to certain hospital outpatient services excluded from OPSS except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Military	No	Yes, paid 100% of allowed charges	No, paid 100% of allowed charges
Veterans Administration	No	Yes, paid 100% of allowed charges	No, paid 100% of allowed charges
State psychiatric facility	No	Yes, paid 100% of allowed charges	Yes
Other psychiatric hospitals	No	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Rehabilitation hospitals	No	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Cancer hospitals	No	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Washington rural (Peer Group 1)	No	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Critical access hospitals	No	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
All other Washington hospitals	Yes	Yes, applies to certain hospital outpatient services excluded from OPSS except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes

Hospitals are reimbursed only for the technical component of rates listed in the fee schedules, for outpatient radiology, pathology and laboratory services.

See chapter 296-23 WAC for rules on radiology, pathology, laboratory, physical therapy, occupational therapy, and work hardening services.

See WAC 296-23A-700 for rules on prospective payment system for hospital outpatient services.

See WAC 296-20-132 and 296-20-135 for information on the conversion factor used for certain hospital outpatient services.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0220, filed 11/29/01, effective 1/1/02. Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080. 00-06-027, § 296-23A-0220,

filed 2/24/00, effective 3/26/00; 97-06-066, § 296-23A-0220, filed 2/28/97, effective 4/1/97.]

WAC 296-23A-0221 How does the self-insurer pay for hospital outpatient services? The self-insurer will pay for hospital outpatient services according to the following table:

<i>Hospital Type or Service Location</i>	<i>Do percent of allowed charges (POAC) payment methods apply?</i>	<i>Do the department's Medical Aid Rules and Fee Schedules apply to hospital outpatient radiology, laboratory, pathology, occupational therapy, and physical therapy services?</i>
Children's hospitals	Yes, paid 100% of allowed charges	Yes
Chronic Pain Management Program	Not Applicable	Not Applicable
Health Maintenance Organizations	Yes, paid 100% of allowed charges	Yes
Military	Yes, paid 100% of allowed charges	No, paid 100% of allowed charges
Veterans Administration	Yes, paid 100% of allowed charges	No, paid 100% of allowed charges
State psychiatric facility	Yes, paid 100% of allowed charges	Yes
Other psychiatric hospitals	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Rehabilitation hospitals	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Cancer hospitals	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
Washington rural (Peer Group 1)	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes
All other Washington hospitals	Yes, applies to hospital outpatient services except radiology, laboratory, pathology, occupational therapy, and physical therapy	Yes

Hospitals are reimbursed only for the technical component of rates listed in the fee schedules, for outpatient radiology, pathology and laboratory services.

See chapter 296-23 WAC for rules on radiology, pathology, laboratory, physical therapy, occupational therapy, and work hardening services.

See WAC 296-23A-700 for rules on the prospective payment system for hospital outpatient services.

See WAC 296-20-132 and 296-20-135 for information on the conversion factor used for certain hospital outpatient services.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0221, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0700 What is the "ambulatory payment classification" (APC) payment system? The APC outpatient prospective payment system (OPPS) is a reimbursement method that categorizes outpatient visits into groups according to the clinical characteristics, the typical

resource use, and the costs associated with the diagnoses and the procedures performed. The groups are called Ambulatory Payment Classifications (APCs). The department uses a modified version of the Centers for Medicare and Medicaid Services' (CMS) Prospective Payment System for Hospital Outpatient Department Services to pay some hospitals for covered outpatient services provided to injured workers. The department will utilize CMS' current outpatient code editor to categorize outpatient visits.

The payment system methodology uses CMS' outpatient prospective payment system's relative weight factor for each APC group and a blend of statewide and hospital-specific rates for each APC.

For a complete description of CMS' Prospective Payment System for Hospital Outpatient Department Services see 42 CFR, Chapter IV, Part 419, et al.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0700, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0710 Definitions. "Alternate outpatient payment." A payment for proper and necessary services calculated using a method other than the APC method, such as the outpatient hospital rate or fee schedule.

"Ambulatory payment classification (APC) bill." An outpatient bill for hospital services that are grouped and paid using APCs.

"Ambulatory payment classification (APC) weight." The relative value assigned to each APC by CMS. For information on calculating the APC weights, please see 42 CFR, Chapter IV, Part 419, et al. Medicare Program; Prospective Payment System for Hospital Outpatient Services.

"Ambulatory payment classification (APC)." A grouping for outpatient visits which are similar both clinically and in the resources used.

"Ambulatory surgery centers (ASCs)." Ambulatory surgery centers as defined by the department. ASCs are excluded from the APC payment system.

"Blended rate." The dollar amount used to determine APC payments.

"Bundling." Including the costs of supplies and certain other items with the costs of APCs. Bundled services will not be paid separately.

"Cancer hospitals." Freestanding hospitals specializing in the treatment of individuals who have a neoplasm diagnosis.

"Children's hospitals." Freestanding hospitals specializing in the treatment of individuals less than fourteen years of age.

"CMS." Centers for Medicare and Medicaid Services, formerly the Health Care Financing Administration (HCFA).

"Correct coding initiative." A process to encourage hospitals to code the most appropriate diagnosis and procedure for the services rendered.

"Critical access hospitals." Critical access hospitals as defined by the department of health.

"Current procedural terminology (CPT)." A systematic listing of descriptive terms and identifying codes for reporting medical services, procedures, interventions performed by physicians; the American Medical Association (AMA) publishes it annually.

"Discount factor." The percentage applied to additional significant procedures when a claim has multiple significant procedures or when the same procedure is performed multiple times.

"Exempt services." Services and hospitals that have been identified by CMS and/or L&I as exempt from the APC-based payment system.

"Health care financing administration's common procedure coding system (HCPCS)." Medicare's procedure coding system, which consists of Level 1 CPT Codes, Level 2 National Codes, and Level 3 Local Codes.

"Incidental services." Proper and necessary services that are integral to the delivery of the significant procedure or medical visit and are not separately reimbursable.

"Inpatient only procedures." Certain procedures designated by CMS as being of sufficient resource intensity that an inpatient setting is always required.

"Modifier." A two-digit alphabetic and/or numeric identifier that is added to the procedure code to indicate the type of service performed. Modifiers add clarification to procedures and can affect payment. Modifiers are listed in the current CPT and HCPCS manuals.

"Non-APC services." Services specifically excluded by CMS or by L&I from APC payment.

"Out-of-state hospitals." Any hospital not physically located within the state of Washington.

"Outpatient code editor." A prepayment analysis program designed to exclude certain diagnostic and procedure codes from being classified within the APC payment system.

"Outpatient prospective payment system (OPPS)." A payment system that groups hospital outpatient visits into APCs and multiplies the relative weight factor by the OPPS conversion rate to determine the appropriate payment.

"Outpatient services." Proper and necessary health-care services and treatment ordinarily furnished by a hospital in which the injured worker is not admitted as an inpatient.

"Outpatient." A patient who receives proper and necessary healthcare services or supplies in a hospital-type setting but is not admitted as an inpatient.

"Partial hospitalization." Mental health services provided in an inpatient setting without the traditional inpatient overnight stay.

"Pediatric services." Proper and necessary healthcare services and treatment ordinarily furnished by a hospital in which the injured worker is under the age of fourteen.

"Peer group." Categories of hospitals adopted by the department of health for rate setting purposes. The categories are:

- Group 1 - Usually rural hospitals.
- Group 2 - Usually urban hospitals without a medical education program.
- Group 3 - Hospitals with a medical education program.

"Psychiatric hospitals." Freestanding hospitals specializing in the treatment of individuals with a mental health disease.

"Rehabilitation hospitals." Freestanding hospitals specializing in the treatment of individuals in need of rehabilitative services.

"Related encounters or related services." Multiple encounters which are:

- Provided within the same window of service; and
- By the same provider (hospital).

"Single visit." A single visit includes all related services that are combined for reimbursement when they occur with the same hospital during the window of service.

"Special programs." Programs specifically designated by the department.

"Transitional pass-through." Certain drugs, devices and biologicals, as identified by CMS that are entitled to a specified payment until CMS assigns and reimburses them under their own APC.

"Window of service." A single date of service. All services associated with the visit for that date constitute a single visit, even when those services are provided on different days.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0710, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0720 How does the department calculate the hospital-specific per APC rate used for paying outpatient services under the outpatient prospective payment system (OPPS)? (1) OPPS payment rates are calculated with a formula that blends a hospital-specific rate and a statewide rate. Each hospital's historic labor and industries' reimbursement level in combination with the department's statewide payments will determine payment rates.

(2) For the statewide rate, the department:

(a) Determines the total number of APC procedures that the department paid the covered hospitals. The relative weights for all of these APCs are summed.

(b) Determines the total dollar amount the department paid for those APCs.

(c) Determines the total dollar amount the department paid as outlier payments.

(d) Subtracts the total outlier payments in (c) of this subsection from the total dollar amount in (b) of this subsection and then divides the adjusted dollar amount by the APC relative weight total from (a) of this subsection.

$$\frac{\text{Sum of APC payments} - \text{Sum of outlier payments}}{\text{Sum of APC relative weights}} = \text{Statewide rate}$$

(3) For the hospital-specific rate, the department:

(a) Segregates all the APCs for each hospital and totals the relative weights for each hospital.

(b) Determines the total dollar amount the department historically paid each hospital for those APCs.

(c) Determines the total dollar amount the department historically paid each hospital as an outlier payment for those APCs.

(d) Subtracts the total hospital-specific outlier payments in (c) of this subsection from the total hospital-specific APC payments in (b) of this subsection and then divides the hospital's adjusted dollar amount by the hospital-specific APC relative weight total from (a) of this subsection.

$$\frac{\text{Sum of hospital-specific APC payment} - \text{Sum of hospital-specific outlier payments}}{\text{Sum of the hospital-specific APC relative weights}} = \text{Hospital-specific rate}$$

(4) The final per APC rate paid to a hospital is a blended combination of the hospital-specific and statewide rates.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0720, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0730 How does the department determine the APC relative weights? The relative weight for each APC is the current relative weight listed by CMS for the corresponding APC.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0730, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0740 How does the department calculate payments for covered outpatient services through the outpatient prospective payment system (OPPS)? (1) Billed services that are reimbursed by the OPPS are grouped into one or more APCs using the outpatient code editor software.

(2) Additional payment may be made for services classified by CMS as transitional pass-through.

(3) Incidental services are grouped within an APC and are not paid separately.

(4) The OPPS APC payment method uses an APC relative weight for each classification group (APC) and the current hospital-specific blended rate to determine the APC payment for an individual service.

(5) For each additional APC listed on a single claim for services, the payment is calculated with the same formula and then discounted. L&I follows all discounting policies used by CMS for the Medicare Prospective Payment System for Hospital Outpatient Department Services.

$$\text{APC payment for each APC} = (\text{APC relative weight} \times \text{hospital-specific blended rate}) \times \text{discount factor (if applicable)} \times \text{units (if applicable)}$$

(7) The total payment on an APC claim is determined mathematically as follows:

(a) Sum of APC payments for each APC +

(b) Additional payment for each transitional pass-through (if applicable) +

(c) Additional outlier payment (if applicable).

(8) L&I follows all billing policies used by CMS for the Medicare Prospective Payment System for Hospital Outpatient Department Services with respect to:

(a) Billing of units of service;

(b) Outlier claims;

(c) Use of modifiers;

(d) Distinguishing between single and multiple visits during a span of time and reporting a single visit on one claim, but multiple visits with unrelated medical conditions on multiple claims; and

(e) For paying terminated procedures based on services actually provided and documented in the medical record, and properly indicated by the hospital through the CPT codes and modifiers submitted on the claim.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0740, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0750 What exclusions and exceptions apply to ambulatory-payment-classification (APC) payments for hospital services? (1) Peer Group 1 (rural) hospitals as identified by the Washington state department of health (DOH).

(2) Critical access hospitals as identified by the Washington state department of health (DOH).

(3) All out-of-state hospitals.

(4) Military/veterans hospitals.

(5) Psychiatric hospitals.

(6) Rehabilitation hospitals.

(7) Cancer hospitals.

(8) Children's hospitals.

(9) Ambulatory surgery centers.

(10) Any outpatient service or special program identified by the department or by CMS as being a non-APC service.

(11) Any inpatient-only procedures as identified by CMS.

(12) Any APCs identified by the department as a non-APC service.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0750, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0770 How will excluded outpatient services and hospitals be paid? Services excluded from APC-payment, if deemed appropriate for reimbursement, will be reimbursed using an alternate outpatient payment method, such as a specific fee schedule and/or using the hospital-specific or the statewide average percent of allowed charges (POAC).

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0770, filed 11/29/01, effective 1/1/02.]

WAC 296-23A-0780 What information needs to be submitted for the hospital to be paid for outpatient services? Each claim for services must include the required elements as described within the current L&I hospital billing and administrative guidelines.

Note: Includes Provider General Billing Manual; Billing Instructions for Hospital Services; Provider Bulletins; and Provider Updates.

[Statutory Authority: RCW 51.04.020, 51.04.030, 51.36.080, 51.36.085. 01-24-045, § 296-23A-0780, filed 11/29/01, effective 1/1/02.]

Chapter 296-23B WAC

AMBULATORY SURGERY CENTER PAYMENT

WAC

296-23B-0100	Who may bill for ambulatory surgery center services?
296-23B-0110	How does an ambulatory surgery center bill for services?
296-23B-0120	What procedures are covered in an ambulatory surgery center?
296-23B-0130	What payment can an ambulatory surgery center expect for providing services?
296-23B-0140	When will the rates and policies for ambulatory surgery centers be updated?

WAC 296-23B-0100 Who may bill for ambulatory surgery center services? Only facilities that meet the criteria below may bill for ambulatory surgery center (ASC) services.

An ambulatory surgery center is an outpatient facility where surgical services are provided and that meets the following three requirements:

(1) Must be licensed by the state(s) in which it operates, unless that state does not require licensure.

(2) Must have at least one of the following credentials:

(a) Medicare certification as an ambulatory surgery center; or

(b) Accreditation as an ambulatory surgery center by a nationally recognized agency acknowledged by the Centers for Medicare and Medicaid Services (CMS).

(3) Must have an active ambulatory surgery center provider account with the department of labor and industries.

Note: A provider account application may be obtained from Department of Labor and Industries, Provider Accounts, P.O. Box 44261, Olympia, WA 98504-4261, 360-902-5140. A copy can also be obtained online at www.lni.wa.gov.

[Statutory Authority: RCW 51.36.080, 51.04.030, 51.36.010, 51.04.020. 01-21-140, § 296-23B-0100, filed 10/24/01, effective 1/1/02.]

WAC 296-23B-0110 How does an ambulatory surgery center bill for services? Ambulatory surgery centers must submit bills for services on a national standard form specified by the department of labor and industries. Bills also may be submitted electronically using department file format specifications. Providers must follow the instructions in the *General Provider Billing Manual* and *Billing Instructions*. Special billing policies for ambulatory surgery centers are in the *Medical Aid Rules and Fee Schedules* under *Ambulatory Surgery Center Payment Policies*.

Note: Copies of billing manuals, billing instructions and the *Medical Aid Rules and Fee Schedules* may be obtained from Department of Labor and Industries, Warehouse, P.O. Box 44843, Olympia, WA 98504-4843 or 360-902-5754. The *Medical Aid Rules and Fee Schedules* may also be viewed online at www.lni.wa.gov.

[Statutory Authority: RCW 51.36.080, 51.04.030, 51.36.010, 51.04.020. 01-21-140, § 296-23B-0110, filed 10/24/01, effective 1/1/02.]

WAC 296-23B-0120 What procedures are covered in an ambulatory surgery center? The department will use the Centers for Medicare and Medicaid Services (CMS) list of procedures covered in an ambulatory surgery center plus additional procedures as determined by the department. All procedures covered in an ambulatory surgery center are listed in the *Medical Aid Rules and Fee Schedules, Ambulatory Surgery Center Payment Policies* section. Certain procedures are still subject to the utilization review program. Procedures that are not listed are not covered in an ambulatory surgery center.

Under certain conditions, the director, the director's designee, or self-insurer, in their sole discretion, may determine that a procedure not on the list may be authorized in an ambulatory surgery center. For example, if the procedure could be harmful to a particular patient unless performed in an ambulatory surgery center. Requests for coverage under these special circumstances require prior authorization. The process for requesting coverage is outlined in the *Medical Aid Rules and Fee Schedules, Ambulatory Surgery Center Payment Policies* section.

The department will allow some procedures to be covered in an outpatient setting that CMS covers only in an inpatient setting. The department will cover these procedures in an ambulatory surgery center if the following criteria are met:

(1) The surgeon deems that it is safe and appropriate to perform such a procedure in an outpatient setting; and

(2) The procedure meets the department's utilization review requirements.

Notes: For information on the utilization review program please see the following:
WAC 296-20-024 for utilization management authority.
WAC 296-20-01002 for definition of utilization review.
WAC 296-20-02700 through 296-20-03002 for medical coverage policies.
Provider bulletins describing the utilization review program.
These may be viewed online at www.lni.wa.gov.

[Statutory Authority: RCW 51.36.080, 51.04.030, 51.36.010, 51.04.020. 01-21-140, § 296-23B-0120, filed 10/24/01, effective 1/1/02.]

WAC 296-23B-0130 What payment can an ambulatory surgery center expect for providing services? The department pays the lesser of the billed charge (the ASC's

usual and customary fee) or the fee schedule's maximum allowed rate. The fee schedule for ambulatory surgery centers is in the *Medical Aid Rules and Fee Schedules*.

[Statutory Authority: RCW 51.36.080, 51.04.030, 51.36.010, 51.04.020. 01-21-140, § 296-23B-0130, filed 10/24/01, effective 1/1/02.]

WAC 296-23B-0140 When will the rates and policies for ambulatory surgery centers be updated? The fee schedule, codes, and policies for ambulatory surgery centers will be reviewed periodically. The department will publish provider bulletins to clarify, update, and inform ambulatory surgery centers about changes in policies or fees. They also will be published each July in the *Medical Aid Rules and Fee Schedules*.

[Statutory Authority: RCW 51.36.080, 51.04.030, 51.36.010, 51.04.020. 01-21-140, § 296-23B-0140, filed 10/24/01, effective 1/1/02.]

Chapter 296-24 WAC

GENERAL SAFETY AND HEALTH STANDARDS

WAC

296-24-001	Repealed.
296-24-005	Purpose and scope.
296-24-006	Repealed.
296-24-007	Repealed.
296-24-008	Repealed.
296-24-010	Repealed.
296-24-015	Repealed.
296-24-020	Repealed.
296-24-025	Repealed.
296-24-040	Repealed.
296-24-045	Repealed.
296-24-055	Repealed.
296-24-061	Repealed.
296-24-06105	Repealed.
296-24-06110	Repealed.
296-24-06115	Repealed.
296-24-06120	Repealed.
296-24-06125	Repealed.
296-24-06130	Repealed.
296-24-06135	Repealed.
296-24-06140	Repealed.
296-24-06145	Repealed.
296-24-06150	Repealed.
296-24-06155	Repealed.
296-24-06160	Repealed.
296-24-073	Repealed.
296-24-075	Repealed.
296-24-07501	Repealed.
296-24-078	Repealed.
296-24-07801	Repealed.
296-24-084	Repealed.
296-24-086	Repealed.
296-24-088	Repealed.
296-24-090	Repealed.
296-24-092	Repealed.
296-24-094	Repealed.
296-24-096	Repealed.
296-24-098	Repealed.
296-24-10203	General requirements.
296-24-12001	Scope.
296-24-12003	Repealed.
296-24-12005	Repealed.
296-24-12007	Repealed.
296-24-12009	Repealed.
296-24-12010	Showers.
296-24-12019	Repealed.
296-24-12021	Repealed.
296-24-14007	Sign design and colors.
296-24-21503	Repealed.
296-24-21505	Repealed.
296-24-21507	Repealed.
296-24-23503	General requirements.
296-24-23505	Cabs.
296-24-23507	Footwalks and ladders.

296-24-23513	Electric equipment.
296-24-260	Helicopters.
296-24-33009	Container and portable tank storage.
296-24-33015	Service stations.
296-24-40513	Extinguishment.
296-24-47509	Systems utilizing containers other than DOT containers.
296-24-47513	Storage of containers awaiting use or resale.
296-24-47517	Liquefied petroleum gas service stations.
296-24-550	Repealed.
296-24-55001	Definitions.
296-24-55003	Repealed.
296-24-55005	Repealed.
296-24-55007	Repealed.
296-24-55009	Repealed.
296-24-565	Repealed.
296-24-56501	Repealed.
296-24-56503	Repealed.
296-24-56505	Repealed.
296-24-56507	Repealed.
296-24-56509	Repealed.
296-24-56511	Repealed.
296-24-56513	Repealed.
296-24-56515	Repealed.
296-24-56517	Repealed.
296-24-56519	Repealed.
296-24-56521	Repealed.
296-24-56523	Repealed.
296-24-56529	Repealed.
296-24-56531	Repealed.
296-24-567	Employee emergency plans and fire prevention plans.
296-24-58513	Protective clothing.
296-24-58517	Appendix A—Fire brigades.
296-24-59201	Scope and application.
296-24-59203	Repealed.
296-24-59205	Repealed.
296-24-59207	Repealed.
296-24-59209	Repealed.
296-24-59211	Repealed.
296-24-59212	Hydrostatic testing.
296-24-59213	Repealed.
296-24-59215	Appendix A—Portable fire extinguishers.
296-24-61705	Total flooding systems with potential health and safety hazards to employees.
296-24-62203	Specific requirements.
296-24-631	Repealed.
296-24-63101	Repealed.
296-24-63103	Repealed.
296-24-63105	Repealed.
296-24-63107	Repealed.
296-24-63109	Repealed.
296-24-63199	Repealed.
296-24-65001	Repealed.
296-24-65501	Portable powered tools.
296-24-67515	Personal protective equipment.
296-24-68215	Public exhibitions and demonstrations.
296-24-68503	Application of arc welding equipment.
296-24-68505	Installation of arc welding equipment.
296-24-69001	General.
296-24-70003	Eye protection.
296-24-70005	Protective clothing.
296-24-73503	Repealed.
296-24-73509	Repealed.
296-24-73513	Repealed.
296-24-75003	Protection for floor openings.
296-24-75007	Protection of open-sided runways.
296-24-75009	Repealed.
296-24-76505	Repealed.
296-24-76517	Repealed.
296-24-78003	Application of requirements.
296-24-78005	Materials.
296-24-78009	Ladder tests.
296-24-79507	Repealed.
296-24-95607	Wiring design and protection.
296-24-980	Safeguards for personnel protection.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-24-001	Foreword. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01.
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- Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-006 Equipment approval by nonstate agency or organization. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-007 Incorporation of standards of national 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-008 Incorporation of standards of federal agency. [Order 73-5, § 296-24-008, filed 5/9/73 and Order 73-4, § 296-24-008, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-010 Variance and procedure. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-015 Education and first-aid standards. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-020 Management's responsibility. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-025 Employee's responsibility. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-040 Accident prevention programs. [Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-17-093, § 296-24-040, filed 8/17/99, effective 12/1/99. 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-045 Safety and health committee plan. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-055 Safety bulletin board. [Order 73-5, § 296-24-055, filed 5/9/73 and Order 73-4, § 296-24-055, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-061 First-aid requirements. [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-061, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06105 What workplaces does this rule apply to? [Statutory Authority: RCW 49.17.040. 99-02-023, § 296-24-06105, filed 12/30/98, effective 3/30/99. Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06105, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06110 What is the purpose of this rule? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06110, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06115 What definitions apply to this section? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06115, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06120 How must an employer ensure that first-aid assistance is available in the workplace? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06120, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06125 How many employees must be trained in first aid? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06125, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06130 What must first-aid training cover? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06130, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06135 How often must employees complete first-aid training? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06135, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06140 How must an employer document first-aid training? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06140, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06145 What is the requirement for first-aid supplies? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06145, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06150 What is the requirement to provide a first-aid station? [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06150, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06155 APPENDIX 1 Evaluation worksheet for the first-aid response plan. [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06155, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-06160 APPENDIX 2—First-aid kit guidance. [Statutory Authority: Chapter 49.17 RCW. 98-06-061, § 296-24-06160, filed 3/2/98, effective 6/1/98.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-073 Safe place standards. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.		
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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-098	038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-07501	General requirements. [Statutory Authority: RCW 49.17.010, [49.17].040 and [49.17].050. 99-10-071, § 296-24-07501, filed 5/4/99, effective 9/1/99. 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-12003	Appendix B to Part A-2—Nonmandatory compliance guidelines for hazard assessment and personal protective equipment selection. [Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-098, filed 9/30/94, effective 11/20/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-12005	General requirements. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-07801	General. [Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-11-055, § 296-24-07801, filed 5/20/97, effective 8/1/97. 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-12007	Water supply. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-084	Occupational head protection. [Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-11-055, § 296-24-084, filed 5/20/97, effective 8/1/97. Statutory Authority: Chapter 49.17 RCW. 96-09-030, § 296-24-084, filed 4/10/96, effective 6/1/96; 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-12009	Toilet facilities. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-086	Personal flotation devices. [Order 76-6, § 296-24-086, filed 3/11/76.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-12019	Washing facilities. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-088	Occupational foot protection. [Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-11-055, § 296-24-088, filed 5/20/97, effective 8/1/97. 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-12021	Waste disposal. [Order 74-27, § 296-24-12019, filed 5/7/74.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-090	Hand protection. [Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-090, filed 9/30/94, effective 11/20/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-21503	Vermin control. [Order 74-27, § 296-24-12021, filed 5/7/74.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-092	Electrical protective equipment. [Statutory Authority: Chapter 49.17 RCW. 96-09-030, § 296-24-092, filed 4/10/96, effective 6/1/96; 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-21505	Secure storage. [Order 73-5, § 296-24-21503, filed 5/9/73 and Order 73-4, § 296-24-21503, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-094	Lighting and illumination. [Order 74-27, § 296-24-094, filed 5/7/74.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-21507	Housekeeping. [Order 73-5, § 296-24-21505, filed 5/9/73 and Order 73-4, § 296-24-21505, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-096	Appendix A to Part A-2—References for further information (nonmandatory). [Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-24-096, filed 9/30/94, effective 11/20/94.] Repealed by 01-11-	296-24-550	Drainage. [Order 73-5, § 296-24-21507, filed 5/9/73 and Order 73-4, § 296-24-21507, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
		296-24-55003	Means of egress. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
			General requirements. [Order 73-5, § 296-24-55003, filed 5/9/73 and Order 73-4, § 296-24-55003, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

296-24-55005	Fundamental requirements. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.		effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-55007	Protection of employees exposed by construction and repair operations. [Order 73-5, § 296-24-55007, filed 5/9/73 and Order 73-4, § 296-24-55007, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-56529	Fire retardant paints. [Order 73-5, § 296-24-56529, filed 5/9/73 and Order 73-4, § 296-24-56529, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-55009	Maintenance. [Order 73-5, § 296-24-55009, filed 5/9/73 and Order 73-4, § 296-24-55009, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-56531	Exit marking. [Order 73-5, § 296-24-56531, filed 5/9/73 and Order 73-4, § 296-24-56531, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-59203	Exemptions. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59203, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56501	Permissible exit components. [Order 73-5, § 296-24-56501, filed 5/9/73 and Order 73-4, § 296-24-56501, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-59205	General requirements. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59205, filed 12/24/81.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56503	Protective enclosure of exits. [Order 73-5, § 296-24-56503, filed 5/9/73 and Order 73-4, § 296-24-56503, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-59207	Selection and distribution. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59207, filed 12/24/81.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56505	Width and capacity of means of egress. [Order 73-5, § 296-24-56505, filed 5/9/73 and Order 73-4, § 296-24-56505, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-59209	Inspection, maintenance and testing. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59209, filed 12/24/81.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56507	Egress capacity and occupant load. [Order 73-5, § 296-24-56507, filed 5/9/73 and Order 73-4, § 296-24-56507, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-59211	Hydrostatic testing. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56509	Arrangement of exits. [Order 73-5, § 296-24-56509, filed 5/9/73 and Order 73-4, § 296-24-56509, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-59213	Training and education. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59213, filed 12/24/81.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56511	Access to exits. [Order 73-5, § 296-24-56511, filed 5/9/73 and Order 73-4, § 296-24-56511, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-631	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.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56513	Exterior ways of exit access. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-63101	Scope and application. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63101, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56515	Discharge from exits. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-63103	General requirements. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63103, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56517	Headroom. [Order 73-5, § 296-24-56517, filed 5/9/73 and Order 73-4, § 296-24-56517, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-63105	Installation and restoration. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63105, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56519	Changes in elevation. [Order 73-5, § 296-24-56519, filed 5/9/73 and Order 73-4, § 296-24-56519, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-63107	Maintenance and testing. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63107, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56521	Maintenance and workmanship. [Order 73-5, § 296-24-56521, filed 5/9/73 and Order 73-4, § 296-24-56521, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-24-63109	Manual operation. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63109, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-24-56523	Furnishings and decorations. [Order 73-5, § 296-24-56523, filed 5/9/73 and Order 73-4, § 296-24-56523, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01,	296-24-63199	Appendix A—Employee alarm systems. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63199, filed 12/24/81.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

- 296-24-65001 General requirements. [Order 73-5, § 296-24-65001, filed 5/9/73 and Order 73-4, § 296-24-65001, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-73503 Housekeeping. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-73509 Floor loading protection. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-73513 Buildings—Floors. [Order 74-27, § 296-24-73513, filed 5/7/74.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-75009 Stairway railings and guards. [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.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-76505 Where fixed stairs are required. [Order 73-5, § 296-24-76505, filed 5/9/73 and Order 73-4, § 296-24-76505, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-76517 Railings and handrails. [Order 73-5, § 296-24-76517, filed 5/9/73 and Order 73-4, § 296-24-76517, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-24-79507 Care and maintenance and use of ladders. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

WAC 296-24-001 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-005 Purpose and scope. The rules in this chapter are designed to protect the safety and health of employees by creating a healthy work environment by establishing requirements to control safety hazards in the workplace. Chapter 296-800 WAC, the safety and health core rules, contain safety and health rules that apply to most workplaces. Other special industry rules complement the rules found in this chapter and in the safety and health core rules.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-005, filed 5/9/01, effective 9/1/01; 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 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-007 Repealed. See Disposition Table at beginning of this chapter.

[2002 WAC Supp.—page 1024]

WAC 296-24-008 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-045 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-055 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-061 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06105 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06110 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06115 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06120 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06125 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06130 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06135 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06140 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06145 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06150 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06155 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-06160 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-073 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-075 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-07501 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-078 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-07801 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-084 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-086 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-088 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-090 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-092 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-094 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-096 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-098 Repealed. See Disposition Table at beginning of this chapter.

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 296-800-140.

(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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-10203, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 90-03-029 (Order 89-20), § 296-24-10203, filed 1/11/90, effective 2/26/90.]

WAC 296-24-12001 Scope. This scope includes all sections of WAC 296-24-120, 296-800-220, and 296-800-230 and applies to all permanent places of employment except where domestic, or mining work only is performed. The shower requirements in WAC 296-24-12010 are not applicable to agricultural operations. Measures for the control of toxic materials are considered to be outside the scope of this section.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-12001, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-24-12001, filed 10/20/95, effective 1/16/96. 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 296-24-12003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-12005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-12007 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-12009 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-12010 Showers. (1) 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.

(2) The employer is responsible for identifying such potential hazards and for insisting that the employee shower at the end of the shift.

(3) Whenever showers are required by a particular standard, the showers shall be provided, in accordance with (a) through (d) of this subsection:

(a) 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.

(b) Body soap or other appropriate cleansing agents convenient to the showers shall be provided as specified in this section.

(c) Showers shall be provided with hot and cold water feeding a common discharge line.

(d) Employees who use showers shall be provided with individual clean towels.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-12010, filed 5/9/01, effective 9/1/01.]

WAC 296-24-12019 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-12021 Repealed. See Disposition Table at beginning of this chapter.

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 296-800-310.

(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 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-14007, filed 5/9/01, effective 9/1/01. 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 296-24-21503 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-21505 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-21507 Repealed. See Disposition Table at beginning of this chapter.

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 296-350-700 variance from WISHA rules.)

(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 Manufacturers 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-23503, filed 5/9/01, effective 9/1/01. 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(4) Lighting. Light in the cab shall be sufficient to enable the operator to see clearly enough to perform the work.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-23505, filed 8/8/01, effective 9/1/01. 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 and WAC 296-800-260.

(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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-23507, filed 5/9/01, effective 9/1/01. 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 296-24-23513 Electric equipment. (1) General.

(a) Wiring and equipment shall comply with chapter 296-24 WAC Part L, and WAC 296-800-280.

(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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-23513, filed 5/9/01, effective 9/1/01. 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 296-24-260 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-260, filed 8/8/01, effective 9/1/01. 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 296-24-33009 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 wood-screws. 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, scuffboards, 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 con-

trolled 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	
		Gal.	Ht.	Gal.	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 stand-pipe 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 gal.	3 Distance between piles ft.	4 Distance to property line that can be built upon ft.	5 Distance to street, alley, public way 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-33009, filed 8/8/01, effective 9/1/01. 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 296-24-33015 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 vapor-tight 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 sys-

tem 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.

TABLE H-19
ELECTRICAL EQUIPMENT HAZARDOUS
AREAS—SERVICE STATIONS

Location	Class I, Group D division	Extent of classified area
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.

TABLE H-19
ELECTRICAL EQUIPMENT HAZARDOUS
AREAS—SERVICE STATIONS

Location	Class I, Group D division	Extent of classified area
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 Divi- sion 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-33015, filed 8/8/01, effective 9/1/01. 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 296-24-40513 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 296-800-300.

(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 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-40513, filed 5/9/01, effective 9/1/01. 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 296-24-47509 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

¹New storage containers of the 80 type have not been authorized since Dec. 31, 1947.

²Container 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.

³Construction 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 follow-

ing: 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-47509, filed 8/8/01, effective 9/1/01; Order 73-5, § 296-24-47509, filed 5/9/73 and Order 73-4, § 296-24-47509, 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-47513, filed 8/8/01, effective 9/1/01. 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 296-24-47517 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

¹Container 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.

²Construction 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 ignitable 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 shut-off 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 than 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-47517, filed 8/8/01, effective 9/1/01; Order 73-5, § 296-24-47517, filed 5/9/73 and Order 73-4, § 296-24-47517, filed 5/7/73.]

WAC 296-24-550 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-55001 Definitions. (1) 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.

(2) 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.

(3) 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-55001, filed 8/8/01, effective 9/1/01. 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 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-55005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-55007 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-55009 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-565 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56501 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56503 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56505 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56507 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56509 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56511 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56513 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56515 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56517 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56519 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56521 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56523 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56529 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-56531 Repealed. See Disposition Table at beginning of this chapter.

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.

You must establish an employee alarm system which complies with WAC 296-800-310. The employee alarm system must provide warning for necessary emergency action as called for in your emergency action plan. The employee alarm must be distinctive and recognizable as a signal to perform actions designed under the emergency action plan.

(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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-567, filed 5/9/01, effective 9/1/01. 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 296-24-58513 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 296-800-160 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 after-flame 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 296-800-160 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 296-800-160.

(c) Full facepieces, helmets, or hoods of breathing apparatus which meet the requirements of chapter 296-62 WAC, Part E and WAC 296-24-58515, shall be acceptable as meet-

ing the eye and face protection requirements of (b) of this subsection.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-58513, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-24-58513, filed 5/4/99, effective 9/1/99. 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 296-24-58517 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-resistant coats in combination with fully extended boots, or by wearing shorter fire-resistant 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-resistant coat in combination with fully extended boots, or they may wear a fire-resistant coat in combination with protective trousers.

Fire-resistant 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 296-800-160 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 use-

ful 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-58517, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-24-58517, filed 5/4/99, effective 9/1/99. 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.]

WAC 296-24-59201 Scope and application. The requirements of this section apply to the hydrostatic testing of portable fire extinguishers provided for the use of employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-59201, filed 5/9/01, effective 9/1/01. 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 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-59205 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-59207 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-59209 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-59211 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-59212 Hydrostatic testing. (1) 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.

(2) The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury.

(3) 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.

(4) The employer shall assure that carbon dioxide hose assemblies with a shut-off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).

(5) 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).

(6) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.

(7) The employer shall assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.

(8) 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.

(9) 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.

(10) The employer shall assure that acceptable self-generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).

(11) Air or gas pressure may not be used for hydrostatic testing.

(12) 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.

(13)(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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-59212, filed 5/9/01, effective 9/1/01.]

WAC 296-24-59213 Repealed. See Disposition Table at beginning of this chapter.

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 non-essential 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 296-800-300 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 extin-

guishers. 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-59215, filed 5/9/01, effective 9/1/01. 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 296-24-61705 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 must provide a predischarge employee alarm which will give employees time to safely exit from the discharge area prior to system discharge.

Your predischarge employee alarm systems must:

- Provide enough warning to allow employees to safely escape from the workplace or the immediate work area or both;
- Be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace before system discharge;
- Be distinctive and recognizable as a signal to evacuate the work area;
- Be kept in operating condition except when undergoing repairs or maintenance.

You must explain to each employee how to report emergencies in your workplace. Methods of reporting emergencies include manual pull box alarms, public address systems, radio, or telephones. Post emergency telephone numbers near telephones, or employee notice boards, or other conspicuous locations if you use telephones to report emergencies.

If you use a communication system that also serves as an employee alarm system, all emergency messages must have priority over all nonemergency messages.

(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 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-61705, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61705, filed 12/24/81.]

WAC 296-24-62203 Specific requirements. (1) The employer shall assure that dry chemical agents are compatible 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 must provide a predischARGE employee alarm which will give employees time to safely exit from the discharge area prior to system discharge.

Your predischARGE employee alarm systems must:

- Provide enough warning to allow employees to safely escape from the workplace or the immediate work area or both.

- Be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace before system discharge.

- Be distinctive and recognizable as a signal to evacuate the work area.

- Be kept in operating condition except when undergoing repairs or maintenance.

You must explain to each employee how to report emergencies in your workplace. Methods of reporting emergencies include manual pull box alarms, public address systems, radio, or telephones. Post emergency telephone numbers near telephones, or employee notice boards, or other conspicuous locations if you use telephones to report emergencies.

If you use a communication system that also serves as an employee alarm system, all emergency messages must have priority over all nonemergency messages.

(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 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-62203, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62203, filed 12/24/81.]

WAC 296-24-631 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-63101 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-63103 Repealed. See Disposition Table at beginning of this chapter.

[2002 WAC Supp—page 1054]

WAC 296-24-63105 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-63107 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-63109 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-63199 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-65001 Repealed. See Disposition Table at beginning of this chapter.

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, and WAC 296-800-280.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-65501, filed 5/9/01, effective 9/1/01. 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 296-24-67515 Personal protective equipment.

(1) Employers must use only respirators certified by NIOSH under 42 CFR part 84 for protecting employees from dusts produced during abrasive-blasting operations.

(2) Abrasive-blasting respirators. Abrasive-blasting respirators must be worn by all abrasive-blasting operators in the following situations: (a) When working inside of blast cleaning rooms, or (b) when using silica sand in manual blasting operations except where the nozzle and blast are 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, Part E except where the nozzle and blast are physically separated from the operator in an exhaust-ventilated enclosure.

(3) Particulate-filter respirators.

(a) Properly fitted particulate-filter respirators, commonly referred to as dust-filter respirators, 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.

(b) Dust-filter respirators may also be used to protect the operator of outside (outdoor) abrasive-blasting operations

where nonsilica abrasives are used on materials having low toxicity.

Note: The selection of a dust-filter respirator depends on the amount of dust in the breathing zone of the user. See WAC 296-62-07113 - Table 5.

(c) Dust-filter respirators used must be certified by NIOSH under 42 CFR part 84 for protection against the specific type of dust encountered.

(d) Dust-filter respirators must be properly fitted as required in chapter 296-62 WAC, Part E.

(e) Dust-filter respirators must not be used for continuous protection where silica sand is used as the blasting abrasive, or when toxic materials are blasted.

(4) A respiratory protection program as required in chapter 296-62 WAC, Part E must be established wherever it is necessary to use respirators.

(5) Personal protective clothing.

(a) Operators must be equipped with heavy canvas or leather gloves and aprons or equivalent protection to protect them from the impact of abrasives.

(b) Safety shoes must be worn where there is a hazard of foot injury.

(c) Equipment for protection of the eyes and face must be supplied to the operator and to other personnel working near abrasive blasting operations when the respirator design does not provide such protection.

(6) Personal protective clothing, equipment and their use must comply with WAC 296-800-160.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-67515, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-24-67515, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 98-02-006, § 296-24-67515, filed 12/26/97, effective 3/1/98. 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 296-24-68215 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-68215, filed 8/8/01, effective 9/1/01; Order 73-5, § 296-24-68215, filed 5/9/73 and Order 73-4, § 296-24-68215, 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 over-current device if provided with the number of over-current units as specified by chapter 296-24 WAC Part L, and WAC 296-800-280. 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-68503, filed 5/9/01, effective 9/1/01. 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, and WAC 296-800-280.

(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, and WAC 296-800-280.

(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, and WAC 296-800-280. Overcurrent protection shall be provided as specified in chapter 296-24 WAC Part L, and WAC 296-800-280. A disconnect switch with overload protection or equivalent disconnect and protection means, permitted by chapter 296-24 WAC Part L, and WAC 296-800-280, 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-68505, filed 5/9/01, effective 9/1/01. 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 296-24-69001 General. (1) Installation. All equipment shall be installed by a qualified electrician in conformance with chapter 296-24 WAC Part L, and WAC 296-800-280. 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-69001, filed 5/9/01, effective 9/1/01. 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 296-24-70003 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.

Filter Lenses for Protection against Radiant Energy

Welding operation	Electrode Size 1/32 (inches)	Minimum protective arc current	Shade number
Shielded metal arc welding	Less than 3	Less than 60	10
	3-5	60-160	10
	5-8	160-250	12
	More than 8	250-550	14
Gas shielded arc welding (non-ferrous)	2, 3, 4, 5		11
Gas shielded arc welding (ferrous)	2, 3, 4, 5		12
Gas metal arc welding		Less than 60	7
		60-160	10
		160-250	10
		250-500	10
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

Welding operation	Electrode Size 1/32 (inches)	Minimum protective arc current	Shade number
		150-500	10
Air carbon — light		Less than 500	10
Arc cutting— heavy		500-1000	11
Carbon arc welding			14
Plasma arc welding		Less than 20	6
		20-100	8
		100-400	10
		400-800	11
Plasma arc cutting		Less than 300 (light)	8
		300-400 (medium)	9
		400-800 (heavy)	10
Atomic hydrogen welding			10-14
Torch soldering			2
Torch brazing			3 or 4
Gas welding			
Light	Under 1/8	Under 3.2	3 or 4

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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-70003, filed 5/9/01, effective 9/1/01; 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 I, and WAC 296-800-160. 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-70005, filed 5/9/01, effective 9/1/01. 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 296-24-73503 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-73509 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-73513 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-75003 Protection for floor openings. (1) 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.

(2) 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.

(3) Every skylight opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides.

(4) 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.

(5) 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-75003, filed 8/8/01, effective 9/1/01; 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 296-24-75007 Protection of open-sided runways. (1) Railings must 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, 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-75007, filed 8/8/01, effective 9/1/01; 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 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-76505 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-76517 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-24-78003 Application of requirements.

This section is intended to prescribe rules and establish minimum requirements for the construction, 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-78003, filed 8/8/01, effective 9/1/01; 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

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	<i>Fraxinus americana</i> , <i>pennsylvanica</i> , <i>quadrangulata</i>
Beech	<i>Fagus grandifolia</i>
Birch	<i>Betula lenta</i> , <i>alleghaniensis</i> , <i>nigra</i> (2)
Rock elm	<i>Ulmus thomasii</i>
Hickory	<i>Carya ovata</i> , <i>laciniata</i> , <i>tomentosa</i> , <i>glabra</i>
Locust*	<i>Robinia pseudoacacia</i> , <i>Gleditsia triacanthos</i>
Hard maple	<i>Acer nigrum</i> , <i>saccharum</i>
Red maple	<i>Acer rubrum</i> (3)

Red oak

White oak

Pecan

Persimmon

Quercus velutina, *marilandica*, *kelloggii*, *falcata* var. *pagodaefolia*, *laurifolia*, *ellipsoidalis*, *rubra*, *nuttallii*, *palustris*, *coccinea*, *shumardii*, *falcata*, *laevis*, *phellos*

Quercus arizonica, *douglasii*, *macrocarpa*, *lobata*, *prinus*, *muehlenbergii*, *emoryi*, *gambelii*, *oblongifolia*, *virginiana*, *garryana*, *lyrata*, *stellata*, *michauxii*, *bicolor*, *alba*

Carya illinoensis, *cordiformis*, *myristicaeformis* (4), *aquatica* (4)

Diospyros 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)	<i>Pseudotsuga menziesii</i>
Western larch	<i>Larix occidentalis</i>
Southern yellow pine	<i>Pinus taeda</i> , <i>palustris</i> , <i>echinata</i> , <i>elliottii</i> , <i>rigida</i> , <i>virginiana</i>

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	<i>Alnus rubra</i> , <i>rhombifolia</i> (2)
Oregon ash	<i>Fraxinus latifolia</i>
Pumpkin ash	<i>Fraxinus profunda</i>
Alaska cedar*	<i>Chamaecyparis nootkatensis</i>
Port Orford cedar*	<i>Chamaecyparis lawsoniana</i>
Cucumber	<i>Magnolia acuminata</i>
Cypress*	<i>Taxodium distichum</i>
Soft elm	<i>Ulmus americana</i> , <i>rubra</i>
Douglas fir (Rocky Mountain type)	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>
Noble fir	<i>Abies procera</i>
Gum	<i>Liquidambar styraciflua</i>
West coast hemlock	<i>Tsuga heterophylla</i>
Magnolia	<i>Magnolia grandiflora</i>
Oregon maple	<i>Acer macrophyllum</i>
Norway pine	<i>Pinus resinosa</i>
Poplar	<i>Liriodendron tulipifera</i>

Redwood*	<i>Sequoia sempervirens</i>
Eastern spruce	<i>Picea glauca, rubens</i>
Sitka spruce	<i>Picea sitchensis</i>
Sycamore	<i>Platanus occidentalis</i>
Tamarack	<i>Larix laricina</i>
Tupelo	<i>Nyssa aquatica, sylvatica</i>

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	<i>Populus tremuloides, grandidentata</i>
Basswood	<i>Tilia americana, heterophylla</i> (2)
Buckeye	<i>Aesculus octandra, glabra</i> (2)
Butternut	<i>Juglanscinerea</i>
Incense cedar*	<i>Libocedrus decurrens</i>
Western red cedar*	<i>Thuja plicata</i>
Cottonwood	<i>Populus balsamifera, deltoides, sargentii, heterophylla</i>
White fir	<i>Abies concolor, grandis, amabilis, lasiocarpa, magnifica</i>
Hackberry	<i>Celtis occidentalis, laevigata</i> (2)
Eastern hemlock	<i>Tsuga canadensis</i>
Holly	<i>Ilex opaca</i>
Soft maple	<i>Acer saccharinum</i>
Lodgepole pine	<i>Pinus contorta</i>
Idaho white pine	<i>Pinus monticola</i>
Northern white pine	<i>Pinus strobus</i>
Ponderosa pine	<i>Pinus ponderosa, pinus jeffreyi</i> (Jeffrey pine)
Sugar pine	<i>Pinus lambertiana</i>
Engelmann spruce	<i>Picea engelmannii</i>

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.

(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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-78005, filed 8/8/01, effective 9/1/01; Order 73-5, § 296-24-78005, filed 5/9/73 and Order 73-4, § 296-24-78005, filed 5/7/73.]

WAC 296-24-78009 Ladder tests. 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

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-24-78009, filed 8/8/01, effective 9/1/01. 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 296-24-79507 Repealed. See Disposition Table at beginning of this chapter.

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, transformers, 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.**

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) and 296-800-280.) 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-95607, filed 5/9/01, effective 9/1/01. 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 296-24-980 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 L, and WAC 296-800-160.

(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 L, and WAC 296-800-160.

(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.

(3) 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.

(4) 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) and (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 Maximum proof-test current, mA (gloves only)	Proof-test voltage rms V	267-mm (10.5-in) glove	356-mm (14-in) glove	406-mm (16-in) glove	457-mm (18-in) glove
Class of equipment					
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	Table A-4. -Glove Tests-Water Level ^{1, 2}	mm.	A-C proof-test in.	mm.	D-C proof-test in.
	0	20,000	Class of glove				
	1	40,000	0	38	1.5	38	1.5
	2	50,000	1	38	1.5	51	2.0
	3	60,000	2	64	2.5	76	3.0
	4	70,000	3	89	3.5	102	4.0
			4	127	5.0	153	6.0

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.

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	Maximum use voltage ¹ a-c-rms	Retest voltage ² a-c-rms	Retest voltage ² d-c-rms
Class of equipment			
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.

¹The 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. ¹
Rubber insulating gloves	Before first issue and every 6 months thereafter. ¹
Rubber insulating sleeves	Before first issue and every 12 months thereafter. ¹

¹ If the insulating equipment has been electrically tested but not issued for service, it may not be placed into service unless it has been electrically tested within the previous 12 months.

(5) 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-24-980, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-24-980, filed 11/22/91, effective 12/24/91.]

Chapter 296-27 WAC RECORDKEEPING AND REPORTING

WAC

296-27-00101	Purpose and scope.
296-27-00103	Partial exemption for employers with ten or fewer employees.
296-27-00105	Partial exemption for private employers in certain industries.
296-27-00107	Keeping records for more than one agency.
296-27-00109	Nonmandatory appendix to this section—Partially exempt industries.
296-27-010	Repealed.
296-27-011	Recordkeeping forms and recording criteria.
296-27-01101	Recording criteria.

296-27-01103	Determination of work-relatedness.
296-27-01105	Determination of new cases.
296-27-01107	General recording criteria.
296-27-01109	Recording criteria for needlestick and sharps injuries.
296-27-01111	Recording criteria for cases involving medical removal under OSHA standards.
296-27-01113	Recording criteria for cases involving occupational hearing loss.
296-27-01115	Recording criteria for work-related tuberculosis cases.
296-27-01117	Recording criteria for cases involving work-related musculoskeletal disorders.
296-27-01119	Forms.
296-27-020	Repealed.
296-27-021	Other injury and illness recordkeeping requirements.
296-27-02101	Multiple business establishments.
296-27-02103	Covered employees.
296-27-02105	Annual summary.
296-27-02107	Retention and updating.
296-27-02109	Change in business ownership.
296-27-02111	Employee involvement.
296-27-02113	Prohibition against discrimination.
296-27-02117	Variances from the recordkeeping rule.
296-27-030	Repealed.
296-27-031	Reporting fatality, injury, and illness information.
296-27-03101	Providing records to government representatives.
296-27-03103	Annual OSHA injury and illness survey.
296-27-03105	Requests from the Bureau of Labor Statistics for data.
296-27-040	Repealed.
296-27-041	Transition from the former rule.
296-27-04101	Summary and posting of the 2001 data.
296-27-04103	Retention and updating of old forms.
296-27-050	Repealed.
296-27-051	Definitions.
296-27-05101	Definitions.
296-27-060	Repealed.
296-27-070	Repealed.
296-27-075	Repealed.
296-27-077	Repealed.
296-27-078	Repealed.
296-27-080	Repealed.
296-27-090	Repealed.
296-27-100	Repealed.
296-27-110	Repealed.
296-27-120	Repealed.
296-27-121	Repealed.
296-27-130	Repealed.
296-27-140	Repealed.
296-27-15501	Repealed.
296-27-15503	Repealed.
296-27-15505	Repealed.
296-27-210	Repealed.
296-27-21001	Repealed.
296-27-21005	Repealed.
296-27-21010	Repealed.
296-27-21015	Repealed.
296-27-21020	Repealed.
296-27-21025	Repealed.
296-27-21030	Repealed.
296-27-21035	Repealed.
296-27-21040	Repealed.
296-27-21045	Repealed.
296-27-21050	Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-27-010	Purpose and scope. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-020	Definitions. [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.] Repealed by 02-01-064,

296-27-030	filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. Log and summary of occupational injuries and illnesses. [Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-030, 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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-100	Falsification, failure to keep records or reports. [Order 74-22, § 296-27-100, filed 5/6/74.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-040	Period covered by logs. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-110	Change of ownership. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-050	Supplementary record. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-120	Petitions for recordkeeping exceptions. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-060	Annual summary. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-121	Additional recordkeeping requirements. [Order 76-29, § 296-27-121, filed 9/30/76.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-070	Retention of records. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-130	Description of statistical program. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-075	Employees not in fixed establishments. [Order 74-22, § 296-27-075, filed 5/6/74.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-140	Duties of employers—Statistical program. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-077	Small employers. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-15501	Division of consultation and compliance, public records. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
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). [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-15503	Special exemptions for confidential reports within the department's files. [Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-11-054, § 296-27-15503, filed 5/20/97, effective 6/20/97. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-27-15503, filed 8/20/96, effective 10/15/96; 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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-080	Access to records. [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.] Repealed by 02-01-064, filed 12/14/01, effective 1/1/02. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-15505	Accident investigation reports. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-27-090	Reporting of fatality or multiple hospitalization incidents. [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.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.	296-27-210	Abatement verification. [Statutory Authority: RCW 49.17.040. 99-02-019, § 296-27-210, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
		296-27-21001	What is the purpose of this rule? [Statutory Authority: RCW 49.17.040. 99-02-019, § 296-27-21001, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
		296-27-21005	When does this rule apply? [Statutory Authority: RCW 49.17.040. 99-02-019, § 296-27-21005, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

- 296-27-21010 What definitions apply to this rule? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21010, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21015 What must an employer do when asked to abate a violation? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21015, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21020 When must an employer submit additional documentation of abatement? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21020, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21025 When must an employer provide abatement plans? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21025, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21030 When must an employer submit progress reports? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21030, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21035 What must an employer do to keep employees informed about abatement activities? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21035, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21040 How will the department determine the date that documents are submitted? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21040, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21045 What are the requirements related to movable equipment? [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21045, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-27-21050 Appendix A (Nonmandatory). [Statutory Authority: RCW 49.17.040, 99-02-019, § 296-27-21050, filed 12/29/98, effective 7/1/99.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

WAC 296-27-00101 Purpose and scope. (1) Purpose.

The purpose of this standard is to require employers to record and report work-related fatalities, injuries and illnesses.

Note 1: Recording or reporting a work-related injury, illness, or fatality does not mean that the employer or employee was at fault, that a rule has been violated, or that the employee is eligible for workers' compensation or other benefits.

(2) Scope. All employers covered by the Washington Industrial Safety and Health Act (WISHA) are covered by this standard. However, most employers do not have to keep injury and illness records unless WISHA, OSHA, or the Bureau of Labor Statistics (BLS) informs them in writing that they must keep records. For example, employers with ten or fewer employees and business establishments in certain industry classifications are partially exempt from keeping injury and illness records.

Note: The recordkeeping and reporting requirements of this chapter are separate and distinct from the recordkeeping and reporting requirements under Title 51 RCW (the Industrial Insurance Act) unless otherwise noted in this chapter.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-00101, filed 12/14/01, effective 1/1/02.]

[2002 WAC Supp.—page 1070]

WAC 296-27-00103 Partial exemption for employers with ten or fewer employees. (1) Basic requirement.

(a) If your company had ten or fewer employees at all times during the last calendar year, you do not need to keep injury and illness records unless WISHA, OSHA, or the BLS informs you in writing that you must keep records under this section. However, as required by WAC 296-27-03101, all employers covered by the WISH Act must report any workplace incident that results in a fatality or the hospitalization of two or more employees.

(b) If your company had more than ten employees at any time during the last calendar year, you must keep injury and illness records unless your establishment is classified as a partially exempt industry under WAC 296-27-00105.

(2) Implementation.

(a) **Is the partial exemption for size based on the size of my entire company or on the size of an individual business establishment?** The partial exemption for size is based on the number of employees in the entire company.

(b) **How do I determine the size of my company to find out if I qualify for the partial exemption for size?** To determine if you are exempt because of size, you need to determine your company's peak employment during the last calendar year. If you had no more than ten employees at any time in the last calendar year, your company qualifies for the partial exemption for size.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-00103, filed 12/14/01, effective 1/1/02.]

WAC 296-27-00105 Partial exemption for private employers in certain industries. (1) Basic requirement.

(a) If your private business establishment is classified in a specific low hazard retail, service, finance, insurance or real estate industry listed in Table 1 you do not need to keep injury and illness records unless WISHA, OSHA, or the BLS asks you to keep the records under WAC 296-27-03105 or 296-27-03107. (Public employers are not included in this exemption, except as indicated in (b) of this subsection.) However, all employers must report to WISHA any workplace incident that results in a fatality or the hospitalization of two or more employees (see WAC 296-800-32005).

(b) If you are a public employer in SIC 821 (elementary and secondary schools) and 823 (libraries), you do not need to keep injury and illness records unless WISHA, OSHA or the BLS asks you to keep the records under WAC 296-27-03105 or 296-27-03107. However, all employers must report to WISHA any workplace incident that results in a fatality or the hospitalization of two or more employees (see WAC 296-800-32005).

(c) If one or more of your company's establishments are classified in a nonexempt industry, you must keep injury and illness records for all of such establishments unless your company is partially exempted because of size under WAC 296-27-00103.

(2) Implementation.

(a) **Does the partial industry classification exemption apply only to business establishments in the retail, services, finance, insurance or real estate industries (SICs 52-89)?** Yes, business establishments classified in agricul-

ture; mining; construction; manufacturing; transportation; communication, electric, gas and sanitary services; or wholesale trade are not eligible for the partial industry classification exemption.

(b) **Is the partial industry classification exemption based on the industry classification of my entire company or on the classification of individual business establishments operated by my company?** The partial industry classification exemption applies to individual business establishments. If a company has several business establishments engaged in different classes of business activities, some of the company's establishments may be required to keep records, while others may be exempt.

(c) **How do I determine the Standard Industrial Classification code for my company or for individual establishments?** You determine your Standard Industrial Classification (SIC) code by using the Standard Industrial Classification manual, *Executive Office of the President, Office of Management and Budget*. You may contact your local L&I office for help in determining your SIC or visit Department of Revenue's website, http://dor.wa.gov/reports/Qbrsearch/sic_list.htm.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-00105, filed 12/14/01, effective 1/1/02.]

WAC 296-27-00107 Keeping records for more than one agency. If you create records to comply with another government agency's injury and illness recordkeeping requirements, OSHA will consider those records as meeting federal recordkeeping requirements if OSHA accepts the other agency's records under a memorandum of understanding with that agency, or if the other agency's records contain the same information as required by 29 CFR, Part 1904 requires you to record. You may contact WISHA or your local L&I office for help in determining whether your records meet OSHA's requirements.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-00107, filed 12/14/01, effective 1/1/02.]

WAC 296-27-00109 Nonmandatory appendix to this section—Partially exempt industries. Employers are not required to keep OSHA injury and illness records for any establishment classified in the following Standard Industrial Classification (SIC) codes, unless they are asked in writing to do so by WISHA, OSHA, or the Bureau of Labor Statistics (BLS). All employers, including those partially exempted by reason of company size or industry classification, must report to WISHA any workplace incident that results in a fatality or the hospitalization of two or more employees (see WAC 296-800-32005).

See Table "1" at the end of this document.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-00109, filed 12/14/01, effective 1/1/02.]

WAC 296-27-010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-011 Recordkeeping forms and recording criteria. This section describes the work-related injuries and illnesses that an employer must enter into the OSHA records and explains the OSHA forms that employers must use to record work-related fatalities, injuries, and illnesses.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-011, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01101 Recording criteria. (1) Basic requirement. Each employer required by this chapter to keep records of fatalities, injuries, and illnesses must record each fatality, injury and illness that:

- Is work-related;
- Is a new case; and
- Meets one or more of the general recording criteria of WAC 296-27-01107 or the application to specific cases of WAC 296-27-01109 through 296-27-01117.

(2) Implementation.

(a) **What sections of this rule describe recording criteria for recording work-related injuries and illnesses?** The table below indicates which sections of the rule address each topic.

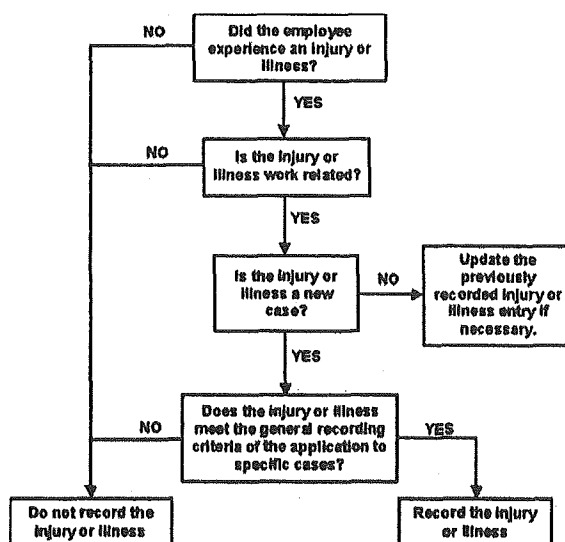
(i) Determination of work-relatedness. See WAC 296-27-01103.

(ii) Determination of a new case. See WAC 296-27-01105.

(iii) General recording criteria. See WAC 296-27-01107.

(iv) Additional criteria. (Needlestick and sharps injury cases, tuberculosis cases, hearing loss cases, medical removal cases, and musculoskeletal disorder cases). See WAC 296-27-01109 through 296-27-01117.

(b) **How do I decide whether a particular injury or illness is recordable?** The decision tree for recording work-related injuries and illnesses below shows the steps involved in making this determination.



(c) **May I be required to keep other records or report additional information?** Yes, the director may require that additional records be kept or additional information reported to achieve the purpose of the WISH Act.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01101, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01103 Determination of work-relatedness. (1) Basic requirement. You must consider an injury or illness to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a preexisting injury or illness. Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment, unless an exception in WAC 296-27-01103 (2)(b) specifically applies.

(2) Implementation.

(a) **What is the "work environment"?** Work environment is defined as "the establishment and other locations where one or more employees are working or are present as a condition of their employment. The work environment includes not only physical locations, but also the equipment or materials used by the employee during the course of his or her work."

(b) **Are there situations where an injury or illness occurs in the work environment and is not considered work-related?** Yes, an injury or illness occurring in the work environment that falls under one of the following exceptions is not work-related, and therefore is not recordable.

You are **not** required to record injuries and illnesses if:

- At the time of the injury or illness, the employee was present in the work environment as a member of the general public rather than as an employee.
- The injury or illness involves signs or symptoms that surface at work but result solely from a nonwork-related event or exposure that occurs outside the work environment.
- The injury or illness results solely from voluntary participation in a wellness program or in a medical, fitness, or recreational activity such as blood donation, physical examination, flu shot, exercise class, racquetball, or baseball.
- The injury or illness is solely the result of an employee eating, drinking, or preparing food or drink for personal consumption (whether bought on the employer's premises or brought in). For example, if the employee is injured by choking on a sandwich while in the employer's establishment, the case would not be considered work-related.

Note: If the employee is made ill by ingesting food contaminated by workplace contaminants (such as lead), or gets food poisoning from food supplied by the employer, the case would be considered work-related.

- The injury or illness is solely the result of an employee doing personal tasks (unrelated to their employment) at the establishment outside of the employee's assigned working hours.
- The injury or illness is solely the result of personal grooming, self medication for a nonwork-related condition, or is intentionally self-inflicted.

- The injury or illness is caused by a motor vehicle accident and occurs on a company parking lot or company access road while the employee is commuting to or from work.

- The illness is the common cold or flu.

Note: Contagious diseases such as tuberculosis, brucellosis, hepatitis A, or plague are considered work-related if the employee is infected at work.

- The illness is a mental illness. Mental illness will not be considered work-related unless the employee voluntarily provides the employer with an opinion from a physician or other licensed health care professional with appropriate training and experience (psychiatrist, psychologist, psychiatric nurse practitioner, etc.) stating that the employee has a mental illness that is work-related.

(c) **How do I handle a case if it is not obvious whether the precipitating event or exposure occurred in the work environment or occurred away from work?** In these situations, you must evaluate the employee's work duties and environment to decide whether or not one or more events or exposures in the work environment either caused or contributed to the resulting condition or significantly aggravated a preexisting condition.

(d) **How do I know if an event or exposure in the work environment "significantly aggravated" a preexisting injury or illness?** A preexisting injury or illness has been significantly aggravated, for purposes of injury and illness recordkeeping, when an event or exposure in the work environment results in any of the following:

- Death, provided that the preexisting injury or illness would likely not have resulted in death but for the occupational event or exposure.
- Loss of consciousness, provided that the preexisting injury or illness would likely not have resulted in loss of consciousness but for the occupational event or exposure.
- One or more days away from work, or days of restricted work, or days of job transfer that otherwise would not have occurred but for the occupational event or exposure.
- Medical treatment in a case where no medical treatment was needed for the injury or illness before the workplace event or exposure, or a change in medical treatment was necessitated by the workplace event or exposure.

(e) **Which injuries and illnesses are considered preexisting conditions?** An injury or illness is a preexisting condition if it resulted solely from a nonwork-related event or exposure that occurred outside the work environment.

(f) **How do I decide whether an injury or illness is work-related if the employee is on travel status at the time the injury or illness occurs?** Injuries and illnesses that occur while an employee is on travel status are work-related if, at the time of the injury or illness, the employee was engaged in work activities "in the interest of the employer." Examples of such activities include travel to and from customer contacts, conducting job tasks, and entertaining or being entertained to transact, discuss, or promote business (work-related entertainment includes only entertainment activities being engaged in at the direction of the employer).

Injuries or illnesses that occur when the employee is on travel status do not have to be recorded if they meet one of the exceptions listed below.

If the employee has:

- Checked into a hotel or motel for one or more days

- Taken a detour for personal reasons

(g) **How do I decide if a case is work-related when the employee is working at home?** Injuries and illnesses that occur while an employee is working at home, including work in a home office, will be considered work-related if the injury or illness occurs while the employee is performing work for pay or compensation in the home, and the injury or illness is directly related to the performance of work rather than to the general home environment or setting. For example, if an employee drops a box of work documents and injures his or her foot, the case is considered work-related. If an employee's fingernail is punctured by a needle from a sewing machine used to perform garment work at home, becomes infected and requires medical treatment, the injury is considered work-related. If an employee is injured because he or she trips on the family dog while rushing to answer a work phone call, the case is not considered work-related. If an employee working at home is electrocuted because of faulty home wiring, the injury is not considered work-related.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01103, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01105 Determination of new cases. (1) Basic requirement. You must consider an injury or illness to be a "new case" if:

(a) The employee has not previously experienced a recorded injury or illness of the same type that affects the same part of the body; or

(b) The employee previously experienced a recorded injury or illness of the same type that affected the same part of the body but had recovered completely (all signs and symptoms had disappeared) from the previous injury or illness and an event or exposure in the work environment caused the signs or symptoms to reappear.

(2) Implementation.

(a) **When an employee experiences the signs or symptoms of a chronic work-related illness, do I need to consider each recurrence of signs or symptoms to be a new case?** No, for occupational illnesses where the signs or symptoms may recur or continue in the absence of an expo-

You may use the following to determine if an injury or illness is work-related.

When a traveling employee checks in to a hotel, motel, or into another temporary residence, he or she establishes a "home away from home." You must evaluate the employee's activities after he or she checks into the hotel, motel, or other temporary residence for their work-relatedness in the same manner as you evaluate the activities of a nontraveling employee. When the employee checks into the temporary residence, he or she is considered to have left the work environment. When the employee begins work each day, he or she reenters the work environment. If the employee has established a "home away from home" and is reporting to a fixed worksite each day, you also do not consider injuries or illnesses work-related if they occur while the employee is commuting between the temporary residence and the job location.

Injuries or illnesses are not considered work-related if they occur while the employee is on a personal detour from a reasonably direct route of travel (e.g., has taken a side trip for personal reasons).

sure in the workplace, the case must only be recorded once. Examples may include occupational cancer, asbestosis, byssinosis and silicosis.

(b) **When an employee experiences the signs or symptoms of an injury or illness as a result of an event or exposure in the workplace, such as an episode of occupational asthma, must I treat the episode as a new case?** Yes, because the episode or recurrence was caused by an event or exposure in the workplace, the incident must be treated as a new case.

(c) **May I rely on a physician or other licensed health care professional to determine whether a case is a new case or a recurrence of an old case?** You are not required to seek the advice of a physician or other licensed health care professional. However, if you do seek such advice, you must follow the physician or other licensed health care professional's recommendation about whether the case is a new case or a recurrence. If you receive recommendations from two or more physicians or other licensed health care professionals, you must make a decision as to which recommendation is the most authoritative (best documented, best reasoned, or most authoritative), and record the case based upon that recommendation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01105, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01107 General recording criteria. (1)

Basic requirement. You must consider an injury or illness to meet the general recording criteria, and therefore to be recordable, if it results in any of the following: Death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. You must also consider a case to meet the general recording criteria if it involves a significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness.

(2) Implementation.

(a) **How do I decide if a case meets one or more of the general recording criteria?** A work-related injury or illness must be recorded if it results in one or more of the following:

- (i) Death. See (b) of this subsection.
- (ii) Days away from work. See (c) of this subsection.
- (iii) Restricted work or transfer to another job. See (d) of this subsection.
- (iv) Medical treatment beyond first aid. See (e) of this subsection.
- (v) Loss of consciousness. See (f) of this subsection.
- (vi) A significant injury or illness diagnosed by a physician or other licensed health care professional. See (g) of this subsection.

(b) **How do I record a work-related injury or illness that results in the employee's death?** You must record an injury or illness that results in death by entering a check mark on the OSHA 300 Log in the space for cases resulting in death. You must also report any work-related fatality to WISHA within eight hours, as required by WAC 296-27-03101.

(c) **How do I record a work-related injury or illness that results in days away from work?** When an injury or illness involves one or more days away from work, you must record the injury or illness on the OSHA 300 Log with a check mark in the space for cases involving days away and an entry of the number of calendar days away from work in the number of days column. If the employee is out for an extended period of time, you must enter an estimate of the days that the employee will be away, and update the day count when the actual number of days is known.

(i) **Do I count the day on which the injury occurred or the illness began?** No, you begin counting days away on the day after the injury occurred or the illness began.

(ii) **How do I record an injury or illness when a physician or other licensed health care professional recommends that the worker stay at home but the employee comes to work anyway?** You must record these injuries and illnesses on the OSHA 300 Log using the check box for cases with days away from work and enter the number of calendar days away recommended by the physician or other licensed health care professional. If a physician or other licensed health care professional recommends days away, you should encourage your employee to follow that recommendation. However, the days away must be recorded whether the injured or ill employee follows the physician or licensed health care professional's recommendation or not. If you receive recommendations from two or more physicians or other licensed health care professionals, you may make a decision as to which recommendation is the most authoritative, and record the case based upon that recommendation.

(iii) **How do I handle a case when a physician or other licensed health care professional recommends that the worker return to work but the employee stays at home anyway?** In this situation, you must end the count of days away from work on the date the physician or other licensed health care professional recommends that the employee return to work.

(iv) **How do I count weekends, holidays, or other days the employee would not have worked anyway?** You must count the number of calendar days the employee was unable to work as a result of the injury or illness, regardless of whether or not the employee was scheduled to work on those day(s). Weekend days, holidays, vacation days or other days off are included in the total number of days recorded if the employee would not have been able to work on those days because of a work-related injury or illness.

(v) **How do I record a case in which a worker is injured or becomes ill on a Friday and reports to work on a Monday, and was not scheduled to work on the weekend?** You need to record this case only if you receive information from a physician or other licensed health care professional indicating that the employee should not have worked, or should have performed only restricted work, during the weekend. If so, you must record the injury or illness as a case with days away from work or restricted work, and enter the day counts, as appropriate.

(vi) **How do I record a case in which a worker is injured or becomes ill on the day before scheduled time off such as a holiday, a planned vacation, or a temporary plant closing?** You need to record a case of this type only if you receive information from a physician or other licensed health care professional indicating that the employee should not have worked, or should have performed only restricted work, during the scheduled time off. If so, you must record the injury or illness as a case with days away from work or restricted work, and enter the day counts, as appropriate.

(vii) **Is there a limit to the number of days away from work I must count?** Yes, you may "cap" the total days away at one hundred eighty calendar days. You are not required to keep track of the number of calendar days away from work if the injury or illness resulted in more than one hundred eighty calendar days away from work and/or days of job transfer or restriction. In such a case, entering one hundred eighty in the total days away column will be considered adequate.

(viii) **May I stop counting days if an employee who is away from work because of an injury or illness retires or leaves my company?** Yes, if the employee leaves your company for some reason unrelated to the injury or illness, such as retirement, a plant closing, or to take another job, you may stop counting days away from work or days of restriction/job transfer. If the employee leaves your company because of the injury or illness, you must estimate the total number of days away or days of restriction/job transfer and enter the day count on the 300 Log.

(ix) **If a case occurs in one year but results in days away during the next calendar year, do I record the case in both years?** No, you only record the injury or illness once. You must enter the number of calendar days away for the injury or illness on the OSHA 300 Log for the year in which the injury or illness occurred. If the employee is still away from work because of the injury or illness when you prepare the annual summary, estimate the total number of calendar days you expect the employee to be away from work, use this number to calculate the total for the annual summary, and then update the initial log entry later when the

day count is known or reaches the one hundred eighty day cap.

(d) **How do I record a work-related injury or illness that results in restricted work or job transfer?** When an injury or illness involves restricted work or job transfer but does not involve death or days away from work, you must record the injury or illness on the OSHA 300 Log by placing a check mark in the space for job transfer or restriction and an entry of the number of restricted or transferred days in the restricted workdays column.

(i) **How do I decide if the injury or illness resulted in restricted work?** Restricted work occurs when, as the result of a work-related injury or illness:

- You keep the employee from performing one or more of the routine functions of his or her job, or from working the full workday that he or she would otherwise have been scheduled to work; or

- A physician or other licensed health care professional recommends that the employee not perform one or more of the routine functions of his or her job, or not work the full workday that he or she would otherwise have been scheduled to work.

(ii) **What is meant by "routine functions"?** For recordkeeping purposes, an employee's routine functions are those work activities the employee regularly performs at least once per week.

(iii) **Do I have to record restricted work or job transfer if it applies only to the day on which the injury occurred or the illness began?** No, you do not have to record restricted work or job transfers if you, or the physician or other licensed health care professional, impose the restriction or transfer only for the day on which the injury occurred or the illness began.

(iv) **If you or a physician or other licensed health care professional recommends a work restriction, is the injury or illness automatically recordable as a "restricted work" case?** No, a recommended work restriction is recordable only if it affects one or more of the employee's routine job functions. To determine whether this is the case, you must evaluate the restriction in light of the routine functions of the injured or ill employee's job. If the restriction from you or the physician or other licensed health care professional keeps the employee from performing one or more of his or her routine job functions, or from working the full workday the injured or ill employee would otherwise have worked, the employee's work has been restricted and you must record the case.

(v) **How do I record a case where the worker works only for a partial work shift because of a work-related injury or illness?** A partial day of work is recorded as a day of job transfer or restriction for recordkeeping purposes, except for the day on which the injury occurred or the illness began.

(vi) **If the injured or ill worker produces fewer goods or services than he or she would have produced prior to the injury or illness but otherwise performs all of the routine functions of his or her work, is the case considered a restricted work case?** No, the case is considered restricted

work only if the worker does not perform all of the routine functions of his or her job or does not work the full shift that he or she would otherwise have worked.

(vii) **How do I handle vague restrictions from a physician or other licensed health care professional, such as that the employee engage only in "light duty" or "take it easy for a week"?** If you are not clear about the physician or other licensed health care professional's recommendation, you may ask that person whether the employee can do all of his or her routine job functions and work all of his or her normally assigned work shift. If the answer to both of these questions is "Yes," then the case does not involve a work restriction and does not have to be recorded as such. If the answer to one or both of these questions is "No," the case involves restricted work and must be recorded as a restricted work case. If you are unable to obtain this additional information from the physician or other licensed health care professional who recommended the restriction, record the injury or illness as a case involving restricted work.

(viii) **What do I do if a physician or other licensed health care professional recommends a job restriction meeting the definition, but the employee does all of his or her routine job functions anyway?** You must record the injury or illness on the OSHA 300 Log as a restricted work case. If a physician or other licensed health care professional recommends a job restriction, you should ensure that the employee complies with that restriction. If you receive recommendations from two or more physicians or other licensed health care professionals, you may make a decision as to which recommendation is the most authoritative, and record the case based upon that recommendation.

(ix) **How do I decide if an injury or illness involved a transfer to another job?** If you assign an injured or ill employee to a job other than his or her regular job for part of the day, the case involves transfer to another job.

Note: This does not include the day on which the injury or illness occurred.

(x) **Are transfers to another job recorded in the same way as restricted work cases?** Yes, both job transfer and restricted work cases are recorded in the same box on the OSHA 300 Log. For example, if you assign, or a physician or other licensed health care professional recommends that you assign, an injured or ill worker to his or her routine job duties for part of the day and to another job for the rest of the day, the injury or illness involves a job transfer. You must record an injury or illness that involves a job transfer by placing a check in the box for job transfer.

(xi) **How do I count days of job transfer or restriction?** You count days of job transfer or restriction in the same way you count days away from work, using (c)(i) through (viii) of this subsection. The only difference is that, if you permanently assign the injured or ill employee to a job that has been modified or permanently changed in a manner that eliminates the routine functions the employee was restricted from performing, you may stop the day count when the modification or change is made permanent. You must count at least one day of restricted work or job transfer for such cases.

(e) **How do I record an injury or illness that involves medical treatment beyond first aid?** If a work-related injury or illness results in medical treatment beyond first aid, you must record it on the OSHA 300 Log. If the injury or illness did not involve death, one or more days away from work, one or more days of restricted work, or one or more days of job transfer, you enter a check mark in the box for cases where the employee received medical treatment but remained at work and was not transferred or restricted.

(i) **What is the definition of medical treatment?** "Medical treatment" means the management and care of a patient to combat disease or disorder. For the purposes of this section, medical treatment does not include:

- Visits to a physician or other licensed health care professional solely for observation or counseling;
- The conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes (e.g., eye drops to dilate pupils); or
- "First aid" as defined in (e) of this subsection.

(ii) **What is "first aid"?** For the purposes of this section, "first aid" means the following:

- Using a nonprescription medication at nonprescription strength (for medications available in both prescription and nonprescription form, a recommendation by a physician or other licensed health care professional to use a nonprescription medication at prescription strength is considered medical treatment for recordkeeping purposes);
- Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment);
- Cleaning, flushing or soaking wounds on the surface of the skin;
- Using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™ (other wound closing devices such as sutures, staples, etc., are considered medical treatment);
- Using hot or cold therapy;
- Using any nonrigid means of support, such as elastic bandages, wraps, nonrigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes);
- Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.);
- Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister;
- Using eye patches;
- Removing foreign bodies from the eye using only irrigation or a cotton swab;
- Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means;
- Using finger guards;
- Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes); or
- Drinking fluids for relief of heat stress.

(iii) **Are any other procedures included in first aid?** No, this is a complete list of all treatments considered first aid for the purpose of this section.

(iv) **Does the professional status of the person providing the treatment have any effect on what is considered first aid or medical treatment?** No, the treatments listed in (e)(ii) of this subsection are considered to be first aid regardless of the professional status of the person providing the treatment. Even when these treatments are provided by a physician or other licensed health care professional, they are considered first aid for the purposes of this section. Similarly, treatment beyond first aid is considered to be medical treatment even when it is provided by someone other than a physician or other licensed health care professional.

(v) **What if a physician or other licensed health care professional recommends medical treatment but the employee does not follow the recommendation?** If a physician or other licensed health care professional recommends medical treatment, you should encourage the injured or ill employee to follow that recommendation. However, you must record the case even if the injured or ill employee does not follow the physician or other licensed health care professional's recommendation.

(f) **Is every work-related injury or illness case involving a loss of consciousness recordable?** Yes, you must record a work-related injury or illness if the worker becomes unconscious, regardless of the length of time the employee remains unconscious.

(g) **What is a "significant" diagnosed injury or illness that is recordable under the general criteria even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness?** Work-related cases involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum must always be recorded under the general criteria at the time of diagnosis by a physician or other licensed health care professional.

Note: OSHA believes that most significant injuries and illnesses will result in one of the criteria listed in WAC 296-27-01107(1): Death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness. However, there are some significant injuries, such as a punctured eardrum or a fractured toe or rib, for which neither medical treatment nor work restrictions may be recommended. In addition, there are some significant progressive diseases, such as byssinosis, silicosis, and some types of cancer, for which medical treatment or work restrictions may not be recommended at the time of diagnosis but are likely to be recommended as the disease progresses. Cancer, chronic irreversible diseases, fractured or cracked bones, and punctured eardrums are generally considered significant injuries and illnesses, and must be recorded at the initial diagnosis, even if medical treatment or work restrictions are not recommended, or are postponed, in a particular case.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01107, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01109 Recording criteria for needlestick and sharps injuries. (1) Basic requirement. You must record all work-related needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material (as defined by

WAC 296-62-08001). You must enter the case on the OSHA 300 Log as an injury. To protect the employee's privacy, you may not enter the employee's name on the OSHA 300 Log (see the requirements for privacy cases in WAC 296-27-01119).

(2) Implementation.

(a) **What does "other potentially infectious materials" mean?** The term "other potentially infectious materials" is defined in the bloodborne pathogens portion of Part J (Biological Agents) of chapter 296-62 WAC, General occupational health standards. These materials include:

- The following human body fluids: Semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

- Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

- HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

(b) **Does this mean that I must record all cuts, lacerations, punctures, and scratches?** No, you need to record cuts, lacerations, punctures, and scratches only if they are work-related and involve contamination with another person's blood or other potentially infectious material. If the cut, laceration, or scratch involves a clean object, or a contaminant other than blood or other potentially infectious material, you need to record the case only if it meets one or more of the recording criteria in WAC 296-27-01107.

(c) **If I record an injury and the employee is later diagnosed with an infectious bloodborne disease, do I need to update the OSHA 300 Log?** Yes, you must update the classification of the case on the OSHA 300 Log if the case results in death, days away from work, restricted work, or job transfer. You must also update the description to identify the infectious disease and change the classification of the case from an injury to an illness.

(d) **What if one of my employees is splashed or exposed to blood or other potentially infectious material without being cut or scratched? Do I need to record this incident?** You need to record such an incident on the OSHA 300 Log as an illness if:

- (i) It results in the diagnosis of a bloodborne illness, such as HIV, hepatitis B, or hepatitis C; or

- (ii) It meets one or more of the recording criteria in WAC 296-27-01107.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01109, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01111 Recording criteria for cases involving medical removal under OSHA standards. (1) Basic requirement. If an employee is medically removed under the medical surveillance requirements, you must record the case on the OSHA 300 Log.

(2) Implementation.

(a) **How do I classify medical removal cases on the OSHA 300 Log?** You must enter each medical removal case on the OSHA 300 Log as either a case involving days away from work or a case involving restricted work activity, depending on how you decide to comply with the medical removal requirement. If the medical removal is the result of a chemical exposure, you must enter the case on the OSHA 300 Log by checking the "poisoning" column.

(b) **Do all standards have medical removal provisions?** No, some OSHA standards, such as the standards covering bloodborne pathogens and noise, do not have medical removal provisions. Many standards that cover specific chemical substances have medical removal provisions. These standards include, but are not limited to, lead, cadmium, methylene chloride, formaldehyde, and benzene.

(c) **Do I have to record a case where I voluntarily removed the employee from exposure before the medical removal criteria are met?** No, if the case involves voluntary medical removal before the medical removal levels required by this standard, you do not need to record the case on the OSHA 300 Log.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01111, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01113 Recording criteria for cases involving occupational hearing loss. (1) Basic requirement. If an employee's hearing test (audiogram) reveals that a recordable threshold shift (RTS) has occurred, you must record the case on the OSHA 300 Log.

(2) Implementation.

(a) **What is a recordable threshold shift?** For the period January 1, 2002, through December 31, 2002, a recordable threshold shift, or RTS, is a change in hearing threshold, relative to the most recent audiogram for that employee of an average of 25 decibels (dB) or more at 2000, 3000, and 4000 hertz in one or both ears. Effective January 1, 2003, a recordable threshold shift, or RTS, is a change in hearing threshold, relative to the most recent audiogram for that employee, of an average of 10 decibels (dB) or more at 2000, 3000, and 4000 hertz in one or both ears.

(b) **How do I determine whether an RTS has occurred?** If the employee has never previously experienced a recordable hearing loss, you must compare the employee's current audiogram with that employee's baseline audiogram. If the employee has previously experienced a recordable hearing loss, you must compare the employee's current audiogram with the employee's revised baseline audiogram (the audiogram reflecting the employee's previous recordable hearing loss case).

(c) **May I adjust the audiogram results to reflect the effects of aging on hearing?** Yes, when comparing audiogram results for determination of an RTS, you may adjust the results for the employee's age when the audiogram was taken using the following tables:

TABLE F-1 - AGE CORRECTION VALUES IN DECIBELS FOR MALES

Years	Audiometric Test Frequency (Hz)				
	1000	2000	3000	4000	6000
20 or younger.....	5	3	4	5	8
21.....	5	3	4	5	8
22.....	5	3	4	5	8
23.....	5	3	4	6	9
24.....	5	3	5	6	9
25.....	5	3	5	7	10
26.....	5	4	5	7	10
27.....	5	4	6	7	11
28.....	6	4	6	8	11
29.....	6	4	6	8	12
30.....	6	4	6	9	12
31.....	6	4	7	9	13
32.....	6	5	7	10	14
33.....	6	5	7	10	14
34.....	6	5	8	11	15
35.....	7	5	8	11	15
36.....	7	5	9	12	16
37.....	7	6	9	12	17
38.....	7	6	9	13	17
39.....	7	6	10	14	18
40.....	7	6	10	14	19
41.....	7	6	10	14	20
42.....	8	7	11	16	20
43.....	8	7	12	16	21
44.....	8	7	12	17	22
45.....	8	7	13	18	23
46.....	8	8	13	19	24
47.....	8	8	14	19	24
48.....	9	8	14	20	25
49.....	9	9	15	21	26
50.....	9	9	16	22	27
51.....	9	9	16	23	28
52.....	9	10	17	24	29
53.....	9	10	18	25	30
54.....	10	10	18	26	31
55.....	10	11	19	27	32
56.....	10	11	20	28	34
57.....	10	11	21	29	35
58.....	10	12	22	31	36
59.....	11	12	22	32	37
60 or older.....	11	13	23	33	38

TABLE F-2 - AGE CORRECTION VALUES IN DECIBELS FOR FEMALES

Years	Audiometric Test Frequency (Hz)				
	1000	2000	3000	4000	6000
20 or younger.....	7	4	3	3	6
21.....	7	4	4	3	6
22.....	7	4	4	4	6
23.....	7	5	4	4	7
24.....	7	5	4	4	7
25.....	8	5	4	4	7
26.....	8	5	5	4	8
27.....	8	5	5	5	8
28.....	8	5	5	5	8
29.....	8	5	5	5	9
30.....	8	6	5	5	9
31.....	8	6	6	5	9
32.....	9	6	6	6	10

Years	Audiometric Test Frequency (Hz)				
	1000	2000	3000	4000	6000
33.....	9	6	6	6	10
34.....	9	6	6	6	10
35.....	9	6	7	7	11
36.....	9	7	7	7	11
37.....	9	7	7	7	12
38.....	10	7	7	7	12
39.....	10	7	8	8	12
40.....	10	7	8	8	13
41.....	10	8	8	8	13
42.....	10	8	9	9	13
43.....	11	8	9	9	14
44.....	11	8	9	9	14
45.....	11	8	10	10	15
46.....	11	9	10	10	15
47.....	11	9	10	11	16
48.....	12	9	11	11	16
49.....	12	9	11	11	16
50.....	12	10	11	12	17
51.....	12	10	12	12	17
52.....	12	10	12	13	18
53.....	13	10	13	13	18
54.....	13	11	13	14	19
55.....	13	11	14	14	19
56.....	13	11	14	15	20
57.....	13	11	15	15	20
58.....	14	12	15	16	21
59.....	14	12	16	16	21
60 or older.....	14	12	16	17	22

(d) **Do I have to record the hearing loss if I am going to retest the employee's hearing?** No, if you retest the employee's hearing within thirty days of the first test, and the retest does not confirm the RTS, you are not required to record the hearing loss case on the OSHA 300 Log. If the retest confirms the RTS, you must record the hearing loss illness within seven calendar days of the retest.

(e) **Are there any special rules for determining whether a hearing loss case is work-related?** Yes, hearing loss is presumed to be work-related if the employee is exposed to noise in the workplace at an 8-hour time-weighted average of 85 dBA or greater. For hearing loss cases where the employee is not exposed to this level of noise, you must use the rules in WAC 296-27-01103 to determine if the hearing loss is work-related.

(f) **If a physician or other licensed health care professional determines the hearing loss is not work-related, do I still need to record the case?** If a physician or other licensed health care professional determines that the hearing loss is not work-related or has not been significantly aggravated by occupational noise exposure, you are not required to consider the case work-related or to record the case on the OSHA 300 Log.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01113, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01115 Recording criteria for work-related tuberculosis cases. (1) Basic requirement. If any of your employees has been occupationally exposed to anyone with a known case of active tuberculosis (TB), and that employee subsequently develops a tuberculosis infection, as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional, you must record the case on the OSHA 300 Log by checking the "respiratory condition" column.

(2) Implementation.

(a) **Do I have to record, on the Log, a positive TB skin test result obtained at a preemployment physical?** No, you do not have to record it because the employee was not occupationally exposed to a known case of active tuberculosis in your workplace.

(b) **May I line-out or erase a recorded TB case if I obtain evidence that the case was not caused by occupational exposure?** Yes, you may line-out or erase the case from the Log under the following circumstances:

- The worker is living in a household with a person who has been diagnosed with active TB;
- The public health department has identified the worker as a contact of an individual with a case of active TB unrelated to the workplace; or
- A medical investigation shows that the employee's infection was caused by exposure to TB away from work, or proves that the case was not related to the workplace TB exposure.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01115, filed 12/14/01, effective 1/1/02.]

WAC 296-27-01117 Recording criteria for cases involving work-related musculoskeletal disorders.

Note: This section is effective January 1, 2003. During the period January 1, 2002, through December 31, 2002, you are required to record work-related injuries and illnesses involving muscles, nerves, tendons, ligaments, joints, cartilage and spinal discs in the same manner that you would any injury or illness required by this chapter. For entry (M) on the OSHA 300 Log, you must check either the entry for "injury" or "all other illnesses."

(1) **Basic requirement.** If any of your employees experiences a recordable work-related musculoskeletal disorder (MSD), you must record it on the OSHA 300 Log by checking the "musculoskeletal disorder" column.

(2) **Implementation.**

(a) **What is a "musculoskeletal disorder" or MSD?** Musculoskeletal disorders (MSDs) are disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal discs. MSDs do not include disorders caused by slips, trips, falls, motor vehicle accidents, or other similar accidents. Examples of MSDs include: Carpal tunnel syndrome, Rotator cuff syndrome, De Quervain's disease, Trigger finger, Tarsal tunnel syndrome, Sciatica, Epicondylitis, Tendinitis, Raynaud's phenomenon, Carpet layer's knee, Herniated spinal disc, and Low back pain.

(b) **How do I decide which musculoskeletal disorders to record?** There are no special criteria for determining which musculoskeletal disorders to record. An MSD case is recorded using the same process you would use for any other injury or illness. If a musculoskeletal disorder is work-related, and is a new case, and meets one or more of the general recording criteria, you must record the musculoskeletal disorder. The following table will guide you to the appropriate section of the rule for guidance on recording MSD cases.

(i) Determining if the MSD is work-related. See WAC 296-27-01103.

(ii) Determining if the MSD is a new case. See WAC 296-27-01105.

(iii) Determining if the MSD meets one or more of the general recording criteria:

- Days away from work, see WAC 296-27-01107 (2)(c).
- Restricted work or transfer to another job. See WAC 296-27-01107 (2)(d).
- Medical treatment beyond first aid. See WAC 296-27-01107 (2)(e).

(c) **If a work-related MSD case involves only subjective symptoms like pain or tingling, do I have to record it as a musculoskeletal disorder?** The symptoms of an MSD are treated the same as symptoms for any other injury or illness. If an employee has pain, tingling, burning, numbness or any other subjective symptom of an MSD, and the symptoms are work-related, and the case is a new case that meets the recording criteria, you must record the case on the OSHA 300 Log as a musculoskeletal disorder.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01117, filed 12/14/01, effective 1/1/02.]

[2002 WAC Supp—page 1080]

WAC 296-27-01119 Forms. (1) **Basic requirement.** You must use OSHA 300, 300-A, and 301 forms, or equivalent forms, for recordable injuries and illnesses. The OSHA 300 form is called the Log of Work-Related Injuries and Illnesses, the 300-A is the Summary of Work-Related Injuries and Illnesses, and the OSHA 301 form is called the Injury and Illness Incident Report.

(2) **Implementation.**

(a) **What do I need to do to complete the OSHA 300 Log?** You must enter information about your business at the top of the OSHA 300 Log, enter a one or two line description for each recordable injury or illness, and summarize this information on the OSHA 300-A at the end of the year.

(b) **What do I need to do to complete the OSHA 301 Incident Report?** You must complete an OSHA 301 Incident Report form, or an equivalent form, for each recordable injury or illness entered on the OSHA 300 Log.

(c) **How quickly must each injury or illness be recorded?** You must enter each recordable injury or illness on the OSHA 300 Log and 301 Incident Report within seven calendar days of receiving information that a recordable injury or illness has occurred.

(d) **What is an equivalent form?** An equivalent form is one that has the same information, is as readable and understandable, and is completed using the same instructions as the OSHA form it replaces. Many employers use an insurance form instead of the OSHA 301 Incident Report, or supplement an insurance form by adding any additional information listed on the OSHA form.

(e) **May I keep my records on a computer?** Yes, if the computer can produce equivalent forms when they are needed, as described under WAC 296-27-02111 and 296-27-03103, you may keep your records using the computer system.

(f) **Are there situations where I do not put the employee's name on the forms for privacy reasons?** Yes, if you have a "privacy concern case," you may not enter the employee's name on the OSHA 300 Log. Instead, enter "privacy case" in the space normally used for the employee's name. This will protect the privacy of the injured or ill employee when another employee, a former employee, or an authorized employee representative is provided access to the OSHA 300 Log under WAC 296-27-02111. You must keep a separate, confidential list of the case numbers and employee names for your privacy concern cases so you can update the cases and provide the information to the government if asked to do so.

(g) **How do I determine if an injury or illness is a privacy concern case?** You must consider the following injuries or illnesses to be privacy concern cases:

- An injury or illness to an intimate body part or the reproductive system;
- An injury or illness resulting from a sexual assault;
- Mental illnesses;
- HIV infection, hepatitis, or tuberculosis;
- Needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material (WAC 296-27-01109 for definitions); and

• Other illnesses, effective January 1, 2002, if the employee independently and voluntarily requests that his or her name not be entered on the log. Effective January 1, 2003, musculoskeletal disorders (MSDs) are not considered privacy concern cases.

(h) **May I classify any other types of injuries and illnesses as privacy concern cases?** No, this is a complete list of all injuries and illnesses considered privacy concern cases for the purposes of this section.

(i) **If I have removed the employee's name, but still believe that the employee may be identified from the information on the forms, is there anything else that I can do to further protect the employee's privacy?** Yes, if you have a reasonable basis to believe that information describing the privacy concern case may be personally identifiable even though the employee's name has been omitted, you may use discretion in describing the injury or illness on both the OSHA 300 and 301 forms. You must enter enough information to identify the cause of the incident and the general severity of the injury or illness, but you do not need to include details of an intimate or private nature. For example, a sexual assault case could be described as "injury from assault," or an injury to a reproductive organ could be described as "lower abdominal injury."

(j) **What must I do to protect employee privacy if I wish to provide access to the OSHA Forms 300 and 301 to persons other than government representatives, employees, former employees or authorized representatives?** If you decide to voluntarily disclose the forms to persons other than government representatives, employees, former employees or authorized representatives (as required by WAC 296-27-02111 and 296-27-03103), you must remove or hide the employees' names and other personally identifying information, except for the following cases. You may disclose the forms with personally identifying information only:

(i) To an auditor or consultant hired by the employer to evaluate the safety and health program;

(ii) To the extent necessary for processing a claim for workers' compensation or other insurance benefits; or

(iii) To a public health authority or law enforcement agency for uses and disclosures for which consent, an authorization, or opportunity to agree or object is not required under Department of Health and Human Services Standards for Privacy of Individually Identifiable Health Information, 45 CFR 164.512.

(3) Falsification, failure to keep records or reports.

(a) 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 ten thousand dollars, or by imprisonment for not more than six months or by both."

(b) 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 WAC 296-800-35002 through 296-800-35052.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-01119, filed 12/14/01, effective 1/1/02.]

WAC 296-27-020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-021 Other injury and illness record-keeping requirements.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-021, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02101 Multiple business establishments. (1) Basic requirement. You must keep a separate OSHA 300 Log for each establishment that is expected to be in operation for one year or longer.

(2) Implementation.

(a) **Do I need to keep injury and illness records for short-term establishments (i.e., establishments that will exist for less than a year)?** Yes, however, you do not have to keep a separate OSHA 300 Log for each such establishment. You may keep one OSHA 300 Log that covers all of your short-term establishments. You may also include the short-term establishments' recordable injuries and illnesses on an OSHA 300 Log that covers short-term establishments for individual company divisions or geographic regions.

(b) **May I keep the records for all of my establishments at my headquarters location or at some other central location?** Yes, you may keep the records for an establishment at your headquarters or other central location if you can:

• Transmit information about the injuries and illnesses from the establishment to the central location within seven calendar days of receiving information that a recordable injury or illness has occurred; and

• Produce and send the records from the central location to the establishment within the time frames required by WAC 296-27-02111 and 296-27-03103 when you are required to provide records to a government representative, employees, former employees or employee representatives.

(c) **Some of my employees work at several different locations or do not work at any of my establishments at all. How do I record cases for these employees?** You must link each of your employees with one of your establishments, for recordkeeping purposes. You must record the injury and illness on the OSHA 300 Log of the injured or ill employee's establishment, or on an OSHA 300 Log that covers that employee's short-term establishment.

(d) **How do I record an injury or illness when an employee of one of my establishments is injured or becomes ill while visiting or working at another of my establishments, or while working away from any of my establishments?** If the injury or illness occurs at one of your establishments, you must record the injury or illness on the OSHA 300 Log of the establishment at which the injury or illness occurred. If the employee is injured or becomes ill and is not at one of your establishments, you must record the case on the OSHA 300 Log at the establishment at which the employee normally works.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02101, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02103 Covered employees. (1) Basic requirement. You must record on the OSHA 300 Log the recordable injuries and illnesses of all employees on your payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers. You also must record the recordable injuries and illnesses that occur to employees who are not on your payroll if you supervise these employees on a day-to-day basis. If your business is organized as a sole proprietorship or partnership, the owner or partners are not considered employees for recordkeeping purposes.

(2) Implementation.

(a) **If a self-employed person is injured or becomes ill while doing work at my business, do I need to record the injury or illness?** No, self-employed individuals are not covered by the WISH Act or this standard.

(b) **If I obtain employees from a temporary help service, employee leasing service, or personnel supply service, do I have to record an injury or illness occurring to one of those employees?** You must record these injuries and illnesses if you supervise these employees on a day-to-day basis.

(c) **If an employee in my establishment is a contractor's employee, must I record an injury or illness occurring to that employee?** If the contractor's employee is under the day-to-day supervision of the contractor, the contractor is responsible for recording the injury or illness. If you supervise the contractor employee's work on a day-to-day basis, you must record the injury or illness.

(d) **Must the personnel supply service, temporary help service, employee leasing service, or contractor also record the injuries or illnesses occurring to temporary, leased or contract employees that I supervise on a day-to-day basis?** No, you and the temporary help service, employee leasing service, personnel supply service, or contractor should coordinate your efforts to make sure that each injury and illness is recorded only once: Either on your OSHA 300 Log (if you provide day-to-day supervision) or on the other employer's OSHA 300 Log (if that company provides day-to-day supervision).

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02103, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02105 Annual summary. (1) Basic requirement. At the end of each calendar year, you must:

- Review the OSHA 300 Log to verify that the entries are complete and accurate, and correct any deficiencies identified;
- Create an annual summary of injuries and illnesses recorded on the OSHA 300 Log;
- Certify the summary; and
- Post the annual summary.

(2) Implementation.

(a) **How extensively do I have to review the OSHA 300 Log entries at the end of the year?** You must review

the entries as extensively as necessary to make sure that they are complete and correct.

(b) **How do I complete the annual summary?** You must:

- Total the columns on the OSHA 300 Log (if you had no recordable cases, enter zeros for each column total); and
- Enter the calendar year covered, the company's name, establishment name, establishment address, annual average number of employees covered by the OSHA 300 Log, and the total hours worked by all employees covered by the OSHA 300 Log.
- If you are using an equivalent form other than the OSHA 300-A summary form, as permitted under WAC 296-27-01105, the summary you use must also include the employee access and employer penalty statements found on the OSHA 300-A summary form.

(c) **How do I certify the annual summary?** A company executive must certify that he or she has examined the OSHA 300 Log and that he or she reasonably believes, based on his or her knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

(d) **Who is considered a company executive?** The company executive who certifies the log must be one of the following persons:

- An owner of the company (only if the company is a sole proprietorship or partnership);
- An officer of the corporation;
- The highest ranking company official working at the establishment; or
- The immediate supervisor of the highest ranking company official working at the establishment.

(e) **How do I post the annual summary?** You must post a copy of the annual summary in each establishment in a conspicuous place or places where notices to employees are customarily posted. You must ensure that the posted annual summary is not altered, defaced or covered by other material.

(f) **When do I have to post the annual summary?** You must post the summary no later than February 1 of the year following the year covered by the records and keep the posting in place until April 30.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02105, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02107 Retention and updating. (1) Basic requirement. You must save the OSHA 300 Log, the privacy case list (if one exists), the annual summary, and the OSHA 301 Incident Report forms for five years following the end of the calendar year that these records cover.

(2) Implementation.

(a) **Do I have to update the OSHA 300 Log during the five-year storage period?** Yes, during the storage period, you must update your stored OSHA 300 Logs to include newly discovered recordable injuries or illnesses and to show any changes that have occurred in the classification of previously recorded injuries and illnesses. If the description or outcome of a case changes, you must remove or line-out the original entry and enter the new information.

(b) **Do I have to update the annual summary?** No, you are not required to update the annual summary, but you may do so if you wish.

(c) **Do I have to update the OSHA 301 Incident Reports?** No, you are not required to update the OSHA 301 Incident Reports, but you may do so if you wish.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02107, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02109 Change in business ownership. If your business changes ownership, you are responsible for recording and reporting work-related injuries and illnesses only for that period of the year during which you owned the establishment. You must transfer these records to the new owner. The new owner must save all records of the establishment kept by the prior owner, as required by WAC 296-27-02107, but need not update or correct the records of the prior owner.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02109, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02111 Employee involvement. (1) Basic requirement. Your employees and their representatives must be involved in the recordkeeping system in several ways.

(a) You must inform each employee of how he or she is to report an injury or illness to you.

(b) You must provide limited access to your injury and illness records for your employees and their representatives.

(2) Implementation.

(a) **What must I do to make sure that employees report work-related injuries and illnesses to me?**

- You must set up a way for employees to report work-related injuries and illnesses promptly; and

- You must tell each employee how to report work-related injuries and illnesses to you.

(b) **Do I have to give my employees and their representatives access to the OSHA injury and illness records?** Yes, your employees, former employees, their personal representatives, and their authorized employee representatives have the right to access the OSHA injury and illness records, with some limitations, as discussed below.

- **Who is an authorized employee representative?** An authorized employee representative is an authorized collective bargaining agent of employees.

- **Who is a "personal representative" of an employee or former employee?** A personal representative is:

- Any person that the employee or former employee designates as such, in writing; or

- The legal representative of a deceased or legally incapacitated employee or former employee.

- **If an employee or representative asks for access to the OSHA 300 Log, when do I have to provide it?**

- When an employee, former employee, personal representative, or authorized employee representative asks for copies of your current or stored OSHA 300 Log(s) for an establishment the employee or former employee has worked in, you must give the requester a copy of the relevant OSHA 300 Log(s) by the end of the next business day.

- **May I remove the names of the employees or any other information from the OSHA 300 Log before I give copies to an employee, former employee, or employee representative?** No, you must leave the names on the OSHA 300 Log. However, to protect the privacy of injured and ill employees, you may not record the employee's name on the OSHA 300 Log for certain "privacy concern cases," as specified in WAC 296-27-01119 (2)(f) through (i).

- **If an employee or representative asks for access to the OSHA 301 Incident Report, when do I have to provide it?**

- When an employee, former employee, or personal representative asks for a copy of the OSHA 301 Incident Report describing an injury or illness to that employee or former employee, you must give the requester a copy of the OSHA 301 Incident Report containing that information by the end of the next business day.

- When an authorized employee representative asks for copies of the OSHA 301 Incident Reports for an establishment where the agent represents employees under a collective bargaining agreement, you must give copies of those forms to the authorized employee representative within seven calendar days. You are only required to give the authorized employee representative information from the OSHA 301 Incident Report section titled "Tell us about the case." You must remove all other information from the copy of the OSHA 301 Incident Report or the equivalent substitute form that you give to the authorized employee representative.

- **May I charge for the copies?** No, you may not charge for these copies the first time they are provided. However, if one of the designated persons asks for additional copies, you may assess a reasonable charge for retrieving and copying the records.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02111, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02113 Prohibition against discrimination. Employers are prohibited from discriminating against an employee for reporting a work-related fatality, injury or illness. Employees are also protected when they file a safety and health complaint, or ask for records which are required to be maintained by this section or exercise rights extended by the WISH Act.

(1) WISHA may not issue a variance to a private sector employer and must recognize all variances issued by Federal OSHA.

(2) WISHA may only grant an injury and illness recording and reporting variance to a state or local government employer within the state after obtaining approval to grant the variance from Federal OSHA.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02113, filed 12/14/01, effective 1/1/02.]

WAC 296-27-02117 Variances from the recordkeeping rule. (1) Basic requirement. If you wish to keep records in a different manner from that prescribed in this section, you may submit a variance petition to the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, Washington, DC 20210. You can obtain a variance

only if you can show that your alternative recordkeeping system:

- Collects the same information as this section requires;
 - Meets the purposes of the act; and
 - Does not interfere with the administration of the act.
- (2) Implementation.

(a) What do I need to include in my variance petition?

You must include the following items in your petition:

- Your name and address;
- A list of the state(s) where the variance would be used;
- The address(es) of the business establishment(s) involved;
- A description of why you are seeking a variance;
- A description of the different recordkeeping procedures you propose to use;
- A description of how your proposed procedures will collect the same information as would be collected by this section and achieve the purpose of the act; and
- A statement that you have informed your employees of the petition by giving them or their authorized representative a copy of the petition and by posting a statement summarizing the petition in the same way as notices are posted under 29 CFR 1903.2(a).

(b) How will the Assistant Secretary handle my variance petition? The Assistant Secretary will take the following steps to process your variance petition.

- The Assistant Secretary will offer your employees and their authorized representatives an opportunity to submit written data, views, and arguments about your variance petition.
- The Assistant Secretary may allow the public to comment on your variance petition by publishing the petition in the *Federal Register*. If the petition is published, the notice will establish a public comment period and may include a schedule for a public meeting on the petition.
- After reviewing your variance petition and any comments from your employees and the public, the Assistant Secretary will decide whether or not your proposed recordkeeping procedures will meet the purposes of the act, will not otherwise interfere with the act, and will provide the same information as required by this section. If your procedures meet these criteria, the Assistant Secretary may grant the variance subject to such conditions as he or she finds appropriate.
- If the Assistant Secretary grants your variance petition, OSHA will publish a notice in the *Federal Register* to announce the variance. The notice will include the practices the variance allows you to use, any conditions that apply, and the reasons for allowing the variance.

(c) If I apply for a variance, may I use my proposed recordkeeping procedures while the Assistant Secretary is processing the variance petition? No, alternative recordkeeping practices are only allowed after the variance is approved. You must comply with this section's requirements while the Assistant Secretary is reviewing your variance petition.

(d) If I have already been cited for not following the requirements of this section, will my variance petition have any effect on the citation and penalty? No, in addition,

the Assistant Secretary may elect not to review your variance petition if it includes an element for which you have been cited and the citation is still under review by a court, an administrative law judge (ALJ), or the OSH review commission.

(e) If I receive a variance, may it be revoked at a later date? Yes, a variance may be revoked for good cause. The variance revocation procedures are the same as those followed to request the exception. In cases of willfulness or where necessary for public safety, the Assistant Secretary will:

- Notify you in writing of the facts or conduct that may warrant revocation of your variance; and
- Provide you, your employees, and authorized employee representatives with an opportunity to participate in the revocation procedures.

(f) The department of labor and industries must recognize any variance issued by federal OSHA.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-02117, filed 12/14/01, effective 1/1/02.]

WAC 296-27-030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-031 Reporting fatality, injury, and illness information. (1) Basic requirement. You must report fatalities, injuries and illnesses information as required by WAC 296-800-32005.

(2) Implementation.

(a) If the local L&I office is closed, how do I report the incident? If the local office is closed, you must report a fatality or multiple hospitalization incident by calling either the department at 1-800-4BE-SAFE (1-800-423-7233) or by contacting the Occupational Safety and Health Administration (OSHA) by calling its central number at 1-800-321-6742.

(b) What information do I need to give about the incident? You must give the following information for each fatality or multiple hospitalization incident:

- Name of the work place;
- Location of the incident;
- Time and date of the incident;
- Number of fatalities or hospitalized employees;
- Names of injured employees;
- Contact person and phone number; and
- Brief description of the incident.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-031, filed 12/14/01, effective 1/1/02.]

WAC 296-27-03101 Providing records to government representatives. (1) Basic requirement. When an authorized government representative asks for the records you keep under this section, you must provide copies of the records within four business hours.

(2) Implementation.

(a) What government representatives have the right to get copies of records required by this section? The government representatives authorized to receive the records are:

- A representative of the Secretary of Labor conducting an inspection or investigation under the act;
- A representative of the Secretary of Health and Human Services (including the National Institute for Occupational Safety and Health-NIOSH) conducting an investigation under section 20(b) of the act; or
- A representative of the state department of labor and industries.

(b) **Do I have to produce the records within four hours if my records are kept at a location in a different time zone?** Your response will be considered timely if you give the records to the government representative within four business hours of the request. If you maintain the records at a location in a different time zone, you may use the business hours of the establishment at which the records are located when calculating the deadline.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-03101, filed 12/14/01, effective 1/1/02.]

WAC 296-27-03103 Annual OSHA injury and illness survey. (1) Basic requirement. If you receive OSHA's annual survey form, you must fill it out and send it to OSHA or OSHA's designee, as stated on the survey form. You must report the following information for the year described on the form:

- The number of workers you employed;
- The number of hours worked by your employees; and
- The requested information from the records that you keep under this section.

(2) Implementation.

(a) **Does every employer have to send data to OSHA?** No, each year, OSHA sends injury and illness survey forms to employers in certain industries. In any year, some employers will receive an OSHA survey form and others will not. You do not have to send injury and illness data to OSHA unless you receive a survey form.

(b) **How quickly do I need to respond to an OSHA survey form?** You must send the survey reports to OSHA, or OSHA's designee, by mail or other means described in the survey form, within thirty calendar days, or by the date stated in the survey form, whichever is later.

(c) **Do I have to respond to an OSHA survey form if I am normally exempt from keeping OSHA injury and illness records?** Yes, even if you are exempt from keeping injury and illness records under WAC 296-27-001, OSHA may inform you in writing that it will be collecting injury and illness information from you in the following year. If you receive such a letter, you must keep the injury and illness records required by WAC 296-27-01103 to 296-27-01117 and make a survey report for the year covered by the survey.

(d) **Do employers in Washington have to answer the OSHA survey form?** Yes.

(e) **Does this section affect WISHA/OSHA's authority to inspect my workplace?** No, nothing in this section affects WISHA/OSHA's statutory authority to investigate conditions related to occupational safety and health.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-03103, filed 12/14/01, effective 1/1/02.]

WAC 296-27-03105 Requests from the Bureau of Labor Statistics for data. (1) Basic requirement. If you receive a Survey of Occupational Injuries and Illnesses form from the Bureau of Labor Statistics (BLS), or a BLS designee, you must promptly complete the form and return it following the instructions contained on the survey form.

(2) Implementation.

(a) **Does every employer have to send data to the BLS?** No, each year, the BLS sends injury and illness survey forms to randomly selected employers and uses the information to create the nation's occupational injury and illness statistics. In any year, some employers will receive a BLS survey form and others will not. You do not have to send injury and illness data to the BLS unless you receive a survey form.

(b) **If I get a survey form from the BLS, what do I have to do?** If you receive a Survey of Occupational Injuries and Illnesses form from the Bureau of Labor Statistics (BLS), or a BLS designee, you must promptly complete the form and return it, following the instructions contained on the survey form.

(c) **Do I have to respond to a BLS survey form if I am normally exempt from keeping OSHA injury and illness records?** Yes, even if you are exempt from keeping injury and illness records under WAC 296-27-00103 through 296-27-00107, the BLS may inform you in writing that it will be collecting injury and illness information from you in the coming year. If you receive such a letter, you must keep the injury and illness records required by WAC 296-27-01103 to 296-27-01117 and make a survey report for the year covered by the survey.

(d) **Do I have to answer the BLS survey form if I am located in a state-plan state?** Yes, all employers who receive a survey form must respond to the survey, even those in state-plan states.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-03105, filed 12/14/01, effective 1/1/02.]

WAC 296-27-040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-041 Transition from the former rule.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-041, filed 12/14/01, effective 1/1/02.]

WAC 296-27-04101 Summary and posting of the 2001 data. (1) Basic requirement. If you were required to keep OSHA 200 Logs in 2001, you must post a 2001 annual summary from the OSHA 200 Log of occupational injuries and illnesses for each establishment.

(2) Implementation.

(a) **What do I have to include in the summary?**

(i) You must include a copy of the totals from the 2001 OSHA 200 Log and the following information from that form:

- The calendar year covered;
- Your company name;
- The name and address of the establishment; and
- The certification signature, title and date.

(ii) If no injuries or illnesses occurred at your establishment in 2001, you must enter zeros on the totals line and post the 2001 summary.

(b) When am I required to summarize and post the 2001 information?

- You must complete the summary by February 1, 2002; and

- You must post a copy of the summary in each establishment in a conspicuous place or places where notices to employees are customarily posted. You must ensure that the summary is not altered, defaced or covered by other material.

(c) How long must I post the 2001 summary? You must post the 2001 summary from February 1, 2002 to March 1, 2002.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-04101, filed 12/14/01, effective 1/1/02.]

WAC 296-27-04103 Retention and updating of old forms. You must save your copies of the OSHA 200 and 101 forms for five years following the year to which they relate and continue to provide access to the data as though these forms were the OSHA 300 and 301 forms. You are not required to update your old 200 and 101 forms.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-04103, filed 12/14/01, effective 1/1/02.]

WAC 296-27-050 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-051 Definitions.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-051, filed 12/14/01, effective 1/1/02.]

WAC 296-27-05101 Definitions. Employer means a 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 persons, partnership, or business entity not having employees, and who is covered by the Industrial Insurance Act must be considered both an employer and employee.

Establishment means a single physical location where business is conducted or where services or industrial operations are performed. For activities where employees do not work at a single physical location, such as construction; transportation; communications, electric, gas and sanitary services; and similar operations, the establishment is represented by main or branch offices, terminals, stations, etc., that either supervise such activities or are the base from which personnel carry out these activities.

(1) Can one business location include two or more establishments? Normally, one business location has only one establishment. Under limited conditions, the employer may consider two or more separate businesses that share a

single location to be separate establishments. An employer may divide one location into two or more establishments only when:

- Each of the establishments represents a distinctly separate business;
- Each business is engaged in a different economic activity;
- No one industry description in the *Standard Industrial Classification Manual* (1987) applies to the joint activities of the establishments; and
- Separate reports are routinely prepared for each establishment on the number of employees, their wages and salaries, sales or receipts, and other business information. For example, if an employer operates a construction company at the same location as a lumber yard, the employer may consider each business to be a separate establishment.

(2) Can an establishment include more than one physical location? Yes, but only under certain conditions. An employer may combine two or more physical locations into a single establishment only when:

- The employer operates the locations as a single business operation under common management;
- The locations are all located in close proximity to each other; and
- The employer keeps one set of business records for the locations, such as records on the number of employees, their wages and salaries, sales or receipts, and other kinds of business information. For example, one manufacturing establishment might include the main plant, a warehouse a few blocks away, and an administrative services building across the street.

(3) If an employee telecommutes from home, is his or her home considered a separate establishment? No, for employees who telecommute from home, the employee's home is not a business establishment and a separate OSHA 300 Log is not required. Employees who telecommute must be linked to one of your establishments under WAC 296-27-02101 (2)(c).

Injury or illness means an abnormal condition or disorder. Injuries include cases such as, but not limited to, a cut, fracture, sprain, or amputation. Illnesses include both acute and chronic illnesses, such as, but not limited to, a skin disease, respiratory disorder, or poisoning.

Note: Injuries and illnesses are recordable only if they are new, work-related cases that meet one or more of this section's recording criteria.

"OSHA" means Occupational Safety and Health Administration.

Physician or other licensed health care professional means a physician or other licensed health care professional whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently perform, or be delegated the responsibility to perform, the activities described by this regulation.

You means an employer.

Table "1" - Private Employer Exemptions

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 02-01-064, § 296-27-05101, filed 12/14/01, effective 1/1/02.]

SIC Industry description code

525 Hardware Stores
 542 Meat and Fish Markets
 544 Candy, Nut, and Confectionary Stores
 545 Dairy Products Stores
 546 Retail Bakeries
 549 Miscellaneous Food Stores
 551 New and Used Car Dealers
 552 Used Car Dealers
 554 Gasoline Service Stations
 557 Motorcycle Dealers
 56 Apparel and Accessory Stores
 573 Radio, Television, & Computer Stores
 58 Eating and Drinking Places
 591 Drug Stores and Proprietary Stores
 592 Liquor Stores
 594 Miscellaneous Shopping Goods Stores
 599 Retail Stores, Not Elsewhere Classified
 60 Depository Institutions (banks & savings institutions)
 61 Nondepository
 62 Security and Commodity Brokers
 63 Insurance Carriers
 64 Insurance Agents, Brokers & Services
 653 Real Estate Agents and Managers
 654 Title Abstract Offices
 67 Holding and Other Investment Offices
 722 Photographic Studios, Portrait
 723 Beauty Shops
 724 Barber Shops
 725 Shoe Repair and Shoeshine Parlors
 726 Funeral Service and Crematories
 729 Miscellaneous Personal Services
 731 Advertising Services
 732 Credit Reporting and Collection Services
 733 Mailing, Reproduction, & Stenographic Services
 737 Computer and Data Processing Services
 738 Miscellaneous Business Services
 764 Reupholstery and Furniture Repair
 78 Motion Picture
 791 Dance Studios, Schools, and Halls
 792 Producers, Orchestras, Entertainers
 793 Bowling Centers
 81 Legal Services
 82 Educational Services (schools, colleges, universities and libraries)
 832 Individual and Family Services
 835 Child Day Care Services
 839 Social Services, Not Elsewhere Classified
 841 Museums and Art Galleries
 86 Membership Organizations
 87 Engineering, Accounting, Research, Management and Related Services
 899 Services, not elsewhere classified

Table "2" - Public Employer Exemptions**SIC Industry description code**

821 Public Elementary and Secondary Schools
 823 Public Libraries

WAC 296-27-060 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-070 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-075 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-077 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-078 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-080 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-090 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-100 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-110 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-120 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-121 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-130 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-140 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-15501 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-15503 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-15505 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-210 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21001 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21035 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21045 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-27-21050 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-30 WAC

RULES FOR THE ADMINISTRATION OF THE CRIME VICTIMS COMPENSATION PROGRAM

WAC

296-30-010	Definitions.
296-30-130	Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-30-130	How are death benefits paid to a survivor(s) receiving public or private death benefits? [Statutory Authority: RCW 7.68.030, 7.68.070, 7.68.130, 51.32.050, 00-10-003, § 296-30-130, filed 4/20/00, effective 5/22/00. 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.] Repealed by 01-13-013, filed 6/11/01, effective 7/12/01. Statutory Authority: RCW 7.68.030, 7.68.070.
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WAC 296-30-010 Definitions. The following definitions are used to administer the crime victims compensation program:

Acceptance, accepted condition: A determination by the department that the diagnosis of the claimant's medical or mental health condition is the result of the criminal act. 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

the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Authorization: Notification by a qualified representative of the department that specific treatment, services or equipment provided for the accepted condition is allowable under the claim. Providers must insure they maintain records indicating the name of the qualified representative who authorizes treatment, services or equipment.

Bodily injury: Any harmful or offensive touching, including severe emotional distress where no touching takes place when:

- (1) The victim **is not** the object of the criminal act and:
 - (a) The distress is intentionally or recklessly inflicted by extreme or outrageous conduct;
 - (b) Caused the victim to have a reasonable apprehension of imminent bodily harm; and
 - (c) The victim is in the immediate vicinity at the time of the criminal act.
- (2) The victim **is** the object of the criminal act and:
 - (a) The distress is intentionally or recklessly inflicted by extreme or outrageous conduct; and
 - (b) Caused the victim to have a reasonable apprehension of imminent bodily harm.

Claimant: A victim who submits an application for benefits, or on whose behalf an application is submitted.

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.

Criminal act: An act defined in RCW 7.68.020, the occurrence of which can be verified by the department or which is reasonably credible. Physically impossible acts, highly improbable acts for which verification is not available, or unverified memories of acts occurring prior to the age of two will not be accepted as reasonably credible. In evaluating evidence to determine verification of claimed criminal acts, the department will give greater weight to the quality, than to the quantity, of evidence. Evidence that can be considered for verification of claimed criminal acts includes, but is not limited to, one or more of the following:

- (1) Police or other investigation reports.
- (2) Child protective services or other government agency reports.
- (3) Diaries or journals kept by victims and others.
- (4) Third party reports from school counselors, therapists and others.
- (5) Current medical examinations.
- (6) Medical or psychological forensic evaluations. In the absence of other adequate forensic evaluation reports, independent assessments per WAC 296-31-069 may be conducted when indicated.
- (7) Legal and historical reports.
- (8) Current and past medical and mental health records.
- (9) Reports of interviews with the victim's family members, friends, acquaintances and others who may have knowledge of pertinent facts. When such interviews are necessary to determine eligibility, the victim will be given the choice of

whether to allow the interviews to be conducted. The victim will also be given the understanding that eligibility may be denied if the interviews are not conducted. The department will act according to the victim's choice.

Crisis intervention: Therapy to alleviate the claimant's most pressing problems. The vital mental and safety functions of the claimant 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 temporarily totally disabled, permanently totally disabled, or permanently partially disabled resulting from an accepted condition.

Family therapy: Therapy involving one or more members of the claimant's family, excluding the perpetrator, which centers on issues resulting from the claimant's sexual assault pursuant to WAC 296-30-080.

Group therapy: Therapy involving the claimant, and one or more clients who are not related to the claimant, which includes issues related to the claimant's condition and pertinent to other group members.

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 unit.

Individual therapy: Therapy provided on a one-to-one basis between a therapist and client.

Mental health 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 licensed master level counselors, and other qualified service providers licensed, registered and/or certified with the department of health and registered with the crime victims compensation program. (Refer to WAC 296-31-030 for specific details.)

Permanent partial disability: Any anatomic or functional loss after maximum recovery has been achieved. When the attending provider has reason to believe a permanent functional loss exists, the department 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. 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. Maximum benefit levels are established by statute.

Permanent total disability (pension): A condition permanently incapacitating a claimant from performing work at any gainful employment. Maximum benefit levels are established by statute.

Proper and necessary: (1) Proper and necessary services for the diagnosis or rehabilitative treatment of an accepted condition;

(2) Reflective of accepted standards of good practice within the scope of the provider's license, certification, or registration;

(3) Not delivered primarily for the convenience of the claimant, the claimant's attending provider, or another provider;

(4) Curative or rehabilitative care that produces long lasting changes which reduces the effects of the accepted condition;

(5) Provided at the least cost and in the least intensive setting of care consistent with the other provisions of this definition; and

(6) Concluded once a claimant has reached a state of maximum improvement. Maximum improvement occurs when no fundamental or marked change in an accepted condition can be expected with or without treatment. A claimant's condition may have reached maximum improvement though it might be expected to improve or deteriorate with the passage of time. Once a claimant's condition has reached maximum improvement, treatment that results only in temporary changes is not proper and necessary. Maximum improvement is equivalent to fixed and stable.

Reasonable cooperation: The victim is able to talk to the police and give information to help in the investigation and prosecution of the alleged offender. There may be circumstances in which the victim is not able to fully cooperate. In these instances, consideration is given to the needs of the victim. The department may consider the following issues. The list is not inclusive:

(1) There is fear of retribution from the offender;

(2) There is a mental or physical condition which inhibits cooperation;

(3) The victim is dependent upon the offender for support;

(4) The victim is a minor.

Temporary partial disability (loss of earning power): Partial time loss compensation 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. The claimant must have a reduction in wages of at least five percent before consideration of partial time loss can be made. No partial time loss compensation can be paid after the claimant's condition is stationary. All time loss compensation must be certified by the attending provider based on objective findings.

Temporary total disability (time loss compensation): Time loss compensation may be paid when the claimant is temporarily unable to return to reasonable continuous gainful employment as a direct result of an accepted condition. Maximum benefit levels are established by statute.

Termination of treatment: When treatment is no longer required because the accepted condition for which the claim was allowed has become stable. The provider should submit a report indicating the date the condition became stable to the department. The claimant may require continued treatment for conditions not related to the crime injury condition; however, financial responsibility for such care must be the claimants.

The result of: The test used to define "the result of" 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.

(1) Cause in fact exists if "but for" the acts of the victim the crime that produced the injury would not have occurred.

(2) Proximate cause exists if, once cause in fact is found, it is determined that the acts of the victim:

- (a) Resulted in a foreseeable injury to the victim;
- (b) Played a substantial role in the injury; and
- (c) Were the direct cause of the injury.

Time loss certification: Documentation from a physician, or mental health professional qualified to treat under the Crime Victims Act, based upon objective findings which are specific symptoms that an accepted condition of a claimant either partially or totally incapacitates the claimant from returning to work.

Unjustly enriched: It would not be fair or equitable justice to allow a person to obtain, or have control of, or access to benefits or compensation paid to a victim of crime.

[Statutory Authority: RCW 7.68.030. 01-22-105, § 296-30-010, filed 11/7/01, effective 12/8/01; 00-10-003, § 296-30-010, filed 4/20/00, effective 5/22/00. Statutory Authority: RCW 51.36.010, 7.68.030, 51.04.020 (1) and (4), 51.04.030, 7.68.080 and 7.68.120. 97-02-090, § 296-30-010, filed 12/31/96, effective 1/31/97. 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 296-30-130 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-31 WAC

CRIME VICTIMS COMPENSATION MENTAL HEALTH TREATMENT RULES AND FEES

WAC

- 296-31-030 What are the eligibility requirements of a mental health treatment provider under the Crime Victims Act?
- 296-31-06903 Who may perform independent mental health evaluations for the crime victims compensation program?

WAC 296-31-030 What are the eligibility requirements of a mental health treatment provider under the Crime Victims Act? (1) Mental health providers must qualify as an approved provider and register with the crime victims compensation program before they are authorized to provide treatment and receive payment in accordance with these rules.

(2) The following providers who are permanently licensed or registered in Washington are eligible to register with this program:

- (a) Psychiatrists;
- (b) Psychologists;
- (c) Advanced registered nurse practitioners with a specialty in psychiatric and mental health nursing;
- (d) Ph.Ds not licensed as psychologists and master level counselors whose 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.

(3) Out-of-state providers must be currently licensed, registered and/or certified within the state in which they prac-

tice. Washington requires mental health counselors to have a masters degree to treat Washington crime victim clients.

EXCEPTION: In areas where the department has determined licensed, registered and/or certified providers are not available, the department may consider registration exceptions on an individual basis.

[Statutory Authority: RCW 7.68.030. 01-22-105, § 296-31-030, filed 11/7/01, effective 12/8/01. Statutory Authority: RCW 7.68.030, 7.68.080. 00-03-056, § 296-31-030, filed 1/14/00, effective 2/14/00. Statutory Authority: RCW 7.68.030, 51.04.020(1) and 51.04.030. 95-15-004, § 296-31-030, filed 7/5/95, effective 8/5/95. Statutory Authority: RCW 43.22.050. 92-23-033, § 296-31-030, filed 11/13/92, effective 12/14/92.]

WAC 296-31-06903 Who may perform independent mental health evaluations for the crime victims compensation program? Providers who wish to perform independent mental health evaluations for the crime victims compensation program must be approved examiners and meet the following minimum qualifications:

Counselors	<ul style="list-style-type: none"> ■ Masters or doctorate degree in a field of study related to mental health; and ■ Licensed by the Washington department of health as a social worker, mental health counselor or marriage and family therapist.
Advanced registered nurse practitioners	<ul style="list-style-type: none"> ■ Licensed with the Washington department of health; and ■ Have a specialty in psychiatric and mental health nursing.
Psychologists	<ul style="list-style-type: none"> ■ Licensed with the Washington department of health; or ■ Licensed within Oregon or Idaho by that state's health care licensing authority.
Psychiatrists	<ul style="list-style-type: none"> ■ Board certified; and ■ Licensed with the Washington department of health; or ■ Licensed within Oregon or Idaho by that state's health care licensing authority.
All examiners must have	<ul style="list-style-type: none"> ■ An active practice; or ■ Be a clinical supervisor in an active practice; ■ Five years post licensure clinical experience treating crime victims; or ■ Three years clinical experience treating crime victims and two years supervising clinical work. Note: Geographic need of the program may substitute for some of the above experience requirements.

[Statutory Authority: RCW 7.68.030. 01-22-105, § 296-31-06903, filed 11/7/01, effective 12/8/01. Statutory Authority: RCW 7.68.030, 51.04.030, 51.32.112, 51.32.114. 00-24-065, § 296-31-06903, filed 12/1/00, effective 1/1/01.]

Chapter 296-32 WAC
SAFETY STANDARDS FOR TELECOMMUNICATIONS

WAC

296-32-200	Scope and application.
296-32-220	General.
296-32-230	Training.
296-32-240	Employee protection in public work areas.
296-32-250	Tools and personal protective equipment—General.
296-32-260	Rubber insulating equipment.

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, and chapter 296-800 WAC, the safety and health core rules. 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 296-350-700.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-32-200, filed 5/9/01, effective 9/1/01; Order 76-38, § 296-32-200, filed 12/30/76; Order 75-41, § 296-32-200, filed 12/19/75.]

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 296-800-210 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, and chapter 296-800 WAC, the safety and health core rule book.

(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 and 296-800-310.

(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) (1)
300 V and less	12
Over 300 V, not over 750 V	18
Over 750 V not over 2 kV	24
Over 2 kV, not over 15 kV	36
Over 15 kV, not over 37 kV	42
Over 37 kV, not over 87.5 kV	48
Over 87.5 kV, not over 121 kV	54
Over 121 kV, not over 140 kV	

(1) Avoid contact.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-32-220, filed 5/9/01, effective 9/1/01. 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 chemical hazard communication program as required by WAC 296-800-170, 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-32-230, filed 5/9/01, effective 9/1/01. 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 begins in the vicinity of vehicular or pedestrian traffic that may endanger employees, traffic control signs, devices, and barriers must be positioned and used according to the requirements of chapter 296-155 WAC, Part E. When flaggers are used, employers, responsible contractors and/or project owners must comply with the requirements of WAC 296-155-305.

(b) During hours of darkness, warning lights must be prominently displayed and excavated areas must 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050, 2000 c 239, and chapter 34.05 RCW. 01-07-075, § 296-32-240, filed 3/20/01, effective 4/20/01; 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 WAC 296-800-160 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-32-250, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-32-250, filed 5/9/01, effective 9/1/01. 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. The requirements of WAC 296-24-980, Electrical protective equipment, shall be followed except for Table A-6.

(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) 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.

Any rubber gloves found to be defective shall be removed from service and marked as being defective.

(5) Patching rubber goods is prohibited; rubber protective equipment shall not be vulcanized or patched.

(6) Rubber gloves for workers. 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-32-260, filed 5/9/01, effective 9/1/01; 99-17-094, § 296-32-260, filed 8/17/99, effective 12/1/99; Order 76-38, § 296-32-260, filed 12/30/76; Order 75-41, § 296-32-260, filed 12/19/75.]

Chapter 296-36 WAC

SAFETY STANDARDS—COMPRESSED AIR WORK

WAC

296-36-190

Fire prevention and fire fighting.

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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-36-190, filed 8/8/01, effective 9/1/01; Rules (Part XVI), filed 12/28/62; § 7, filed 3/23/60.]

Chapter 296-37 WAC

STANDARDS FOR COMMERCIAL DIVING OPERATIONS

WAC

296-37-510 Scope and application.
296-37-575 Recordkeeping requirements.

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, the general occupational health standard, chapter 296-62 WAC, and safety and health core rules, chapter 296-800 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-37-510, filed 5/9/01, effective 9/1/01. 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 296-37-575 Recordkeeping requirements. (1) Recording and reporting.

(a) The employer shall comply with the requirements of chapters 296-27, 296-350, and 296-800 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-37-575, filed 5/9/01, effective 9/1/01. 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.]

Chapter 296-45 WAC

SAFETY STANDARDS FOR ELECTRICAL WORKERS

WAC

296-45-015	Scope and application.
296-45-035	Definitions.
296-45-055	Employer's responsibility.
296-45-075	Employer's safety program.
296-45-125	Medical services and first aid.
296-45-25505	Personal protective equipment.
296-45-275	Ladders, platforms, and manhole steps.
296-45-285	Hand, and portable powered tools.
296-45-45510	Sprayers and related equipment.
296-45-48535	Chemical cleaning of boilers and pressure vessels.
296-45-52530	Employee protection in public work areas.
296-45-67545	Refueling operations.

WAC 296-45-015 Scope and application. (1) This chapter covers the operation and maintenance of electric power generation, control, transformation, transmission, and distribution lines and equipment. These provisions apply to:

(a) Power generation, transmission, and distribution installations, including related equipment for the purpose of communication or metering, which are accessible only to qualified employees;

Note: The types of installations covered by this chapter include the generation, transmission, and distribution installations of electric utilities, as well as equivalent installations of industrial establishments. Trolley maintenance, jumpering, and bypass is also covered by this chapter. Supplementary electric generating equipment that is used to supply a workplace for emergency, standby, or similar purposes only is covered under Part L of chapter 296-24 WAC and WAC 296-800-280.

(b) Other installations at an electric power generating station, as follows:

(i) Fuel and ash handling and processing installations, such as coal conveyors;

(ii) Water and steam installations, such as penstocks, pipelines, and tanks, providing a source of energy for electric generators; and

(iii) Chlorine and hydrogen systems.

(c) Test sites where electrical testing involving temporary measurements associated with electric power generation, transmission, and distribution is performed in laboratories, in the field, in substations, and on lines, as opposed to metering, relaying, and routine line work;

(d) Work on or directly associated with the installations covered in subsections (1)(a) through (c) of this section; and

(e) Line-clearance tree-trimming operations, as follows:

(i) This chapter except WAC 296-45-455, applies to line-clearance tree-trimming operations performed by qualified employees (those who are knowledgeable in the construction and operation of electric power generation, transmission, or distribution equipment involved, along with the associated hazards).

(ii) WAC 296-45-065, 296-45-125, 296-45-135, 296-45-255, 296-45-315, 296-45-375, and 296-45-455 through 296-45-45530 apply to line-clearance tree-trimming operations performed by line-clearance tree trimmers who are not qualified employees.

(2) Notwithstanding subsection (1) of this section, this chapter does not apply to electrical installations, electrical safety-related work practices, or electrical maintenance considerations covered by Part L of chapter 296-24 WAC and WAC 296-800-280.

Note 1: Work practices conforming to WAC 296-24-970 through 296-24-985 are considered as complying with the electrical safety-related work practice requirements of this chapter, provided the work is being performed on a generation or distribution installation meeting WAC 296-24-95601 through 296-24-95699. This chapter also applies to work by qualified persons directly on or associated with installations of electric power generation, transmission, and distribution lines or equipment, regardless of compliance with WAC 296-24-970 through 296-24-985.

Note 2: Work practices performed by qualified persons and conforming to this chapter are considered as complying with WAC 296-24-95601 through 296-24-95699.

(3) This section applies in addition to all other applicable safety and health standards administered by the department. Specific references in this section to other standards are provided for emphasis only.

(4) Operation, conditions, work methods and other work related situations or activities not specifically covered by this chapter are subject to the rules and regulations of chapter 296-24 WAC, General safety and health standards; chapter 296-62 WAC, General occupational health standards; chapter 296-155 WAC, Safety standards for construction work; chapter 296-800 WAC, Safety and health core rules; and, insofar as applicable to employee safety and health, chapter 19.29 RCW. Additionally, operations, conditions, work methods and other work related situations or activities may be subject to additional rules and regulations depending upon the nature of the work being performed.

(5) 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.

(6) Any rule, regulation or standard contained within this chapter, if subject to interpretation, shall be interpreted so as to achieve employee safety, which is the ultimate purpose of this chapter.

(7) Should a rule or standard contained within this chapter conflict, in any manner, with a standard or rule contained within any other chapter of Title 296 WAC the standard or rule contained herein shall apply so long as the work being done is power generation, transmission, and distribution installations, including related equipment for the purpose of communication or metering, which are accessible only to qualified employees. If there are rules within this chapter that conflict, the rule that provides the greatest employee safety will apply.

(8) Neither the promulgation of these rules, nor anything contained in these rules shall be construed as affecting the relative status or civil rights or liabilities between employers and their employees and/or the employees of others and/or the public generally; nor shall the use herein of the words "duty" and "responsibility" or either, import or imply liability other than provided for in the industrial insurance and safety laws of the state of Washington, to any person for injuries due to negligence predicated upon failure to perform or discharge any such "duty" or "responsibility," but failure on the part of the employees, leadworker, or employer to comply with any compulsory rule may be cause for the department of labor and industries to take action in accordance with the industrial insurance and safety laws.

(9) "Shall" and "must" as used in this chapter make the provisions mandatory. "Should," "may," or "it is recommended" are used to indicate the provisions are not mandatory but are recommended.

(10) If any section, subsection, phrase, or provisions of this chapter or part thereof should be held invalid by any court for any reason, such invalidity shall not in any way affect the validity of the remainder of this chapter, unless such decision renders the remainder of the provision unintelligible, or changes the meaning of such other provision or provisions.

(11) When the language used in this chapter indicates that it is the responsibility, duty, or obligation of the leadworker or other employee, it shall also be the employer's responsibility, obligation, and duty.

Whenever this chapter refers to the provisions of another safety and health standard or statute affecting safety and health, such reference refers to the statute or code in effect at the time the work is being performed.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-015, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 99-09-080, § 296-45-015, filed 4/20/99, effective 8/1/99. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-015, filed 3/6/98, effective 5/6/98.]

WAC 296-45-035 Definitions. These definitions apply to chapter 296-45 WAC.

"Aerial manlift equipment" - Equipment such as extended towers, boom-mounted cages or baskets, and truck-mounted ladders, that is primarily designed to place personnel and equipment aloft to work on elevated structures and equipment.

"Affected employee" - An employee whose job requires him or 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 or her to work in

an area in which such servicing or maintenance is being performed.

"Apprentice" - An employee who is being trained to be journey level.

"Approved" - Meets or exceeds the recognized standards of safety within the industry.

"Approved protectors" - Gloves worn over rubber insulating gloves which are of such material or substance and so constructed as to protect the rubber gloves from abrasions, lacerations, or other physical damage which might otherwise occur to rubber gloves. Approved protectors must conform to the standards which are recognized by the industry.

"Attendant" - An employee assigned to remain immediately outside the entrance to an enclosed or other space to render assistance as needed to employees inside the space.

"Authorized employee" - An employee 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 section.

"Automatic circuit recloser" - A self-controlled device for interrupting and reclosing an alternating current circuit with a predetermined sequence of opening and reclosing followed by resetting, hold-closed, or lockout operation.

"Barricade" - A physical obstruction such as tapes, cones, or A-frame type wood or metal structures intended to provide a warning about and to limit access to a hazardous area.

"Barrier" - A physical obstruction which is intended to prevent contact with energized lines or equipment or to prevent unauthorized access to a work area.

"Bond" - The electrical interconnection of conductive parts designed to maintain a common electrical potential.

"Bus" - A conductor or a group of conductors that serve as a common connection for two or more circuits.

"Bushing" - An insulating structure, including a through conductor or providing a passageway for such a conductor, with provision for mounting on a barrier, conducting or otherwise, for the purposes of insulating the conductor from the barrier and conducting current from one side of the barrier to the other.

"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).

"Cable sheath" - A conductive protective covering applied to cables.

Note: A cable sheath may consist of multiple layers of which one or more is conductive.

"Circuit" - A conductor or system of conductors through which an electric current is intended to flow.

"Clearance" (between objects) - The clear distance between two objects measured surface to surface.

"Clearance" (for work) - Authorization to perform specified work or permission to enter a restricted area.

"Communication lines." (See "Lines, communication.")

"Conductor" - A material, usually in the form of a wire, cable, or bus bar, used for carrying an electric current.

"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.

"Current-carrying part" - 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.

"De-energized" - Free from any electrical connection to a source of potential difference and from electric charge; not having a potential difference from that of the earth.

Note: The term is used only with reference to current-carrying parts, which are sometimes energized (alive).

"Designated employee/person" - An employee/person who is designated by the employer to perform specific duties under the terms of this section and who is knowledgeable in the construction and operation of the equipment and the hazards involved.

"Electric line truck" - Any vehicle used to transport employees, tools, and material, which serves as a traveling workshop for electric power line construction and maintenance work. It may be equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material and/or workers.

"Electric supply equipment" - Equipment that produces, modifies, regulates, controls, or safeguards a supply of electric energy.

"Electric supply lines." (See "Lines, electric supply.")

"Electric utility" - An organization responsible for the installation, operation, or maintenance of an electric supply system.

"Emergency" - An unforeseen occurrence endangering life, limb, or property.

"Enclosed" - Surrounded by a case, cage, fence or otherwise which will protect the contained equipment and prevent accidental contact of a person with live parts.

"Enclosed space" - A working space, such as a man-hole, vault, tunnel, or shaft, that has a limited means of egress or entry, that is designed for periodic employee entry under normal operating conditions, and that under normal conditions does not contain a hazardous atmosphere, but that may contain a hazardous atmosphere under abnormal conditions.

Note: Spaces that are enclosed but not designed for employee entry under normal operating conditions are not considered to be enclosed spaces for the purposes of this section. Similarly, spaces that are enclosed and that are expected to contain a hazardous atmosphere are not considered to be enclosed spaces for the purposes of this section. Such spaces meet the definition of permit spaces in WAC 296-62-145, and entry into them must be performed in accordance with that standard.

"Energized" (alive, live) - 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.

"Energy isolating device" - A physical device that prevents the transmission or release of energy, including, but not

limited to, the following: A manually operated electric circuit breaker, a disconnect switch, a manually operated switch, a slide gate, a slip blind, a line valve, blocks, and any similar device with a visible indication of the position of the device. (Push buttons, selector switches, and other control-circuit-type devices are not energy isolating devices.)

"Energy source" - Any electrical, mechanical, hydraulic, pneumatic, chemical, nuclear, thermal, or other energy source that could cause injury to personnel.

"Equipment" (electric) - A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like used as part of or in connection with an electrical installation.

"Exposed" - Not isolated or guarded.

"Fault current" - The current that flows in an electrical system because of a defect in the circuit induced accidentally or otherwise.

"Fixed ladder" - A ladder that is permanently secured to a structure.

"Ground" - A conducting connection, whether intentional or accidental, between an electric circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

"Grounded" - Connected to earth or to some conducting body that serves in place of the earth.

"Grounded system" - 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 (not a current-interrupting device).

"Groundperson" - A member of crew working on ground under direction of a leadworker.

"Guarded" - Covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats, or platforms, designed to prevent 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.

"Hazardous atmosphere" - An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from an enclosed space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less;

- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in chapter 296-62 WAC, Part L, or in chapter 296-62 WAC, toxic and hazardous substances, and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

- Any other atmospheric condition that is "immediately dangerous to life or health" (IDLH).

"IDLH" - Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Note: Some materials (hydrogen fluoride gas and cadmium vapor, for example) may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Note: For air contaminants for which WISHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Chemical Hazard Communication Program, WAC 296-800-170, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

"High-power tests" - Tests in which fault currents, load currents, magnetizing currents, and line-dropping currents are used to test equipment, either at the equipment's rated voltage or at lower voltages.

"High-voltage tests" - Tests in which voltages of approximately 1000 volts are used as a practical minimum and in which the voltage source has sufficient energy to cause injury.

"High wind" - A wind of such velocity that the following hazards would be present:

- An employee would be exposed to being blown from elevated locations; or
- An employee or material handling equipment could lose control of material being handled; or
- An employee would be exposed to other hazards not controlled by the standard involved.

Note: Winds exceeding 40 miles per hour (64.4 kilometers per hour), or 30 miles per hour (48.3 kilometers per hour) if material handling is involved, are normally considered as meeting this criteria unless precautions are taken to protect employees from the hazardous effects of the wind.

"Insulated" - Separated from other conducting surfaces by a dielectric (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 for the conditions to which it is normally subjected. Otherwise, it is, within the purpose of this section, uninsulated.

"Insulation" (cable) - That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

"Insulation shielding" - An envelope which encloses the insulation of a cable and provides an equipotential surface in contact with cable insulation.

"Isolated" - An object that is not readily accessible to persons unless special means of access are used.

"Leadworker" - The person directly in charge of workers doing the work, regardless of title.

"Line-clearance tree trimmer" - An employee who, through related training or on-the-job experience or both, is familiar with the special techniques and hazards involved in line-clearance tree trimming.

- Note 1: An employee who is regularly assigned to a line-clearance tree-trimming crew and 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 line-clearance tree trimmer is considered to be a line-clearance tree trimmer.
- Note 2: A line-clearance tree trimmer is not considered to be a "qualified employee" under this section unless he or she has the training required for a qualified employee under WAC 296-45-065. However, under the electrical safety-related work practices standard, a line-clearance tree trimmer is considered to be a "qualified employee." Tree trimming performed by such "qualified employees" is not subject to the electrical safety-related work practice requirements contained in WAC 296-24-970. (See also the note following WAC 296-24-970 for information regarding the training an employee must have to be considered a qualified employee.)

"Line-clearance tree trimming" - The pruning, trimming, repairing, maintaining, removing, or clearing of trees or the cutting of brush that is within 10 feet (305 cm) of electric supply lines and equipment.

"Lines" -

- **"Communication lines"** - The conductors and their supporting or containing structures 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. If the lines are operating at less than 150 volts, no limit is placed on the transmitted power of the system. Under certain conditions, communication cables may include communication circuits exceeding these limitations where such circuits are also used to supply power solely to communication equipment.

Note: Telephone, telegraph, railroad signal, data, clock, fire, police alarm, cable television, and other systems conforming with this definition are included. Lines used for signaling purposes, but not included under this definition, are considered as electric supply lines of the same voltage.

- **"Electric supply lines"** - Conductors used to transmit electric energy and their necessary supporting or containing structures. Signal lines of more than 400 volts are always supply lines within this section, and those of less than 400 volts are considered as supply lines, if so run and operated throughout.

"Live-line tools and ropes" - Tools and ropes specifically designed for work on energized high voltage lines and equipment.

"Load-break elbow" - A connector designed to close and interrupt current on energized circuits within the design current and voltage rating.

"Manhole" - A subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating, and maintaining submersible equipment or cable.

"Manhole steps" - A series of steps individually attached to or set into the walls of a manhole structure.

"Minimum approach distance" - The closest distance an employee is permitted to approach an energized or a grounded object.

"Neutral" - A system in which one conductor is used as the neutral for one or more circuits; one conductor may be used as the neutral for both primary and secondary circuits of a distribution system.

"Pole" - Any device used to support a power distribution or transmission line. The pole may be made of any substance including wood, concrete, metal, is usually cylindrical in shape and comparatively slender. It is the upright standard to which is affixed part of the power distribution and transmission line system as defined in this chapter.

"Power dispatcher" (load dispatcher or system operator) - A person who has been designated by the employer as having authority over switching and clearances of high voltage lines and station equipment.

"Protective devices" - Devices such as rubber gloves, rubber blankets, line hose, rubber boots, or other insulating devices, which are specifically designed for the protection of employees.

"Public highway" - Every way, land, road, street, boulevard, and every other way or place in the state open as a matter of right to public vehicular travel, both inside and outside the limits of cities and towns, regardless of ownership.

"Qualified person or qualified employee" - A person who is familiar with the construction of, or operation of such lines and/or equipment that concerns his/her position and who is fully aware of the hazards connected therewith, or, one who has passed a journey status examination for the particular branch of the electrical trades with which he/she may be connected.

Note 1: An employee must have the training required by WAC 296-45-065(1) in order to be considered a qualified employee.

Note 2: (Apprentice) Except under WAC 296-45-25510(12), 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.

"Rubber" - Any goods, equipment, or tool made out of either natural or synthetic rubber.

"Secured ladder" - A ladder which is not capable of being dislodged from the top by lateral, or jerking motion(s).

"Sheath" - As applied to tools carried in a lineman's tool belt, a sheath that effectively covers the tool and prevents such tool from falling from the belt.

"Step bolt" - A bolt or rung attached at intervals along a structural member and used for foot placement during climbing or standing.

"Supporting structure" - The main supporting unit (usually a pole or tower).

"Switch" - A device for opening and closing or for changing the connection of a circuit. In these rules, a switch is understood to be manually operable, unless otherwise stated.

"System operator or power dispatcher" - A qualified person who has been designated by the employer and having authority over switching, clearances, and operation of the system and its parts.

"Tag" - A system or method of identifying circuits, systems, or equipment for the purpose of alerting employees and others that the circuit, system, or equipment is being worked on.

"Underground network" - An underground electrical installation fed from multiple primary sources directly associated with area-wide secondary network connected into a common grid.

"Underground residential distribution system" (URD) - 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.

"Utility" - An organization responsible for the installation, operation, or maintenance of electric supply or communications systems.

"Vault" - An enclosure, above or below ground, which personnel may enter and which is used for the purpose of installing, operating, or maintaining equipment or cable.

"Vented vault" - A vault that has provision for air changes using exhaust flue stacks and low level air intakes operating on differentials of pressure and temperature providing for airflow which precludes a hazardous atmosphere from developing.

"Voltage" - The effective (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.

Note: Low voltage includes voltages from 50 to 600 volts. High voltage shall mean those voltages of 601 volts to 230,000. Extra high voltage means any voltage over 230,000 volts. Where the words "high voltage" are used in this chapter it shall include extra high voltage, unless otherwise specified.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-035, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-035, filed 3/6/98, effective 5/6/98.]

WAC 296-45-055 Employer's responsibility. (1) The employer shall provide and maintain the necessary protective devices specified in these rules and require the employees to use them properly.

(2) The employer shall develop and maintain a chemical hazard communication program as required by WAC 296-800-170, 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.

(3) There shall be installed and maintained in every fixed establishment employing eight or more persons a safety bulletin board of a 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.

(4) The employer shall require the leadworker to observe and enforce all safety rules and shall furnish a copy of the electrical workers' safety rules to each employee who is covered by these rules.

(5) The employer shall appoint only competent workers to supervise other employees and those appointed shall be responsible for the safety of the employees under their supervision.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-055, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-055, filed 3/6/98, effective 5/6/98.]

WAC 296-45-075 Employer's safety program.

(1) The employer shall hold safety meetings at least once a month, which meetings shall be held at a reasonable time and place as selected by the employer. The employer shall require all employees subject to provisions of this chapter to attend said meetings: Provided, That employees whose presence is otherwise required by reason of an emergency or whose function is such that they cannot leave their station or cease their work without serious detriment to the service provided, such as dispatcher, may be excused from such meeting under those circumstances. Minutes shall be kept of each safety meeting and retained for a period of one year.

(2) The employer or a representative(s) designated shall investigate all accidents or injuries of a serious nature and, where possible, take the proper remedial steps to prevent the occurrence of similar accidents.

(3) The employer shall furnish instructions stating the proper procedure in event of an emergency, which shall include the names of those individuals to be notified and methods of contacting them.

(4) The employer shall provide and make available to all employees accident report and safety suggestion forms or other approved methods. Safety suggestion forms should, where possible, be used for suggesting the elimination of hazardous conditions and such reported suggestions shall be retained (for one year) by the employer or an authorized representative.

(5) The employer must notify the department of employee fatalities or catastrophes according to the requirements of WAC 296-800-320.

(6) Nothing contained within this chapter shall prohibit an employer or an authorized representative from disciplining employees for failure to comply with the provisions of this or any other safety code.

(7) Existing conditions related to the safety of the work to be performed shall be determined before work on or near electric lines or equipment is started. Such conditions include, but are not limited to, the nominal voltages of lines and equipment, the maximum switching transient voltages, the presence of hazardous induced voltages, the presence and condition of protective grounds and equipment grounding conductors, the condition of poles, environmental conditions relative to safety, and the locations of circuits and equipment, including power and communication lines and fire protective signaling circuits.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-075, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-075, filed 3/6/98, effective 5/6/98.]

WAC 296-45-125 Medical services and first aid. The employer shall provide medical services and first aid as required in WAC 296-800-160. In addition to the requirements of WAC 296-800-160, the following requirements also apply:

(1) Cardiopulmonary resuscitation and first-aid training. When employees are performing work on or associated with exposed lines or equipment energized at 50 volts or more, persons trained in first aid including cardiopulmonary resuscitation (CPR) shall be available as follows:

(a) For field work involving two or more employees at a work location, at least two trained persons shall be available. However, only one trained person need be available if all new employees are trained in first aid, including CPR, within 3 months of their hiring dates.

(b) For fixed work locations such as generating stations, the number of trained persons available shall be sufficient to ensure that each employee exposed to electric shock can be reached within 4 minutes by a trained person. However, where the existing number of employees is insufficient to meet this requirement (at a remote substation, for example), all employees at the work location shall be trained.

(2) First-aid supplies. First-aid supplies required by WAC 296-800-160 shall be placed in weatherproof containers if the supplies could be exposed to the weather.

(3) First-aid kits. Each first-aid kit shall be maintained, shall be readily available for use, and shall be inspected frequently enough to ensure that expended items are replaced but at least once per year.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-125, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-125, filed 3/6/98, effective 5/6/98.]

WAC 296-45-25505 Personal protective equipment.

(1) General. Personal protective equipment shall meet the requirements of chapter 296-24 WAC, Part L and WAC 296-800-150.

(2) All protective hats shall be in accordance with the specifications of ANSI Z89.2-1971 Edition Industrial Protective Helmets for Electrical Workers, Class B, and shall be worn at the jobsite by employees who are exposed to overhead or electrical hazards.

(3) Wearing apparel. Goggles, hearing protection, respirators, rubber gloves, and other such personal protective devices shall not be interchanged among employees unless they have been sanitized.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-25505, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-25505, filed 3/6/98, effective 5/6/98.]

WAC 296-45-275 Ladders, platforms, and manhole steps. (1) General. Requirements for ladders contained in chapter 296-24 WAC, Part J-1, and WAC 296-800-290 apply, except as specifically noted in subsection (2) of this section.

(2) Special ladders and platforms. Portable ladders and platforms used on structures or conductors in conjunction with overhead line work need not meet chapter 296-24 WAC, Part J-1, chapter 296-155 WAC, Part J or WAC 296-800-290.

However, these ladders and platforms shall meet the following requirements:

(a) Ladders and platforms shall be secured to prevent their becoming accidentally dislodged.

(b) Ladders and platforms may not be loaded in excess of the working loads for which they are designed.

(c) Ladders and platforms may be used only in applications for which they were designed.

(d) In the configurations in which they are used, ladders and platforms shall be capable of supporting without failure at least 2.5 times the maximum intended load.

(e) All ladders shall be handled and stored in such a manner as to prevent damage to the ladder.

(f) When ascending or descending a ladder, the employee shall face the ladder and have free use of both hands.

(g) All defective ladders shall be taken out of service and labeled as defective.

(h) When a ladder is being used which is not fixed or otherwise secured, there shall be an attendant to hold the ladder and watch traffic when the work is being done on streets, alleys, sidewalks, or in industrial plants or other places where there exists the possibility of accidental contact with the ladder by third persons or vehicles.

(i) When working on the ladder, employees shall, where possible, tie the top of the ladder to a substantial object to prevent falling unless the ladder is equipped with approved hooks which may be used for the same purpose.

(j) Portable ladders shall not be moved with employees on the ladder.

(k) No employee shall ascend or descend a rolling ladder while it is moving.

(l) No employee shall stand on the top two steps of a step ladder.

(m) No employee shall use a step ladder as a straight ladder.

(n) Ladders shall always be placed on a secure footing with both legs resting firmly on the lower surface.

(o) Ladders made by fastening cleats or similar devices across a single rail shall not be used.

(3) Conductive ladders. Portable metal ladders and other portable conductive ladders may not be used near exposed energized lines or equipment. However, in specialized high-voltage work, conductive ladders shall be used where the employer can demonstrate that nonconductive ladders would present a greater hazard than conductive ladders.

Note: A greater electrical hazard would be static electricity such as might be found in extra high voltage substations.

(4) All conductive or metal ladders shall be prominently marked and identified as being conductive and shall be grounded when used near energized lines or equipment.

Note: See chapter 296-24 WAC for additional ladder requirements.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-275, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-275, filed 3/6/98, effective 5/6/98.]

WAC 296-45-285 Hand, and portable powered tools.**(1) General requirements.**

(a) The employer shall assure that each hand and portable powered tool, including any tool provided by an employee, is maintained in serviceable condition.

(b) The employer shall assure that each tool, including any tool provided by an employee, is inspected before initial use during each workshift. At a minimum, the inspection shall include the following:

(i) Handles and guards, to assure that they are sound, tight-fitting, properly shaped, free of splinters and sharp edges, and in place;

(ii) Controls, to assure proper function;

(iii) Heads of shock, impact-driven and driving tools, to assure that there is no mushrooming;

(iv) Cutting edges, to assure that they are sharp and properly shaped; and

(v) All other safety devices, to assure that they are in place and function properly.

(c) The employer shall assure that each tool is used only for purposes for which it has been designed.

(d) When the head of any shock, impact-driven or driving tool begins to chip, it shall be repaired or removed from service.

(e) The cutting edge of each tool shall be sharpened in accordance with manufacturer's specifications whenever it becomes dull during the workshift.

(f) Each tool shall be stored in the provided location when not being used at a work site.

(g) Racks, boxes, holsters or other means shall be provided, arranged and used for the transportation of tools so that a hazard is not created for any vehicle operator or passenger.

(2) Electric equipment connected by cord and plug must meet the following requirements:

(a) Cord- and plug-connected equipment supplied by premises wiring is covered by chapter 296-24 WAC, Part L and WAC 296-800-280.

(b) Any cord- and plug-connected equipment supplied by other than premises wiring shall comply with one of the following instead of chapter 296-24 WAC, Part L and WAC 296-800-280:

(i) It shall be equipped with a cord containing an equipment grounding conductor connected to the tool frame and to a means for grounding the other end (however, this option may not be used where the introduction of the ground into the work environment increases the hazard to an employee); or

(ii) It shall be of the double-insulated type conforming to chapter 296-24 WAC, Part L and WAC 296-800-280; or

(iii) It shall be connected to the power supply through an isolating transformer with an ungrounded secondary.

(3) Portable and vehicle-mounted generators. Portable and vehicle-mounted generators used to supply cord- and plug-connected equipment shall meet the following requirements:

(a) The generator may only supply equipment located on the generator or the vehicle and cord- and plug-connected equipment through receptacles mounted on the generator or the vehicle.

(b) The noncurrent-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles shall be bonded to the generator frame.

(c) In the case of vehicle-mounted generators, the frame of the generator shall be bonded to the vehicle frame.

(d) Any neutral conductor shall be bonded to the generator frame.

(4) Hydraulic and pneumatic tools must meet the following requirements:

(a) Safe operating pressures for hydraulic and pneumatic tools, hoses, valves, pipes, filters, and fittings may not be exceeded.

Note: If any hazardous defects are present, no operating pressure would be safe, and the hydraulic or pneumatic equipment involved may not be used. In the absence of defects, the maximum rated operating pressure is the maximum safe pressure.

(b) A hydraulic or pneumatic tool used where it may contact exposed live parts shall (use nonconductive hoses and) be designed and maintained for such use.

(c) The hydraulic system supplying a hydraulic tool used where it may contact exposed live parts shall provide protection against loss of insulating value for the voltage involved due to the formation of a partial vacuum in the hydraulic line.

Note: Hydraulic lines without check valves having a separation of more than 35 feet (10.7 m) between the oil reservoir and the upper end of the hydraulic system promote the formation of a partial vacuum.

(d) A pneumatic tool used on energized electric lines or equipment or used where it may contact exposed live parts shall provide protection against the accumulation of moisture in the air supply.

(e) Pressure shall be released before connections are broken, unless quick acting, self-closing connectors are used. Hoses may not be kinked.

(f) Employees may not use any part of their bodies to locate or attempt to stop a hydraulic leak.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-285, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-285, filed 3/6/98, effective 5/6/98.]

WAC 296-45-45510 Sprayers and related equipment.

(1) Walking and working surfaces of sprayers and related equipment shall be covered with slip-resistant material. If slipping hazards cannot be eliminated, slip-resistant footwear or handrails and stair rails meeting the requirements of chapter 296-24 WAC, Part J-1, and WAC 296-800-260 may be used instead of slip-resistant material.

(2) Equipment on which employees stand to spray while the vehicle is in motion shall be equipped with guardrails around the working area. The guardrail shall be constructed in accordance with chapter 296-24 WAC, Part J-1 and WAC 296-800-260.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-45510, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-45510, filed 3/6/98, effective 5/6/98.]

WAC 296-45-48535 Chemical cleaning of boilers and pressure vessels. The following requirements apply to chemical cleaning of boilers and pressure vessels:

(1) Areas where chemical cleaning is in progress shall be cordoned off to restrict access during cleaning. If flammable liquids, gases, or vapors or combustible materials will be used or might be produced during the cleaning process, the following requirements also apply:

(a) The area shall be posted with signs restricting entry and warning of the hazards of fire and explosion; and

(b) Smoking, welding, and other possible ignition sources are prohibited in these restricted areas.

(2) The number of personnel in the restricted area shall be limited to those necessary to accomplish the task safely.

(3) There shall be ready access to water or showers for emergency use.

Note: See chapter 296-24 WAC, Part B and WAC 296-800-230 for requirements that apply to the water supply and to washing facilities.

(4) Employees in restricted areas shall wear protective equipment meeting the requirements of this chapter and including, but not limited to, protective clothing, boots, goggles, and gloves.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-45-48535, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-48535, filed 3/6/98, effective 5/6/98.]

WAC 296-45-52530 Employee protection in public work areas. (1)(a) Before work begins in the vicinity of vehicular or pedestrian traffic that may endanger employees, traffic control signs, devices, and barriers must be positioned and used according to the requirements of chapter 296-155 WAC, Part E.

(b) When flaggers are used, employers, responsible contractors and/or project owners must comply with the requirements of WAC 296-155-305.

(2) During hours of darkness, warning lights must be prominently displayed.

(3) Excavated areas must be protected with barricades.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050, 2000 c 239, and chapter 34.05 RCW. 01-07-075, § 296-45-52530, filed 3/20/01, effective 4/20/01. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-07-009, § 296-45-52530, filed 3/6/98, effective 5/6/98.]

WAC 296-45-67545 Refueling operations. (1) 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.

(2) 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(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.

(3) Helicopters with their engines stopped being refueled with aviation gasoline or Jet B (Turbine) type fuel, shall also comply with subsection (2)(a) through (g) of this section.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-45-67545, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-45-67545, filed 5/15/89, effective 6/30/89.]

Chapter 296-46A WAC

SAFETY STANDARDS—INSTALLING ELECTRIC WIRES AND EQUIPMENT—ADMINISTRATIVE RULES

(Formerly chapter 296-46 WAC)

WAC

296-46A-910

Inspection fees.

296-46A-915

Electrical/telecommunications contractor license, administrator certificate and examination, and copy fees.

WAC 296-46A-910 Inspection fees. To calculate inspection fees, the amperage is based on the conductor ampacity or the overcurrent device rating. The total fee must not be less than the number of progress inspection (one-half hour) units times the progress inspection fee rate from subsection (8) PROGRESS INSPECTIONS below.

(1) RESIDENTIAL.

- (a) Single and two-family residential (new construction).

- Notes:
- Square footage is the area included within the surrounding exterior walls of a building exclusive of any interior courts. (This includes any floor area in an attached garage, basement, or unfinished living space.)
 - "Inspected with the service" means that a separate service inspection fee is included on the same electrical work permit and "inspected at the same time" means all wiring is to be ready for inspection during the initial inspection trip.
 - An "outbuilding" is a structure that serves a direct accessory function to the residence, such as a pump house or storage building. Outbuilding does not include buildings used for commercial type occupancies or additional dwelling occupancies.
- (i) First 1300 sq. ft. \$ 68.90
- (ii) Each additional 500 sq. ft. or portion of \$ 22.10
- (iii) Each outbuilding or detached garage inspected at the same time as a dwelling unit on the property \$ 28.80
- (iii) Each outbuilding or detached garage inspected separately \$ 45.50
- (iv) Each swimming pool - inspected with the service \$ 45.50
- (v) Each swimming pool - inspected separately \$ 68.90
- (vi) Each hot tub, spa, or sauna - inspected with the service \$ 28.80
- (vii) Each hot tub, spa, or sauna - inspected separately \$ 45.50
- (viii) Each septic pumping system - inspected with the service \$ 28.80
- (ix) Each septic pumping system - inspected separately \$ 45.50
- (b) Multifamily residential and miscellaneous residential structures, services and feeders (new construction).
- (i) Each service and/or feeder

Ampacity	Service/Feeder	Additional Feeder
0 to 200	\$ 74.30	\$ 22.10
201 to 400	\$ 92.30	\$ 45.50
401 to 600	\$ 126.70	\$ 63.20
601 to 800	\$ 162.50	\$ 86.60
801 and over	\$ 231.70	\$ 173.80

- (c) Single-family or multi-family altered services including circuits.
- (i) Each altered service and/or altered feeder

Ampacity	Service or Feeder
0 to 200	\$ 63.20
201 to 600	\$ 92.30
601 and over	\$ 139.10

- (ii) Maintenance or repair of meter or mast (no alterations to service or feeder) \$ 34.30
- (d) Single or multi-family residential circuits only (no service inspection).

Note: Altered or added circuit fees are calculated per panelboard. Total cost of the alterations in an individual panel should not exceed the cost of a complete altered service or feeder of the same rating, as shown in subsection (1) RESIDENTIAL (c) (table) above.

- (i) 1 to 4 circuits (see note) \$ 45.50
- Except: Water heater load control devices installed in residences as part of an energy conservation program \$ 27.70

Note: The \$ 27.70 permit fee for water heater load control devices will expire on December 31, 2001.

- (ii) Each additional circuit (see note) \$ 5.10
- (e) Mobile homes, modular homes, mobile home parks, and RV parks.
- (i) Mobile home or modular home service or feeder only \$ 45.50
- (ii) Mobile home service and feeder \$ 74.30
- (f) Mobile home park sites and RV park sites.

Note: For master service installations, see subsection (2).

- (i) First site service or site feeder \$ 45.50
- (ii) Each additional site service; or additional site feeder inspected at the same time as the first service or feeder \$ 28.80

(2) COMMERCIAL/INDUSTRIAL.

- (a) New service or feeder and additional new feeders inspected at the same time (includes circuits).

Note: For large COMMERCIAL/INDUSTRIAL projects that include multiple feeders, "inspected at the same time" can be interpreted to include additional inspection trips for a single project. The additional inspections must be for electrical work specified on the permit at the time of purchase. The permit fee for such projects must be calculated from (2) (a) (i) (table) above. However, the total fee must not be less than the number of progress inspection (one-half hour) units times the progress inspection fee rate from subsection (8) PROGRESS INSPECTIONS below.

Ampacity	Service/Feeder	Additional Feeder
0 to 100	\$ 74.30	\$ 45.50
101 to 200	\$ 92.30	\$ 57.80
201 to 400	\$ 173.80	\$ 68.90
401 to 600	\$ 202.60	\$ 81.00
601 to 800	\$ 261.80	\$ 110.30
801 to 1000	\$ 319.60	\$ 133.40
1000 and over	\$ 348.70	\$ 186.10

- (b) Altered services or feeders (no circuits).

(i) Service/feeders

Ampacity	Service or Feeder
0 to 200	\$ 74.30
201 to 600	\$ 173.80
601 to 1000	\$ 261.80
1000 and over	\$ 290.80

- (ii) Maintenance or repair of meter or mast (no alteration to the service or feeder) \$ 63.20

(c) Circuits only.

Note: Altered/added circuit fees are calculated per panelboard. Total cost of the alterations in a panel (or panels) should not exceed the cost of a new feeder (or feeders) of the same rating, as shown in subsection (2) COMMERCIAL/INDUSTRIAL (a)(i)(table) above.

- (i) First five circuits per branch circuit panel \$ 57.80
- (ii) Each additional circuit per branch circuit panel \$ 5.10
- (d) Over 600 volts surcharge per permit. \$ 57.80
- (3) TEMPORARY SERVICE(S).

Notes: • Temporary electrical power and lighting installations must be used during the period of construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment, or similar activities.

• Temporary electrical power and lighting installations are allowed during emergencies and for tests, experiments, and developmental work. Temporary electrical power and lighting installations are allowed for a period not to exceed 90 days for Christmas decorative lighting and similar purposes. Temporary wiring shall be removed immediately upon completion of construction or purpose for which the wiring was installed.

• Temporary stage or concert inspections requested outside of normal business hours will be subject to the portal-to-portal hourly fees in subsection (11) OTHER INSPECTIONS. The fee for such after hours inspections shall be the greater of the fee from (3) TEMPORARY SERVICES (a) or the portal-to-portal fee.

- (a) Temporary services, temporary stage or concert productions.

Ampacity	Service/Feeder	Additional Feeder
0 to 60	\$ 39.80	\$ 20.50
0 to 100	\$ 45.50	\$ 22.10
101 to 200	\$ 57.80	\$ 28.80
201 to 400	\$ 68.90	\$ 34.40
401 to 600	\$ 92.30	\$ 45.50
601 and over	\$ 104.60	\$ 52.20

(4) IRRIGATION MACHINES, PUMPS AND EQUIPMENT.

(a) Irrigation machines.

- (i) Each tower when inspected at the same time as a service and feeder from (2) COMMERCIAL/INDUSTRIAL \$ 5.10
- (ii) Towers - when not inspected at the same time as a service and feeders - one to six towers \$ 68.90
- (iii) Each additional tower \$ 5.10

(5) MISCELLANEOUS - commercial/industrial and residential.

(a) Low-voltage thermostats.

- (i) First thermostat \$ 34.40

- (ii) Each additional thermostat inspected at the same time as the first \$ 10.80
- (b) Low-voltage systems and telecommunications systems. Includes all telecommunications installations, fire alarm and burglar alarm nurse call, intercom, security systems, energy management control systems, HVAC/refrigeration control systems (other than thermostats above), industrial and automation control systems, lighting control systems, stand-alone sound systems, public address, and similar low-energy circuits and equipment.
 - (i) First 2500 sq. ft. or less \$ 39.80
 - (ii) Each additional 2500 sq. ft. or portion of \$ 10.80
 - (c) Signs and outline lighting.
 - (i) First sign (no service included) \$ 34.40
 - (ii) Each additional sign inspected at the same time on the same building or structure \$ 16.40
 - (d) Berth at a marina or dock.
 - Note: Five berths or more shall be permitted to have the inspection fees based on appropriate service and feeder fees from section (2) COMMERCIAL/INDUSTRIAL (a)(i) above.
 - (i) Berth at a marina or dock \$ 45.50
 - (ii) Each additional berth inspected at the same time \$ 28.80
 - (e) Yard pole, pedestal, or other meter loops only.
 - (i) Yard pole, pedestal, or other meter loops only \$ 45.50
 - (ii) Meters installed remote from service equipment: Inspected at same time as service, temporary service or other installations \$ 10.80
 - (f) Emergency inspections requested outside normal work hours. Regular fee plus surcharge of:
 - (g) Generators.
 - (i) Portable generators: Permanently installed transfer equipment for portable generators \$ 63.20
 - (ii) Permanently installed generators: Refer to appropriate residential or commercial new service or feeder section
 - (h) Annual permit fee for plant location employing regular electrical maintenance staff - each inspection two-hour maximum.

	Inspections	Fee
1 to 3 plant electricians	12	\$ 1,664.40
4 to 6 plant electricians	24	\$ 3,330.40
7 to 12 plant electricians	36	\$ 4,995.30
13 to 25 plant electricians	52	\$ 6,661.30
more than 25 plant electricians	52	\$ 8,327.30

- (i) Telecommunications annual permit fee.
- (i) For commercial/industrial location employing full-time telecommunications maintenance staff or having a yearly maintenance contract with a licensed electrical/telecommunications contractor. Annual inspection time required may be estimated by the purchaser at the rate for "Other inspections" in this section, charged portal-to-portal per hour - two-hour minimum.
 - Each additional hour, or portion thereof, of portal-to-portal inspection time \$ 68.90
- (6) CARNIVAL INSPECTIONS.
 - (a) First carnival field inspection each year.
 - (i) Each ride and generator truck \$ 16.40
 - (ii) Each remote distribution equipment, concession or gaming show \$ 5.10
 - (iii) If the calculated fee for first field inspection of (a) and (b) above is less, the minimum inspection fee shall be:
 - (b) Subsequent carnival inspections.
 - (i) First 10 rides, concessions, generators, remote distribution equipment or gaming show \$ 86.60
 - (ii) Each additional ride, concession, generator, remote distribution equipment or gaming show \$ 5.10
 - (c) Concession(s) or ride(s) not part of a carnival.
 - (i) First field inspection each year of a single concession or ride, not part of a carnival \$ 68.90
 - (ii) Subsequent inspection of a single concession or ride, not part of a carnival \$ 45.50
- (7) TRIP FEES.
 - (a) Requests by property owners to inspect existing installations. \$ 68.90
 - (b) Submitter notifies the department that work is ready for inspection when it is not ready. \$ 34.40

- (c) Additional inspection required because submitter has provided the wrong address. \$ 34.40
- (d) More than one additional inspection required to inspect corrections; or for repeated neglect, carelessness, or improperly installed electrical work. \$ 34.40
- (e) Each trip necessary to remove a noncompliance notice. \$ 34.40
- (f) Corrections have not been made in the prescribed time, unless an exception has been requested and granted. \$ 34.40
- (g) Installations that are covered or concealed before inspection. \$ 34.40
- (8) PROGRESS INSPECTIONS.
 - Note: The fees calculated in subsections (1) through (6) must apply to all electrical work. This section must be applied to a permit where the permit holder has requested additional inspections beyond the number supported by the permit fee calculated at the rate in (1) through (6).
 - (a) On partial or progress inspections, each one-half hour. \$ 34.40
 - (9) PLAN REVIEW FEE.
 - (a) Fee is thirty-five percent of the electrical work permit fee as determined by WAC 296-46A-910, plus a plan review submission fee of:
 - (b) Supplemental submissions of plans per hour or fraction of an hour. \$ 68.90
 - (c) Plan review shipping and handling fee. \$ 16.40
 - (10) OUT-OF-STATE INSPECTIONS.
 - (a) Permit fees will be charged according to the fees listed in this section.
 - (b) Travel expenses:
 - (i) All travel expenses and per diem for out-of-state inspections are billed following completion of each inspection(s). These expenses can include, but are not limited to: Inspector's travel time, travel cost and per diem at the state rate. Travel time is hourly based on the rate in subsection (11) of this section
 - (11) OTHER INSPECTIONS.
 - (a) Inspections not covered by above inspection fees must be charged portal-to-portal per hour:
 - (12) REFUND PROCESSING FEE.
 - (a) All requests for permit fee refunds will be assessed a processing fee. \$ 10.80
 - (13) VARIANCE REQUEST PROCESSING FEE.
 - (a) Variance request processing fee. This fee is nonrefundable once the transaction has been made. \$ 68.90

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-46A-910, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 19.28.031, 19.28.551, 19.28.010, 19.28.101, 19.28.171, 19.28.191, 19.28.251, 19.28.470, 19.28.490, 67.42.050, 2000 c 238, and chapter 19.28 RCW. 01-01-097, § 296-46A-910, filed 12/15/00, effective 1/18/01.]

WAC 296-46A-915 Electrical/telecommunications contractor license, administrator certificate and examination, and copy fees.

- (1) GENERAL OR SPECIALTY CONTRACTOR LICENSE (per twenty-four month period) \$ 222.40
 - (a) Reinstatement of a general or specialty contractor's license after a suspension \$ 44.70
- (2) ADMINISTRATOR CERTIFICATE
 - Note: Failure to appear for an examination results in forfeiture of the examination fee.
 - (a) Administrator certificate examination application (nonrefundable) \$ 27.70
 - (b) Administrator first-time examination fee \$ 66.60
 - (c) Administrator retest examination fee \$ 77.90
 - (d) Administrator original certificate (request for certificate submitted with application) \$ 66.30
 - (e) Administrator certificate renewal (per twenty-four month period) \$ 83.80
 - (f) Late renewal of administrator certificate (per twenty-four month period) \$ 166.90

(g)	Transfer of administrator designation	\$ 33.10
(h)	Certified copy of each document (maximum per file):	\$ 47.00
	First document:	\$ 21.30
	Each additional document:	\$ 2.00
(i)	Reinstatement of an administrator's certificate after a suspension	\$ 44.70
(3)	REFUND PROCESSING FEE	\$ 10.80

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-46A-915, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 19.28.031, 19.28.551, 19.28.010, 19.28.101, 19.28.171, 19.28.191, 19.28.251, 19.28.470, 19.28.490, 67.42.050, 2000 c 238, and chapter 19.28 RCW. 01-01-097, § 296-46A-915, filed 12/15/00, effective 1/18/01.]

Chapter 296-52 WAC

SAFETY STANDARDS FOR THE POSSESSION AND HANDLING OF EXPLOSIVES

WAC

296-52-465	Storage of ammonium nitrate.
296-52-489	Transportation.
296-52-497	Blasting agents.
296-52-501	Water gel (slurry) explosives and blasting agents.

WAC 296-52-465 Storage of ammonium nitrate. (1) Scope and definitions.

(a) Except as provided in (d) of this subsection applies to the storage of ammonium nitrate in the form of crystals, flakes, grains, or prills including fertilizer grade, dynamite grade, nitrous oxide grade, technical grade, and other mixtures containing 60 percent or more ammonium nitrate by weight but does not apply to blasting agents.

(b) This section does not apply to the transportation of ammonium nitrate while such transportation is being conducted under U.S. DOT jurisdiction and in compliance with DOT regulations (see 49 CFR Part 173).

(c) This section does not apply to storage under the jurisdiction of and in compliance with the regulations of the United States Coast Guard (see 46 CFR Parts 146-149).

(d) This section shall not apply to storage of ammonium nitrate and ammonium nitrate mixtures which are more sensitive than allowed by the "Definition and Test Procedures for Ammonium Nitrate Fertilizers" from the FERTILIZER INSTITUTE. Storage of ammonium nitrate which is above the sensitivity criteria shall comply with WAC 296-52-469, Storage of Blasting Agents and Supplies.

(e) Nothing in this section shall apply to the production of ammonium nitrate or to the storage of ammonium nitrate on the premises of the producing plant, provided that no distinct undue hazard to employees or the public is created.

(f) The definition and test procedures for ammonium nitrate fertilizer are those found in the bulletin, "Definition and test procedures for ammonium nitrate fertilizer," available from the Fertilizer Institute, 501 2nd St. N.E., Washington, D.C. 20006. This definition limits the contents of organic materials, metals, sulfur, etc., in a product that may be classified ammonium nitrate fertilizer.

(g) The standards for ammonium nitrate (nitrous oxide grade) are those found in the "specifications, properties, and recommendations for packaging, transportation, storage, and use of ammonium nitrate," available from the Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4100.

(2) General provisions.

(a) This subsection applies to all persons storing, having, or keeping ammonium nitrate, and to the owner or lessee of any building, premises, or structure in which ammonium nitrate is stored in quantities of 1,000 pounds (454 kg) or more.

(b) Approval of large quantity storage shall be subject to due consideration of the fire and explosion hazards, including exposure to toxic vapors from burning or decomposing ammonium nitrate.

(c) Storage buildings shall not have basements unless the basements are open on at least one side. Storage buildings shall not be over one story in height.

(d) Storage buildings shall have adequate ventilation or be of a construction that will be self-ventilating in the event of fire.

(e) The wall on the exposed side of a storage building within 50 feet (15.2 m) of a combustible building, forest, piles of combustible materials and similar exposure hazards shall be of fire-resistive construction. (See NFPA Std. 220, Type 1 Construction.) In lieu of the fire-resistive wall, other suitable means of exposure protection such as a free standing wall may be used. The roof coverings shall be Class C or better, as defined in Roof Coverings, NFPA 203M-1970.

(f) All flooring in storage and handling areas, shall be of noncombustible material or protected against impregnation by ammonium nitrate and shall be without open drains, traps, tunnels, pits, or pockets into which any molten ammonium nitrate could flow and be confined in the event of fire.

(g) The continued use of an existing storage building or structure not in strict conformity with this section may be approved in cases where such continued use will not constitute a hazard to life or adjoining property.

(h) Buildings and structures shall be dry and free from water seepage through the roof, walls, and floors.

(3) Storage of ammonium nitrate in bags, drums, or other containers.

(a) Bags and containers used for ammonium nitrate must comply with specifications and standards required for use in interstate commerce (see 49 CFR Chapter I).

(b) Containers used on the premises in the actual manufacturing or processing need not comply with provisions of (a) of this subsection.

(c) Containers of ammonium nitrate shall not be accepted for storage when the temperature of the ammonium nitrate exceeds 130°F (54.4°C).

(d) Bags of ammonium nitrate shall not be stored within 30 inches (76 cm) of the storage building walls and partitions.

(e) The height of piles shall not exceed 20 feet (6.1 m). The width of piles shall not exceed 20 feet (6.1 m) and the length 50 feet (15.2 m) except that where the building is of noncombustible construction or is protected by automatic sprinklers the length of piles shall not be limited. In no case shall the ammonium nitrate be stacked closer than 36 inches (0.9 m) below the roof or supporting and spreader beams overhead.

(f) Aisles shall be provided to separate piles by a clear space of not less than 3 feet (0.9 m) in width. At least one service or main aisle in the storage area shall be not less than 4 feet (1.2 m) in width.

(4) Storage of bulk ammonium nitrate.

(a) Warehouses shall have adequate ventilation or be capable of adequate ventilation in case of fire.

(b) Unless constructed of noncombustible material or unless adequate facilities for fighting a roof fire are available, bulk storage structures shall not exceed a height of 40 feet (12.2 m).

(c) Bins shall be clean and free of materials which may contaminate ammonium nitrate.

(d) Due to the corrosive and reactive properties of ammonium nitrate, and to avoid contamination, galvanized iron, copper, lead, and zinc shall not be used in a bin construction unless suitably protected. Aluminum bins and wooden bins protected against impregnation by ammonium nitrate are permissible. The partitions dividing the ammonium nitrate storage from other products which would contaminate the ammonium nitrate shall be of tight construction.

(e) The ammonium nitrate storage bins or piles shall be clearly identified by signs reading "ammonium nitrate" with letters at least 2 inches (5 cm) high.

(f) Piles or bins shall be so sized and arranged that all material in the pile is moved out periodically in order to minimize possible caking of the stored ammonium nitrate.

(g) Height or depth of piles shall be limited by the pressure-setting tendency of the product. However, in no case shall the ammonium nitrate be piled higher at any point than 36 inches (0.9 m) below the roof or supporting and spreader beams overhead.

(h) Ammonium nitrate shall not be accepted for storage when the temperature of the product exceeds 130°F (54.4°C).

(i) Dynamite, other explosives, and blasting agents shall not be used to break up or loosen caked ammonium nitrate.

(5) Contaminants.

(a) Ammonium nitrate shall be in a separate building or shall be separated by approved type firewalls of not less than 1 hour fire-resistance rating from storage or organic chemicals, acids, or other corrosive materials, materials that may require blasting during processing or handling, compressed flammable gases, flammable and combustible materials or other contaminating substances, including but not limited to animal fats, baled cotton, baled rags, baled scrap paper, bleaching powder, burlap or cotton bags, caustic soda, coal, coke, charcoal, cork, camphor, excelsior, fibers of any kind, fish oils, fish meal, foam rubber, hay, lubricating oil, linseed oil, or other oxidizable or drying oils, naphthalene, oakum, oiled clothing, oiled paper, oiled textiles, paint, straw, sawdust, wood shavings, or vegetable oils. Walls referred to in this subsection need extend only to the underside of the roof.

(b) In lieu of separation walls, ammonium nitrate may be separated from the materials referred to in (a) of this subsection by a space of at least 30 feet (9.1 m).

(c) Flammable liquids such as gasoline, kerosene, solvents, and light fuel oils shall not be stored on the premises except when such storage conforms to WAC 296-24-330, and when walls and sills or curbs are provided in accordance with (a) or (b) of this subsection.

(d) LP-Gas shall not be stored on the premises except when such storage conforms to WAC 296-24-475.

(e) Sulfur and finely divided metals shall not be stored in the same building with ammonium nitrate except when such storage conforms to chapter 296-52 WAC and NFPA Std. 495, Explosive Materials Code.

(f) Explosives and blasting agents shall not be stored in the same building with ammonium nitrate except on the premises of makers, distributors, and user-compounders of explosives or blasting agents.

(g) Where explosives or blasting agents are stored in separate buildings, other than on the premises of makers, distributors, and user-compounders of explosives or blasting agents, they shall be separated from the ammonium nitrate by the distances and/or barricades specified in Table H-22 of WAC 296-52-481, but by not less than 50 feet (15.2 m).

(h) Storage and/or operations on the premises of makers, distributors, and user-compounders of explosives or blasting agents shall be in conformity with chapter 296-52 WAC.

(6) General precautions.

(a) Electrical installations shall conform to the requirements of chapter 296-24 WAC, Part L, and WAC 296-800-280, for ordinary locations. They shall be designed to minimize damage from corrosion.

(b) In areas where lightning storms are prevalent, lightning protection shall be provided. (See the Lightning Protection Code, NFPA 78-1992.)

(c) Provisions shall be made to prevent unauthorized personnel from entering the ammonium nitrate storage area.

(7) Fire protection.

(a) Not more than 2,500 (2270 metric) tons of bagged ammonium nitrate shall be stored in a building or structure not equipped with an automatic sprinkler system. Sprinkler systems shall be of the approved type and installed in accordance with WAC 296-24-607.

(b) Suitable fire control devices such as small hose or portable fire extinguishers shall be provided throughout the warehouse and in the loading and unloading areas. Suitable fire control devices shall comply with the requirements of WAC 296-24-592 and 296-24-602.

(c) Water supplies and fire hydrants shall be available in accordance with recognized good practices.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-52-465, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 95-07-014, § 296-52-465, filed 3/6/95, effective 4/20/95; 91-03-044 (Order 90-18), § 296-52-465, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-465, filed 5/6/86.]

WAC 296-52-489 Transportation. (1) Regulations governing the transportation of explosives on public highways are adopted by the United States Department of Transportation (see 49 CFR Parts 100 through 199) and the Washington utilities and transportation commission and administered by the Washington state patrol.

(2) The regulations of this section shall be applicable in-and-on job sites and off-highway roads. The department of labor and industries shall administer these regulations in locations such as but not limited to: Construction or mining access roads and blast sites; off-highway forest roads including both publicly and privately owned logging roads, haul roads or general access roads.

Note: Examples of publicly owned off-highway roads where these regulations are applicable shall include, but are not limited to: U.S. Forest Service roads, Bureau of Land Management roads, state department of natural resources roads, but specifically not including the state or interstate highway system.

(a) No person shall be allowed to smoke, carry matches or any other flame-producing device, except guards or commissioned law enforcement officers, to carry any firearms or loaded cartridges while in or near a motor vehicle transporting explosives; or drive, load, or unload such vehicle in a careless or reckless manner.

(b) Explosives shall not be carried on any vehicle while vehicle is being used to transport workers other than driver and two persons.

(c) Explosives shall be transferred from a disabled vehicle to another, only when proper and qualified supervision is provided. Local fire and police departments shall be promptly notified in congested areas. In remote areas they shall be notified if appropriate.

(d) Other materials or supplies shall not be placed on or in the cargo space of a conveyance containing explosives, detonating cord or detonators, except carrying safety fuse, and properly secured, nonsparking equipment used expressly in the handling of such explosives will be permissible.

(3) Transportation vehicles.

(a) All vehicles used for transporting explosives shall be strong enough to carry the load without difficulty and be in good mechanical condition. The cargo compartment(s) shall have a tight floor and must not have any exposed spark producing metal on the inside which could come into contact with explosives cargo.

(b) Explosives vehicles used on any roadway which is open to public travel shall comply with WAC 296-52-550, Appendix II.

(c) Open top explosives transportation vehicles may only be used on the jobsite or on roads which are not open to public travel (while laden with explosives). In open top vehicles or trailers, explosives may only be transported in the original DOT approved shipping container(s)/box(es) or a daybox or portable magazine which complies with the requirements of this chapter. In all instances the explosive container(s), box(es), daybox or portable magazine shall be secured to the bed of the vehicle or trailer.

(i) If an explosives transportation vehicle or trailer does not have a fully enclosed cargo area with nonsparking interior, the cargo bed and all explosive cargo shall be covered with a flameproof and moisture-proof tarpaulin or other effective protection against moisture and sparks. Whenever tarpaulins are used for covering explosives, both the tarpaulin and the explosives container shall be secured to the body of the truck bed by means of rope, wire, or other equally efficient tie downs.

(ii) Packages of explosives shall not be loaded above the sides on open-sided vehicles.

(4) Vehicles shall be placarded and displayed as specified by the United States Department of Transportation, CFR 49-1981, Parts 100 through 199. Placards shall remain on the vehicle until all explosives have been removed from the vehicle.

(5)(a) Each motor vehicle used for transporting explosives shall be equipped with a minimum of two extinguishers, each having a rating of at least 2A 10BC. The driver shall be trained in the use of the extinguishers on the vehicle.

(i) Only extinguishers listed or approved by a nationally recognized testing laboratory shall be deemed suitable for use on explosives-carrying vehicles. Refer to WAC 296-24-58501(19) and 296-800-300 for definition of listed, and federal regulation 29 CFR 1910.7 for nationally recognized testing laboratory.

(ii) Extinguishers shall be filled and ready for immediate use and readily available. Extinguishers shall be examined periodically by a competent person.

(b) A motor vehicle used for transporting explosives shall be given the following inspection to determine that it is in proper condition for safe transportation of explosives:

(i) Fire extinguishers shall be filled and in working order.

(ii) All electrical wiring shall be completely protected and securely fastened to prevent short-circuiting.

(iii) Chassis, motor, pan, and underside of body shall be reasonably clean and free of excess oil and grease.

(iv) Fuel tank and feedline shall be secure and have no leaks.

(v) Brakes, lights, horn, windshield wipers, and steering apparatus shall function properly.

(vi) Tires shall be checked for proper inflation and defects.

(vii) The vehicle shall be in proper condition in every other respect and acceptable for handling explosives.

(c) Motor vehicles or conveyances carrying explosives, blasting agents, or blasting supplies, shall not be taken inside a garage or shop for repairs or servicing.

(6) Operation of transportation vehicles.

(a) Vehicles transporting explosives shall only be driven by and be in the charge of a licensed driver who is not less than twenty-one years of age, physically fit, careful, capable, reliable, able to read and write the English language, and not addicted to the use, or under the influence of intoxicants, narcotics, or other dangerous drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others. They shall be familiar with the traffic regulations, state laws, and the provisions of this section.

(i) Explosives may only be transported by a licensed manufacturer, blaster, purchaser or seller, or the designated agent or representative thereof, or a contract carrier for hire who complies with all requirements for transportation of hazardous materials.

(ii) The person in control of the explosive laden vehicle shall be made aware of the nature of the cargo and pertinent safety precautions relating to the particular explosive(s) being transported.

(b) Parking. A motor vehicle which contains Class A or Class B explosives must not be parked under any of the following circumstances:

(i) On or within 5 feet of the traveled portion of a public street or highway;

(ii) On private property (including premises of a fueling or eating facility) without the knowledge and consent of the person who is in charge of the property and who is aware of the nature of the hazardous materials the vehicle contains; or

(iii) Within 300 feet of a bridge, tunnel, dwelling, building, or place where people work, congregate, or assemble, except for brief periods when the necessities of operation require the vehicle to be parked and make it impracticable to park the vehicle in any other place.

(c) Every motor vehicle transporting any quantity of Class A or Class B explosives shall, at all times, be attended by a driver or other attendant of the motor carrier. This attendant shall have been made aware of the class of the explosive material in the vehicle and of its inherent dangers, and shall have been instructed in the measures and procedures to be followed in order to protect the public from those dangers. The attendant shall have been made familiar with the vehicle to which assigned, and shall be trained, supplied with the necessary means, and authorized to move the vehicle when required.

(i) For the purpose of this subdivision, a motor vehicle shall be deemed "attended" only when the driver or other attendant is physically on or in the vehicle, or has the vehicle within the driver or attendants field of vision and can reach it quickly and without any kind of interference; "attended" also means that the driver or attendant is awake, alert, and not engaged in other duties or activities which may divert their attention from the vehicle.

(ii) An explosive laden vehicle may be left unattended for a period not to exceed 48 hours provided that:

(A) The vehicle is parked in a designated parking lot which complies with NFPA Std. 498 and with the appropriate clearance table of this chapter for the type and quantity of explosives carried;

(B) The designated parking lot is correctly bermed and walled or fenced and gated to prevent unauthorized entry;

(C) The designated lot is inspected and approved by the department of labor and industries and is provided with a full-time security patrol at all times when explosives are present;

(D) Trucks used for explosives delivery which contain only blasting agents (International Class 1.5 D) and no high explosives need not be attended provided the vehicle is locked to prevent movement of the vehicle, the cargo compartments are locked to prevent theft, the vehicle is parked according to all applicable storage distance requirements, and

the vehicle is located in a secured area which restricts entry to the area by unauthorized personnel.

(d) No spark-producing metal, spark-producing tools, oils, matches, firearms, electric storage batteries, flammable substances, acids, oxidizing materials, or corrosive compounds shall be carried in the body of any motor truck and/or vehicle transporting explosives, unless the loading of such dangerous articles and the explosives comply with U.S. Department of Transportation regulations.

(e) Vehicles transporting explosives shall avoid congested areas and heavy traffic.

(f) Delivery and issue of explosives shall only be made by and to authorized persons and into authorized magazines or authorized temporary storage or handling area.

(7) Transporting blasting caps and explosives in the same vehicle.

(a) Fuse type blasting caps, blasting caps with safety fuse and/or blasting caps with metal clad mild detonating fuse shall not be transported over the highways on the same vehicle or trailer with other explosives, unless packaged, segregated, and transported in accordance with the department of transportation's hazardous materials regulations.

(b) Blasting caps rated by U.S. DOT as nonmass detonating may be transported in the same vehicle or trailer with other explosives when:

(i) The caps are carried in DOT approved shipping containers:

(ii) The truck or trailer complies with Appendix 1, WAC 296-52-550.

(8) When primers are made up at a central primer house for use in high speed tunneling, the following shall apply:

(a) Only enough primers shall be made up for each round of blasting.

(b) The primers shall be placed in separate containers or bins, categorized by degree of delay in such a manner so as to prevent them from physical impact.

(c) Explosives carried in the same magazine shall be separated by 1/4-inch steel, covered on each side by four inches of hardwood planking, or equivalent.

(d) Hoist operators shall be notified before explosives or blasting agents are transported in a shaft conveyance.

(e) Explosives and blasting agents shall be hoisted, lowered, or conveyed in a powder car. No other materials, supplies, or equipment shall be transported in the same conveyance at the same time.

(f) Only a state approved powder car or conveyance shall be used underground.

(g) All explosives or blasting agents in transit underground shall be taken to the place of use or storage without delay.

(h) The quantity of explosives or blasting agents taken to an underground loading area shall not exceed the amount estimated to be necessary for the blast.

(i) The number of primers for one round will be removed from the state approved car or vehicle at the face or heading after the drilling has been completed and the holes readied for loading. After loading the charge, the powder car or vehicle will be withdrawn from the tunnel.

(j) Wires on electric caps shall be kept shunted until wired to the bus wires.

(k) The powder car or conveyance shall be inspected daily for lights, brakes and external damage to electrical circuitry. The electrical system shall be checked weekly to detect any failures that may constitute an electrical hazard and a written certification record of such inspection shall be kept on file for the duration of the job. The certification record shall contain the date of inspection, the serial number or other positive identification of the unit being inspected and the signature of the person performing the inspection.

(l) The installation of auxiliary lights on truck beds, which are powered by the truck's electrical system, shall be prohibited.

(m) No one, except the operator, the helper, and/or the powderperson, shall be permitted to ride on a conveyance transporting explosives and blasting agents.

(n) No person shall ride in any shaft conveyance transporting explosives and blasting agents.

(o) No explosives or blasting agents shall be transported on a crew-haul trip.

(p) The car or conveyance containing explosives or blasting agents shall be pulled, not pushed, whenever possible.

(q) The powder car or conveyance especially built for the purpose of transporting explosives or blasting agents shall bear a reflectorized sign on each side with the word "explosives" in letters not less than 4 inches in height; upon a background of sharply contrasting color.

(r) Compartments for transporting detonators and explosives in the same car or conveyance shall be physically separated by a distance of 24 inches or by a solid partition at least 6 inches thick.

(s) Detonators and other explosives shall not be transported at the same time in any shaft conveyance.

(t) Explosives and/or blasting agents, not in original containers, shall be placed in a suitable container when transported manually.

(u) No explosives or blasting agents shall be transported on any locomotive. At least two car lengths shall separate the locomotive from the powder car.

(9) When explosives are carried to the blasting site from the main storage magazines by the blaster or helper:

(a) Special insulated containers or original DOT shipping containers shall be used for this purpose, either boxes or bags, one container for explosives and one for detonators.

(b) Detonators or explosives shall never be carried in pockets of clothing.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-52-489, filed 5/9/01, effective 9/1/01; 99-17-094, § 296-52-489, filed 8/17/99, effective 12/1/99. Statutory Authority: RCW 49.17.040. 98-19-056, § 296-52-489, filed 9/15/98, effective 11/8/98. Statutory Authority: Chapter 49.17 RCW. 95-07-014, § 296-52-489, filed 3/6/95, effective 4/20/95; 92-17-022 (Order 92-06), § 296-52-489, filed 8/10/92, effective 9/10/92; 91-03-044 (Order 90-18), § 296-52-489, filed 1/10/91, effective 2/12/91; 88-23-054 (Order 88-25), § 296-52-489, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-489, filed 5/6/86.]

WAC 296-52-497 Blasting agents. (1) General. Unless otherwise set forth in this section, blasting agents, excluding water gels, shall be transported, stored, and used in the same manner as explosives. Water gels are covered in WAC 296-52-501.

(2) Fixed location mixing.

(a) Buildings or other facilities used for mixing blasting agents shall be located, with respect to inhabited buildings, passenger railroads, and public highways, in accordance with Table H-20. In determining the distance separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H-20), the sum of all masses which may propagate (i.e., lie at distances less than prescribed in Table H-22) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only fifty percent of its weight shall be used because of its reduced blast effects.

(b) Buildings used for the mixing of blasting agents shall conform to the requirements of this section.

(i) Buildings shall be of noncombustible construction or sheet metal on wood studs.

(ii) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

(iii) All fuel oil storage facilities shall be separated from the mixing plant and located in such a manner that in case of tank rupture, the oil will drain away from the mixing plant building.

(iv) The building shall be well ventilated.

(v) Heating units which do not depend on combustion processes, when properly designed and located, may be used in the building. All direct sources of heat shall be located outside the mixing building.

(vi) All internal-combustion engines used for electric power generation shall be located outside the mixing plant building, or shall be properly ventilated and isolated by a fire-wall. The exhaust systems on all such engines shall be located so any spark emission cannot be a hazard to any materials in or adjacent to the plant.

(c) Equipment used for mixing blasting agents shall conform to the requirements of this subsection.

(i) The design of the mixer shall minimize the possibility of frictional heating, compaction, and especially confinement. All bearings and drive assemblies shall be mounted outside the mixer and protected against the accumulation of dust. All surfaces shall be accessible for cleaning.

(ii) Mixing and packaging equipment shall be constructed of materials compatible with the fuel-ammonium nitrate composition.

(iii) Suitable means shall be provided to prevent the flow of fuel oil to the mixer in case of fire. In gravity flow systems an automatic spring-loaded shutoff valve with fusible link shall be installed.

(d) The provisions of this subsection shall be considered when determining blasting agent compositions.

(i) The sensitivity of the blasting agent shall be determined by means of a No. 8 test blasting cap at regular intervals and after every change in formulation.

(ii) Oxidizers of small particle size, such as crushed ammonium nitrate prills or fines, may be more sensitive than coarser products and shall, therefore, be handled with greater care.

(iii) No hydrocarbon liquid fuel with flashpoint lower than that of No. 2 diesel fuel oil 125°F. minimum shall be used.

(iv) Crude oil and crankcase oil shall not be used.

(v) Metal powders such as aluminum shall be kept dry and shall be stored in containers or bins which are moisture-resistant or weathertight. Solid fuels shall be used in such manner as to minimize dust explosion hazards.

(vi) Peroxides and chlorates shall not be used.

(e) All electrical switches, controls, motors, and lights located in the mixing room shall conform to the requirements in chapter 296-24 WAC, Part L, and WAC 296-800-280; otherwise they shall be located outside the mixing room. The frame of the mixer and all other equipment that may be used shall be electrically bonded and be provided with a continuous path to the ground.

(f) Safety precautions at mixing plants shall include the requirements of this subsection.

(i) Floors shall be constructed so as to eliminate floor drains and piping into which molten materials could flow and be confined in case of fire.

(ii) The floors and equipment of the mixing and packaging room shall be cleaned regularly and thoroughly to prevent accumulation of oxidizers or fuels and other sensitizers.

(iii) The entire mixing and packaging plant shall be cleaned regularly and thoroughly to prevent excessive accumulation of dust.

(iv) Smoking, matches, open flames, spark-producing devices, and firearms (except firearms carried by law enforcement bomb squad members or qualified guards) shall not be permitted inside of or within 50 feet of any building or facility used for the mixing of blasting agents.

(v) The land surrounding the mixing plant shall be kept clear of brush, dried grass, leaves, and other materials for a distance of at least 25 feet.

(vi) Empty ammonium nitrate bags shall be disposed of daily in a safe manner.

(vii) No welding shall be permitted or open flames used in or around the mixing or storage area of the plant unless the equipment or area has been completely washed down and all oxidizer material removed.

(viii) Before welding or repairs to hollow shafts, all oxidizer material shall be removed from the outside and inside of the shaft and the shaft vented with a minimum one-half inch diameter opening.

(ix) Explosives shall not be permitted inside of or within 50 feet of any building or facility used for the mixing of blasting agents.

(3) Bulk delivery and mixing vehicles.

(a) The provisions of this subsection shall apply to off-highway private operations as well as to all public highway movements.

(b) A bulk vehicle body for delivering and mixing blasting agents shall conform with the requirements of this subsection.

(i) The body shall be constructed of noncombustible materials.

(ii) Vehicles used to transport bulk premixed blasting agents on public highways shall have closed bodies.

(iii) All moving parts of the mixing system shall be designed as to prevent a heat buildup. Shafts or axles which contact the product shall have outboard bearings with 1-inch minimum clearance between the bearings and the outside of the product container. Particular attention shall be given to the clearances on all moving parts.

(iv) A bulk delivery vehicle shall be strong enough to carry the load without difficulty and be in good mechanical condition.

(c) Operation of bulk delivery vehicles shall conform to the requirements of WAC 296-52-489(2). These include the placarding requirements as specified by department of transportation.

(i) The operator shall be trained in the safe operation of the vehicle together with its mixing, conveying, and related equipment. The employer shall assure that the operator is familiar with the commodities being delivered and the general procedure for handling emergency situations.

(ii) The hauling of either blasting caps or other explosives but not both, shall be permitted on bulk trucks provided that a special wood or nonferrous-lined container is installed for the explosives. Such blasting caps or other explosives shall be in DOT-specified shipping containers: See 49 CFR Chapter I.

(iii) No person shall smoke, carry matches or any flame-producing device, or carry any firearms while in or about bulk vehicles effecting the mixing transfer or down-the-hole loading of blasting agents at or near the blasting site.

(iv) Caution shall be exercised in the movement of the vehicle in the blasting area to avoid driving the vehicle on to or dragging hoses over firing lines, cap wires, or explosive materials. The employer shall assure that the driver, in moving the vehicle, has assistance of a second person to guide the driver's movements.

(v) No intransit mixing of materials shall be performed.

(d) Pneumatic loading from bulk delivery vehicles into blastholes primed with electric blasting caps or other static-sensitive systems shall conform to the requirements of this subsection.

(i) A positive grounding device shall be used to prevent the accumulation of static electricity.

(ii) A discharge hose shall be used that has a resistance range that will prevent conducting stray currents, but that is conductive enough to bleed off static buildup.

(iii) A qualified person shall evaluate all systems to determine if they will adequately dissipate static under potential field conditions.

(e) Repairs to bulk delivery vehicles shall conform to the requirements of this section.

(i) No welding or open flames shall be used on or around any part of the delivery equipment unless it has been completely washed down and all oxidizer material removed.

(ii) Before welding or making repairs to hollow shafts, the shaft shall be thoroughly cleaned inside and out and vented with a minimum one-half-inch diameter opening.

(4) Bulk storage bins.

(a) The bin, including supports, shall be constructed of compatible materials, waterproof, and adequately supported and braced to withstand the combination of all loads including impact forces arising from product movement within the bin and accidental vehicle contact with the support legs.

(b) The bin discharge gate shall be designed to provide a closure tight enough to prevent leakage of the stored product. Provision shall also be made so that the gate can be locked.

(c) Bin loading manways or access hatches shall be hinged or otherwise attached to the bin and be designed to permit locking.

(d) Any electrically driven conveyors for loading or unloading bins shall conform to the requirements of chapter 296-24 WAC, Part L, and WAC 296-800-280. They shall be designed to minimize damage from corrosion.

(e) Bins containing blasting agent shall be located, with respect to inhabited buildings, passenger railroads, and public highways, in accordance with Table H-20 and separation from other blasting agent storage and explosives storage shall be in conformity with Table H-22.

(f) Bins containing ammonium nitrate shall be separated from blasting agent storage and explosives storage in conformity with Table H-22.

(5) Transportation of packaged blasting agents.

(a) When blasting agents are transported in the same vehicle with explosives, all of the requirements of WAC 296-52-489 shall be complied with.

(b) Vehicles transporting blasting agents shall only be driven by and in charge of a driver at least twenty-one years of age who is capable, careful, reliable, and in possession of a valid motor vehicle operator's license. Such a person shall also be familiar with the states vehicle and traffic laws.

(c) No matches, firearms, acids, or other corrosive liquids shall be carried in the bed or body of any vehicle containing blasting agents.

(d) No person shall be permitted to ride upon, drive, load, or unload a vehicle containing blasting agents while smoking or under the influence of intoxicants, narcotics, or other dangerous drugs.

(e) It is prohibited for any person to transport or carry any blasting agents upon any public vehicle carrying passengers for hire.

(f) Vehicles transporting blasting agents shall be in safe operating condition at all times.

(g) When offering blasting agents for transportation on public highways the packaging, marking, and labeling of containers of blasting agents shall comply with the requirements of DOT.

(h) Vehicles used for transporting blasting agents on public highways shall be placarded in accordance with DOT regulations.

(6) Use of blasting agents. Persons using blasting agents shall comply with all of the applicable provisions of WAC 296-52-493.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-52-497, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 95-07-014, § 296-52-497, filed 3/6/95, effective 4/20/95; 91-03-044 (Order 90-18), § 296-52-497, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-497, filed 5/6/86.]

WAC 296-52-501 Water gel (slurry) explosives and blasting agents. (1) General provisions. Unless otherwise set forth in this section, water gels and emulsions shall be transported, stored and used in the same manner as explosives or blasting agents in accordance with the classification of the product.

(2) Types and classifications.

(a) Water gels and emulsion explosives containing a substance in itself classified as an explosive shall be classified as an explosive and manufactured, transported, stored, and used as specified for "explosives" in this section, except as noted in subsection (d) of this section.

(b) Water gels and emulsion explosives containing no substance in itself classified as an explosive and which are cap-sensitive as defined in WAC 296-52-417 under blasting agent shall be classified as an explosive and manufactured, transported, stored and used as specified for "explosives" in this section.

(c) Water gels and emulsion blasting agents containing no substance in itself classified as an explosive and which are not cap-sensitive as defined in WAC 296-52-417 under blasting agent shall be classified as blasting agents and manufactured, transported, stored, and used as specified for "blasting agents" in this section.

(d) When tests on specific formulations of water gels result in department of transportation classification as a Class B explosive, bullet-resistant magazines are not required, see WAC 296-52-453.

(3) Fixed location mixing.

(a)(i) Buildings or other facilities used for manufacturing emulsions and water gels shall be located with respect to inhabited buildings, passenger railroads and public highways, in accordance with Table H-21.

(ii) In determining the distances separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H-20), the sum of all masses that may propagate (i.e., lie at distances less than prescribed in Table H-22) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only fifty percent of its weight shall be used because of its reduced blast effects.

(b) Buildings used for the manufacture of emulsions of water gels shall conform to the requirements of this subsection.

(i) Buildings shall be of noncombustible construction or sheet metal on wood studs.

(ii) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

(iii) Where fuel oil is used all fuel oil storage facilities shall be separated from the manufacturing plant and located in such a manner that in case of tank rupture, the oil will drain away from the manufacturing plant building.

(iv) The building shall be well ventilated. Heating units that do not depend on combustion processes, when properly designed and located, may be used in the building. All direct sources of heat shall be provided exclusively from units located outside of the mixing building.

(v) All internal-combustion engines used for electric power generation shall be located outside the mixing plant building, or shall be properly ventilated and isolated by a fire-wall. The exhaust systems on all such engines shall be located so any spark emission cannot be a hazard to any materials in or adjacent to the plant.

(c) Ingredients of emulsion and water gels shall conform to the requirements of this subsection.

(i) Ingredients in themselves classified as Class A or Class B explosives shall be stored in conformity with WAC 296-52-461.

(ii) Nitrate-water solutions may be stored in tank cars, tank trucks, or fixed tanks without quantity or distance limitations. Spills or leaks which may contaminate combustible materials shall be cleaned up immediately.

(iii) Metal powders such as aluminum shall be kept dry and shall be stored in containers or bins which are moisture-resistant or weathertight. Solid fuels shall be used in such manner as to minimize dust explosion hazards.

(iv) Ingredients shall not be stored with incompatible materials.

(v) Peroxides and chlorates shall not be used.

(d) Mixing equipment shall comply with the requirements of this subsection.

(i) The design of the processing equipment, including mixing and conveying equipment, shall be compatible with the relative sensitivity of the materials being handled. Equipment shall be designed to minimize the possibility of frictional heating, compaction, overloading, and confinement.

(ii) Both equipment and handling procedures shall be designed to prevent the introduction of foreign objects or materials.

(iii) Mixers, pumps, valves, and related equipment shall be designed to permit regular and periodic flushing, cleaning, dismantling, and inspection.

(iv) All electrical equipment including wiring, switches, controls, motors, and lights, shall conform to the requirements of chapter 296-24 WAC, Part L, and WAC 296-800-280.

(v) All electric motors and generators shall be provided with suitable overload protection devices. Electrical generators, motors, proportioning devices, and all other electrical enclosures shall be electrically bonded. The grounding conductor to all such electrical equipment shall be effectively bonded to the service-entrance ground connection and to all equipment ground connections in a manner so as to provide a continuous path to ground.

(e) Mixing facilities shall comply with the fire prevention requirements of this subsection.

(i) The mixing, loading, and ingredient transfer areas where residues or spilled materials may accumulate shall be cleaned periodically. A cleaning and collection system for dangerous residues shall be provided.

(ii) A daily visual inspection shall be made of the mixing, conveying, and electrical equipment to establish that such equipment is in good operating condition. A program of systematic maintenance shall be conducted on regular schedule.

(iii) Heaters which are not dependent on the combustion process within the heating unit may be used within the confines of processing buildings, or compartments, if provided with temperature and safety controls and located away from combustible materials and the finished product.

(4) Bulk delivery and mixing vehicles.

(a) The design of vehicles shall comply with the requirements of this subsection.

(i) Vehicles used over public highways for the bulk transportation of emulsion and water gels or of ingredients classified as dangerous commodities, shall meet the requirements of the department of transportation and shall meet the requirements of WAC 296-52-489 and 296-52-497 of this section.

(ii) When electric power is supplied by a self-contained motor generator located on the vehicle the generator shall be at a point separate from where the water gel is discharged.

(iii) The design of processing equipment and general requirements shall conform to subsection (3)(c) and (d) of this section.

(iv) A positive action parking brake which will set the wheel brakes on at least one axle shall be provided on vehicles when equipped with air brakes and shall be used during bulk delivery operations. Wheel chocks shall supplement parking brakes whenever conditions may require.

(b) Operation of bulk delivery and mixing vehicles shall comply with the requirements of this subsection.

(i) The placarding requirements contained in DOT regulations apply to vehicles carrying water gel explosives or blasting agents.

(ii) The operator shall be trained in the safe operation of the vehicle together with its mixing, conveying, and related equipment. The operator shall be familiar with the commodities being delivered and the general procedure for handling emergency situations.

(iii) The hauling of either blasting caps or other explosives, but not both, shall be permitted on bulk trucks provided that a special wood or nonferrous-lined container is installed for the explosives. Such blasting caps or other explosives shall be in DOT-specified shipping containers; see 49 CFR Chapter I.

(iv) No person shall be allowed to smoke, carry matches or any flame-producing device, or carry any firearms while in or about bulk vehicles effecting the mixing, transfer, or down-the-hole loading of water gels at or near the blasting site.

(v) Caution shall be exercised in the movement of the vehicle in the blasting area to avoid driving the vehicle on to or dragging hoses over firing lines, cap wires, or explosive materials. The employer shall furnish the driver the assistance of a second person to guide the driver's movements.

(vi) No intransit mixing of materials shall be performed.

(vii) The location chosen for water gel or ingredient transfer from a support vehicle into the bore hole loading vehicle shall be away from the blasthole site when the bore holes are loaded or in the process of being loaded.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-52-501, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 95-07-014, § 296-52-501, filed 3/6/95, effective 4/20/95. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-501, filed 5/6/86.]

Chapter 296-54 WAC

SAFETY STANDARDS—LOGGING OPERATIONS

WAC

296-54-501	Scope and application.
296-54-507	Employer's responsibilities.
296-54-51120	Eye and face protection.
296-54-51160	Leg protection.
296-54-521	Motor vehicles.
296-54-59330	Log unloading, booms, and rafting grounds—Boats and mechanical devices on waters.
296-54-59340	Log unloading, booms, and rafting grounds—Dry land sorting and storage.

WAC 296-54-501 Scope and application. This chapter establishes safety practices for all types of logging, log road construction and other forest activities using logging machinery and/or power saws regardless of the end use of the wood. This chapter does not apply to log handling at sawmills, plywood mills, pulp mills, or other manufacturing operations governed by specific safety standards. This chapter provides minimum safety requirements for the logging industry. The logging industry is also covered by the general safety standards, chapter 296-24 WAC; occupational health standards, chapter 296-62 WAC; the safety and health core rules, chapter 296-800 WAC; or others that may apply. Chapter 296-52 WAC, which covers the possession, handling and use of explosives, applies when explosives are used in logging operations.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-54-501, filed 5/9/01, effective 9/1/01; 99-17-117, § 296-54-501, filed 8/18/99, effective 12/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-013, § 296-54-501, filed 10/28/96, effective 1/1/97. Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-54-501, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-501, filed 9/21/79.]

WAC 296-54-507 Employer's responsibilities. The employer must comply with the requirements of all safety and health regulations and must:

- (1) Provide safety training for new employees.
- (2) Take additional precautions to ensure safe logging operations when extreme weather or other extreme conditions create hazards. If the logging operation cannot be made safe, the work must be discontinued until safe to resume.
- (3) Ensure that danger trees within reach of landings, rigging, buildings, or work areas are either fell before regular logging operations begin, or arrange work so that employees are not exposed to the related hazards.

(4) Develop and maintain a chemical hazard communication program as required by WAC 296-800-170. The program must provide information to all employees about hazardous chemicals or substances to which they are exposed, or may become exposed, in the course of their employment.

(5) Ensure that intoxicating beverages and narcotics are prohibited on or near the worksite. The employer must remove from the worksite any employee under the influence of alcohol or narcotics.

Note: Narcotics do not include prescription drugs taken under a doctor's direction if the use does not endanger any employee.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-54-507, filed 5/9/01, effective 9/1/01; 99-17-117, § 296-54-507, filed 8/18/99, effective 12/1/99. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-54-507, filed 8/3/94, effective 9/12/94; 89-11-035 (Order 89-03), § 296-54-507, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-507, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-507, filed 9/21/79.]

WAC 296-54-51120 Eye and face protection. The employer must provide, at no cost to the employee, and ensure that each employee wears:

- (1) Eye protection meeting the requirements of WAC 296-800-160, where there is potential for eye injury from falling or flying objects; and
- (2) Face protection meeting the requirements of WAC 296-800-160, where there is potential for facial injury such as, but not limited to, operating a chipper. An employee using a chain saw may use either eye or face protection.

Note: The employee does not have to wear separate eye protection when the face protection also covers the eyes.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-54-51120, filed 5/9/01, effective 9/1/01; 99-17-117, § 296-54-51120, filed 8/18/99, effective 12/1/99.]

WAC 296-54-51160 Leg protection. (1) The employer must provide, at no cost to the employee, and ensure that each employee who operates a chain saw wears leg protection constructed with cut-resistant material, such as ballistic nylon. The leg protection must cover the full length of the thigh to the top of the boot on each leg to protect against contact with a moving chain saw.

EXCEPTION: This requirement does not apply to an employee working aloft in trees when supported by climbing spurs and climbing belt, or when an employee is working from a vehicle-mounted elevating and rotating work platform meeting the requirements of chapter 296-24 WAC, Part J-3, Vehicle-mounted elevating and rotating work platforms.

(2) Leg protection must be maintained in serviceable condition.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-54-51160, filed 5/9/01, effective 9/1/01; 99-17-117, § 296-54-51160, filed 8/18/99, effective 12/1/99.]

WAC 296-54-521 Motor vehicles. (1) The seats of each vehicle must be securely fastened.

(2) Each school bus type vehicle that will transport nine or more passengers must have a substantial barricade behind the driver. The barricade must extend from the floor to at least a level even with the top of the driver's head.

(3) Adequate provision must be made for safe entrance and exits. Each vehicle must have mounting steps and handholds wherever it is necessary to prevent an employee injury when entering or leaving the vehicle.

(4) When equipment or tools are carried inside the vehicle, the employer must provide and use racks, boxes, holsters or other means to transport tools so that a hazard is not created for any vehicle operator or passenger.

(5) No one may enter or exit any vehicle until the vehicle is completely stopped.

(6) Employees must keep all parts of the body within the vehicle.

(7) Heat and light must be available in the passenger area of the vehicle. Use of stoves in vehicles is prohibited.

(8) Vehicles designed to transport nine or more passengers must have an emergency exit that:

(a) Is at least six and one-half square feet in area, with the smallest dimension being at least 18 inches;

(b) Is placed at the back of the vehicle or near the back on the side opposite the regular entrance; and

(c) Has an unobstructed route to and from the exit.

(9) When no fuel is transported in the crew vehicle, a minimum rated 5/BC dry chemical fire extinguisher must be kept in the passenger compartment. When fuel is transported on the crew vehicle according to subsection (12) of this section, a minimum rated 10/BC dry chemical fire extinguisher must be kept in the passenger compartment. The extinguishing agent must be nontoxic and preferably noncorrosive.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(10) Exhaust systems must be designed and maintained to eliminate the exposure of passengers to toxic agents.

(11) Operating and maintenance instructions must be available in each vehicle. Each vehicle operator and maintenance employee must comply with the operating and maintenance instructions.

(12) Fuel must be transported or stored only in approved safety containers. Enclosed areas where fuels are carried or stored must be vented so that a hazardous concentration of fumes cannot accumulate. All containers or drums must be properly secured to the vehicle while being transported. Commercially built pick-up or flatbed trucks with a maximum seating capacity of six persons may be used to carry fuel in or on the bed of such vehicles, if the fuel is not carried in the crew compartment. Van-type vehicles may be used to carry fuel only when a vapor-proof bulkhead is installed between the passenger compartment and storage compartment. A maximum of forty-two gallons of gasoline may be carried or stored in the compartment and each container must have a maximum capacity seven gallons.

(13) Motor vehicles used regularly to transport employees must be covered against the weather and equipped and operated according to applicable state of Washington motor vehicle laws.

(14) All operators of crew vehicles must be experienced drivers and have a valid operator's license for the class of vehicle being operated.

(15) Dump trucks must only be used in an emergency to transport workers and have adequate safety chains or locking devices that eliminate the possibility of the body of the truck being raised while employees are riding in the truck. **"Emergency"** means any unforeseen circumstances that call for immediate action when danger to life or danger from fire exists.

(16) An effective means of signaling must be provided for communication between the driver and the passengers being transported when they are in separate compartments.

(17) The passenger load limit of a crew vehicle must not exceed the seating capacity of the vehicle.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-54-521, filed 8/8/01, effective 9/1/01; 99-17-117, amended and recodified as § 296-54-521, filed 8/18/99, effective 12/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-013, § 296-54-531, filed 10/28/96, effective 1/1/97. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-531, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-531, filed 9/21/79.]

WAC 296-54-59330 Log unloading, booms, and rafting grounds—Boats and mechanical devices on waters.

(1) Before starting the boat motor, any spilled fuel must be removed and vapors must be exhausted from any area in which they may accumulate.

(2) The bilge area must be kept clean and oil, grease, fuel, or highly combustible materials must not be allowed to accumulate.

(3) Adequate ventilation equipment must be provided and used for the bilge area to prevent the accumulation of toxic or explosive gases or vapors.

(4) Adequate ventilation equipment must be provided and used for the cabin area on enclosed-cabin boats to prevent an accumulation of harmful gases or vapors.

(5) Deck and cabin lighting must be provided and used where necessary to provide safe levels of illumination aboard boats. Boats operated between sunset to sunrise, or in conditions of restricted visibility, must display navigation lights as required by the United States Coast Guard. Searchlights or floodlights must be provided for safe navigation and to illuminate working or boarding areas adjacent to the craft.

(6) On craft used by employees wearing calked shoes, all areas where employees must stand or walk must be made of or be covered with wood or other suitable matting or nonslip material. The covering must be maintained in good condition.

(7) Each boat must:

(a) Be provided with a fire extinguisher; and

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(b) Have a life ring with at least fifty feet of one-fourth inch line attached.

Note: On log broncs, boomscooters, or other small boomboats where all occupants are required to wear life saving devices and a life ring would present a tripping hazard, the life ring may be omitted.

(8) Along docks, walkways, or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with at least ninety feet of one-fourth inch line attached, must be provided. The life rings must be spaced at intervals not exceeding two hundred feet and must be easily visible and readily accessible.

(a) When employees are assigned work at other casual locations where exposure to drowning exists, at least one approved life ring with at least ninety feet of line attached must be provided in the immediate vicinity of the work assigned.

(b) Lines attached to life rings on fixed installations must be at least ninety feet long, at least one-fourth inch in diameter, and have a minimum breaking strength of five hundred pounds. Similar lines attached to life rings on boats must be at least fifty feet long.

(c) Life rings must be United States Coast Guard approved thirty-inch size.

(d) Life rings and attached lines must be maintained to retain at least seventy-five percent of their designed buoyancy and strength.

(e) Where work is assigned over water where the vertical drop from an accidental fall would exceed fifty feet, special arrangements must be made with and approved by the department of labor and industries prior to such assignment.

(9) Log broncs, boomscooters, and boomboats must not be loaded with employees or equipment in a way that adversely affects stability or seaworthiness.

(10) Boats must not be operated at excessive speed or handled recklessly.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-54-59330, filed 8/8/01, effective 9/1/01; 99-17-117, § 296-54-59330, filed 8/18/99, effective 12/1/99.]

WAC 296-54-59340 Log unloading, booms, and rafting grounds—Dry land sorting and storage. (1) Unauthorized foot and vehicle traffic is prohibited in the sorting or storage area.

(2) Logs must be stored in a safe and orderly manner. Roadways and traffic lanes must be kept clear of protruding ends of logs and debris.

(3) Dry deck log storage areas must be kept orderly and maintained in a condition conducive to safe operation of mobile equipment. Roadways and walkways must have a smooth hard-packed surface wide enough to permit a safe operation. Bark, mud, and other debris must not be allowed to accumulate to the extent they constitute a hazard to the operation.

(4) The employer must implement an effective method to control dust at log dumps and in sorting and storage areas.

(5) Only an authorized person shall operate or ride any lift truck, log stacker, or log unloader.

(6) Signaling log unloader operators at dry deck areas by throwing bark or chips in the air is prohibited. Hand, horn signals or other safe, effective means must be used at all times.

(7) Unnecessary talking to the operator while operating controls of a log stacker or log unloader is prohibited.

(8) Lift forks and arms of unloading machines must be lowered to their lowest position, and all equipment brakes set before the operator leaves the machine unattended.

(9) Log unloaders or stackers must not be moved about the premises for distances greater than absolutely necessary with the lift extended above the driver's head or with loads lifted higher than is necessary for vision.

(10) When truck drivers are out of the cab, they must be in the clear, and in view of the log unloader before the lift forks are moved under the load and the lift is made.

(11) Where logs are offloaded onto a dry deck by unloading lines, a self-releasing mechanism must be used. Employees are prohibited from climbing dry decks to release unloading lines.

(12) Employees must not enter the hazardous area near or under loads of logs being lifted, moved, or suspended.

(13) When log unloaders and log stackers are designed so that logs being handled may jeopardize the safety of the operator, the employer must provide overhead protection and any other necessary safeguards.

(14) Log unloaders and log stackers must be equipped with a horn or other audible warning device. If vision is impaired or restricted to the rear, the warning device must be sounded before operating the vehicle in reverse gear and periodically while backing. The warning device must be operative at all times.

(15) A limit stop, which will prevent the lift arms from over-traveling, must be installed on electric powered log unloaders.

(16) Shear guards must be installed on unloading machines and similar equipment on which the arms pivot and move alongside the operator creating a pinch point at that location.

(17) All forklift log handling machines must be equipped with a grapple arms and the arms must be used whenever logs are being carried.

(18) When log trucks are loaded by a log stacker and the lay of any log is higher than the stakes, the log stacker must remain against the completed load, or other suitable protection provided, to prevent the logs from falling until at least two wrappers and binders have been applied.

(19) All binders and wrappers must remain on the load until an approved safeguard has been provided to prevent logs from rolling off the side of the truck or trailer when binders are released. A shear log, or equivalent means, must be provided to ensure the log truck will be stationed close enough to the wrapper rack so that a log cannot fall between the log truck and the wrapper rack when removing binders and wrappers. At least one binder must remain secured while relocating or tightening other binders. Crotch lines, forklifts, log stackers, log unloaders, or other effective means must be used for this purpose.

(20) An extra wrapper or metal band of equal strength must be placed to hold the logs when it is necessary to remove a wrapper to prevent it from being fouled by the unloading machine.

(21) Machines with arms that block the regular exit when in the up position must have an emergency exit installed.

(22) Riding on any part of a log handling machine except under the canopy guard is prohibited.

(23) Identification tags must not be applied or pulled unless logs are resting in a stationary place, such as bunks, cradles, skids, or sorting tables.

(24) Employees must not approach the immediate vicinity of a forklift-type log handling machine without first notifying the operator of the person's intention and receiving an acknowledgement from the operator.

(25) When dry land log dumps use unloading methods similar to those of water dumps, the safety standards for water dumps apply.

(26) When logs are handled between sunset and sunrise or other periods of poor visibility, the employer must provide illumination that meets the requirements of WAC 296-800-210 relating to illumination.

(27) Air operated stake releases must meet the following requirements:

(a) The air supply must be taken from the "wet" air reservoir or from the accessory air line to a spring loaded, normally closed control valve;

(b) The control valve must be located in the cab, positioned so that it is accessible only from the operator's position;

(c) The control valve must be fitted with a spring-loaded cover or otherwise guarded against inadvertent operation; and

(d) A separate air line must extend from the control valve to the tractor and trailer stake release chambers. The air line must be clearly identified or installed so that it cannot be mistaken for the service or emergency air line.

(28) Each deck must be constructed and located so it is stable and provides each employee with enough room to safely move and work in the area.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-54-59340, filed 5/9/01, effective 9/1/01; 99-17-117, § 296-54-59340, filed 8/18/99, effective 12/1/99.]

Chapter 296-56 WAC

SAFETY STANDARDS—LONGSHORE, STEVEDORE AND RELATED WATERFRONT OPERATIONS

WAC

296-56-60001	Scope and applicability.
296-56-60003	Variance and procedure.
296-56-60009	Accident prevention program.
296-56-60083	Cranes and derricks.
296-56-60171	General requirements.
296-56-60207	General requirements.

WAC 296-56-60001 Scope and applicability. (1) The rules included in this chapter apply throughout the state of Washington, to any and all waterfront operations under the jurisdiction of the department of labor and industries.

(2) These minimum requirements are promulgated in order to augment the general safety and health standards, and any other safety and health standards promulgated by the department of labor and industries which are applicable to all places of employment under the jurisdiction of the department of labor and industries. The rules of this chapter, and the

rules of chapters 296-24, 296-62 and 296-800 WAC are applicable to all longshore, stevedore and related waterfront operations: Provided, That such rules shall not be applicable to those operations under the exclusive safety jurisdiction of the federal government.

(3) The provisions of this chapter shall prevail in the event of a conflict with, or duplication of, provisions contained in chapters 296-24, 296-62 and 296-800 WAC. Specific standards which are applicable include, but are not limited to:

(a) Electrical—Chapter 296-24 WAC Part L, and WAC 296-800-280.

(b) Toxic and hazardous substances are regulated by chapter 296-62 WAC. Where references to this chapter are given they are for informational purposes only. Where specific requirements of this chapter conflict with the provisions of chapter 296-62 WAC this chapter prevails. Chapter 296-62 WAC does not apply when a substance or cargo is contained within a manufacturer's original, sealed, intact means of packaging or containment complying with the department of transportation or International Maritime Organization requirements.

(c) Hearing conservation—Chapter 296-62 WAC Part K.

(d) Standards for commercial diving operations—Chapter 296-37 WAC.

(e) Safety requirements for scaffolding—Chapter 296-24 WAC Part J-2.

(f) Safe practices of abrasive blasting operations—Chapter 296-24 WAC Part H-2.

(g) Access to employee exposure and medical records—Chapter 296-62 WAC Part B.

(h) Respiratory protection—Chapter 296-62 WAC Part E.

(i) Safety standards for grain handling facilities—Chapter 296-99 WAC.

(j) Chemical hazard communication program—WAC 296-800-170.

(k) Asbestos—Chapters 296-62 Part I-1 and 296-65 WAC.

(l) Permit - required confined spaces and confined space—Chapter 296-62 WAC Part M.

(m) Servicing multi-piece and single-piece rim wheels—Chapter 296-24 WAC Part D.

(n) First-aid requirements—WAC 296-800-150.

(o) Employee emergency plans and fire prevention plans—Chapter 296-24 WAC Part G-1.

(4) The provisions of this chapter do not apply to the following:

(a) Fully automated bulk coal handling facilities contiguous to electrical power generating plants.

(b) Facilities subject to the regulations of the office of pipeline safety regulation of the materials transportation bureau, department of transportation, to the extent such regulations apply.

(5) WAC 296-62-074 shall apply to the exposure of every employee to cadmium in every employment and place of employment covered by chapter 296-56 WAC in lieu of any different standard on exposures to cadmium that would otherwise be applicable by virtue of those sections.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-56-60001, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-02-024, § 296-56-60001, filed 12/30/98, effective 3/30/99. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-56-60001, filed 1/18/95, effective 3/1/95; 93-07-044 (Order 93-01), § 296-56-60001, filed 3/13/93, effective 4/27/93. Statutory Authority: Chapter 49.17 RCW and RCW 49.17.040, [49.17].050 and [49.17].060. 92-22-067 (Order 92-06), § 296-56-60001, filed 10/30/92, effective 12/8/92. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-56-60001, filed 11/22/91, effective 12/24/91; 89-11-035 (Order 89-03), § 296-56-60001, filed 5/15/89, effective 6/30/89; 88-14-108 (Order 88-11), § 296-56-60001, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60001, filed 1/17/86; 85-10-004 (Order 85-09), § 296-56-60001, filed 4/19/85; 85-01-022 (Order 84-24), § 296-56-60001, filed 12/11/84.]

WAC 296-56-60003 Variance and procedure. Conditions may exist under which certain state standards will not have practical application. In these cases, the director of the department of labor and industries has made provisions for the issuance of variances. The director or his/her authorized representative may, pursuant to this section, RCW 49.17.080 and 49.17.090, and WAC 296-350-700, upon receipt of application and after investigation by the department, permit a variation from the requirements of this chapter. Any variance is limited to the particular case and application. It shall remain posted during the time which it is in effect. Variance application forms may be obtained from the department.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-56-60003, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-56-60003, filed 1/18/95, effective 3/1/95. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60003, filed 1/17/86; 85-01-022 (Order 84-24), § 296-56-60003, filed 12/11/84.]

WAC 296-56-60009 Accident prevention program.

(1) An accident prevention program, which provides equitable management-employee participation, shall be established in all establishments, industrial plants, or operations.

(2) It shall be the responsibility of the employer to initiate and maintain the accident prevention program necessary to comply with this section. The division of WISHA services may be contacted for assistance in initiating and maintaining an effective accident prevention program.

(3) All accident prevention programs shall be tailored to the needs of the particular operation.

(4) Employer and employee representatives, as elected, delegated or appointed, shall attend and actively take part in frequent and regular safety committee meetings.

(5) Accident prevention programs shall provide for employer-employee safety meetings and frequent and regular safety inspections of job sites, materials, equipment, and operating procedures.

(6) A record of safety activities, such as inspections and meetings, shall be maintained by the employer for a period covering the previous twelve months and shall be made available, upon request, to noncompliance personnel of the department of labor and industries.

(7) Employees shall individually comply with all safety rules and cooperate with management in carrying out the accident prevention program.

(8) To make effective the preceding statement and promote on-the-job accident prevention, committees shall be established in each port. These committees shall consist of an equal number of port or stevedore company and longshoremen representatives at the job level with the industry or company safety supervisor serving as secretary and coordinator. Some functions of the committee are to maintain the interest of the workers in accident prevention by providing for their actual participation in the program, to direct their attention to the real causes of accidents, and to provide a means for making practical use of their intimate knowledge of working conditions and practices.

(9) It is intended that this program will produce mutually practical and effective recommendations regarding correction of accident-producing circumstances and conditions.

Note: For first aid requirements, see WAC 296-800-150.

Note: For emergency plan and fire prevention plan requirements, see chapter 296-24 WAC Part G-1.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-56-60009, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-02-024, § 296-56-60009, filed 12/30/98, effective 3/30/99. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-56-60009, filed 1/18/95, effective 3/1/95. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60009, filed 1/17/86; 85-01-022 (Order 84-24), § 296-56-60009, filed 12/11/84.]

WAC 296-56-60083 Cranes and derricks. (1) Scope.

(a) This section through WAC 296-56-60103 applies to every kind of crane and derrick and to any other type of equipment performing the functions of a crane or derrick except as noted in (b) of this subsection.

(b) This section does not apply to small industrial truck-type cranes, container handling toploaders and sideloaders, chain hoists, and mobile straddle-type cranes incapable of straddling two or more intermodal containers (sixteen feet (4.88 m) in width).

(2) Ratings.

(a) Except for bridge cranes covered by subsection (7) of this section, cranes and derricks having ratings that vary with boom length, radius (outreach) or other variables shall have a durable rating chart visible to the operator, covering the complete range of the manufacturer's (or design) capacity ratings. The rating chart shall include all operating radii (outreach) for all permissible boom lengths and jib lengths as applicable, with and without outriggers, and alternate ratings for optional equipment affecting such ratings. Precautions or warnings specified by the owner or manufacturer shall be included.

(b) The manufacturer's (or design) rated loads for the conditions of use shall not be exceeded.

(c) Designated working loads shall not be increased beyond the manufacturer's ratings or original design limitations unless such increase receives the manufacturer's approval. When the manufacturer's services are not available or where the equipment is of foreign manufacture, engineering design analysis shall be performed or approved by a person accredited for certifying the equipment under WAC 296-56-60093. Cranes shall conform with the manufacturer's specifications or any current ANSI standards that apply. Engineering design analysis shall be performed by a registered professional engineer competent in the field of cranes

and derricks. Any structural changes necessitated by the change in rating shall be carried out.

(3) Radius indicator. When the rated load varies with the boom radius, the crane or derrick shall be fitted with a boom angle or radius indicator visible to the operator.

(4) Prohibited usage.

(a) Equipment shall not be used in a manner that exerts sideload stresses upon the crane or derrick boom.

(b) No crane or derrick having a visible or known defect that affects safe operation shall be used.

(5) Protective devices.

(a) When exposed moving parts such as gears, chains and chain sprockets present a hazard to employees during crane and derrick operations, those parts shall be securely guarded.

(b) Crane hooks shall be latched or otherwise secured to prevent accidental load disengagement.

(c) When hoisting personnel in an approved man basket, the hook shall have a positive safety latch to prevent rollouts.

(6) General.

(a) Operating controls.

(i) Crane and derrick operating controls shall be clearly marked, or a chart indicating their function shall be posted at the operator's position.

(ii) All crane controls shall operate in a uniform manner within a given port.

(iii) Overhead bridge and container gantry crane operating control levers shall be self-centering so that they will automatically move to the "off" position when the operator releases the control.

(b) Booms. Cranes with elevatable booms and without operable automatic limiting devices shall be provided with boom stops if boom elevation can exceed maximum design angles from the horizontal.

(c) Foot pedals. Foot pedals shall have a nonskid surface.

(d) Access. Ladders, stairways, stanchions, grab irons, foot steps or equivalent means shall be provided as necessary to ensure safe access to footwalks, cab platforms, the cab and any portion of the superstructure which employees must reach.

(i) Footwalks shall be of rigid construction, and shall be capable of supporting a load of one hundred pounds (4.79 kPa) per square foot.

(ii) If more than twenty feet (6.1 m) in height, vertical ladders shall comply with WAC 296-56-60209 (4), (5)(a), (5)(b)(iii) and (5)(b)(iv).

(iii) Stairways on cranes shall be equipped with rigid handrails meeting the requirements of WAC 296-56-60123 (5)(a).

(iv) If the top of a ladder or stairway or any position thereof is located where a moving part of a crane, such as a revolving house, could strike an employee ascending or descending the ladder or stairway, a prominent warning sign shall be posted at the foot of the ladder or stairway. A system of communication (such as a buzzer or bell) shall be established and maintained between the foot of the ladder or stairway and the operator's cab.

(e) Operator's station. The cab, controls, and mechanism of the equipment shall be so arranged that the operator has a clear view of the load or signal person, when one is used. Cab glass, when used, shall be safety plate glass or equivalent and good visibility shall be maintained through the glass. Clothing, tools and equipment shall be stored so as not to interfere with access, operation, or the operator's view.

(f) A seat (lap) belt, meeting the requirements of 49 CFR 571.208-210 for a Type 1 seat belt assembly, shall be installed on the operator's seat of high speed container gantry cranes where the seat trolleys.

(g) Counterweights or ballast. Cranes shall be operated only with the specified type and amount of ballast or counterweights. Ballast or counterweight shall be located and secured only as provided in the manufacturer's or design specifications, which shall be available.

(h) Outriggers. Outriggers shall be used according to the manufacturer's specifications or design data, which shall be available. Floats, when used, shall be securely attached to the outriggers. Wood blocks or other support shall be of sufficient size to support the outrigger, free of defects that may affect safety and of sufficient width and length to prevent the crane from shifting or toppling under load.

(i) Exhaust gases. Engine exhaust gases shall be discharged away from the normal position of crane operating personnel.

(j) Electrical equipment shall be so located or enclosed that live parts will not be exposed to accidental contact. Designated persons may work on energized equipment only if necessary during inspection, maintenance, or repair.

(k) Fire extinguisher.

(i) At least one portable fire extinguisher of at least 5-BC rating or equivalent shall be accessible in the cab of the crane or derrick.

(ii) No portable fire extinguisher using carbon tetrachloride or chlorobromomethane extinguishing agents shall be used.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(l) Rope on drums. At least three full turns of rope shall remain on ungrooved drums, and two turns on grooved drums, under all operating conditions. Wire rope shall be secured to drums by clamps, U-bolts, shackles, or equivalent means. Fiber rope fastenings are prohibited.

(m) Assembly or disassembly of boom sections. Mobile crane booms being assembled or disassembled on the ground with or without the support of the boom harness shall be blocked to prevent dropping of the boom or boom sections.

(n) Brakes.

(i) Each independent hoisting unit of a crane shall be equipped with at least one holding brake, applied directly to the motor shaft or gear train.

(ii) 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 a controlled braking means to control lowering speeds.

(iii) Holding brakes for hoist units shall have not less than the following percentage of the rated load hoisting torque at the point where the brake is applied:

(A) One hundred twenty-five percent when used with a controlled braking means.

(B) One hundred percent when used with a mechanically-controlled braking means.

(C) One hundred percent when two holding brakes are provided.

(iv) All power control braking means shall be capable of maintaining safe lowering speeds of rated loads.

(o) Each crane or derrick shall be equipped with sufficient lights to maintain five foot candles in the working area around the load hook. All crane ladders and machinery houses shall be illuminated at a minimum of two candle power.

(p) Light fixtures connected to the boom, gantry legs, or machinery house shall be provided with safety devices which will prevent the light fixture from falling in case of bracket failure.

(q) Electronic devices may be installed to prevent collision subject to approval of the accredited certification agency.

(r) On all rail gantry cranes, truck guards shall extend on the ends of the trucks, close to the top of the rail to prevent worker's feet from being caught between the rail and wheel. This subsection does not apply if rail sweeps are present.

(s) All hydraulic cylinders used to control crane booms or to provide crane stability (outriggers) shall be equipped with a pilot operated check valve or a device which will prevent the boom or outrigger from retracting in case of failure of a component of the hydraulic system.

(t) Gantry cranes shall be provided with automatic rail clamps or other devices to prevent the crane from moving when not being used or when power is off.

(7) Rail-mounted cranes (excluding locomotive types).

(a) For the purposes of this section, rail-mounted cranes include bridge cranes and portal cranes.

(b) Rated load marking. The rated loads of bridge cranes shall be plainly marked on each side of the crane and in the cab. If there is more than one hoisting unit, each hoist shall have its rated load marked on it or on its load block. Marking shall be legible from the ground level.

(c) Wind-indicating devices.

(i) Each rail-mounted bridge and portal crane located outside of an enclosed structure shall be fitted with an operable wind-indicating device.

(ii) The wind indicating device shall provide a visible or audible warning to alert the operator of high wind conditions. That warning shall be transmitted whenever the following circumstances are present:

(A) When wind velocity reaches the warning speed, not exceeding the crane manufacturer's recommendations; and

(B) When wind velocity reaches the shutdown speed, not exceeding the crane manufacturer's recommendations, at which work is to be stopped and the crane secured.

(iii) Instructions. The employer shall post operating instructions for high wind conditions in the operator's cab of each crane. Operators shall be directed to comply with these instructions. The instructions shall include procedures for responding to high wind alerts and for any coordination necessary with other cranes.

(d) Securing of cranes in high winds.

(i) When the wind reaches the crane's warning speed:

(A) Gantry travel shall be stopped; and

(B) The crane shall be readied for shutdown.

(ii) When the wind reaches the crane's shutdown speed:

(A) Any portion of the crane spanning or partially spanning a vessel shall be moved clear of the vessel if safe to do so; and

(B) The crane shall be secured against travel, using all available means of securing.

(e) The employer shall monitor local weather conditions by subscribing to a weather service or using equally effective means.

(f) Stops and bumpers.

(i) The ends of all tracks shall be equipped with stops or bumpers. If a stop engages the tread of the wheel, it shall be of a height not less than the radius of the wheel.

(ii) When more than one crane operates on the same runway or more than one trolley on the same bridge, each crane or trolley shall be equipped with bumpers or equivalent devices at adjacent ends subject to impact.

(g) Employee exposure to crane movement. When employees may be in the vicinity of the tracks, crane trucks shall be equipped with personnel-deflecting guards.

(h) Pedestrian clearance. If the track area is used for employee passage or for work, a minimum clearance of three feet (0.91 m) shall be provided between trucks or the structures of rail-mounted cranes and any other structure or obstruction. When the required clearance is not available on at least one side of the crane's trucks, the area shall not be used and shall be marked and identified.

(i) Warning devices. Rail-mounted cranes shall be equipped with an effective audible and visible travel warning device which shall be used to warn employees who may be in the path of the moving crane.

(j) Communications.

(i) Means of communication shall be provided between the operator's cab and the base of the gantry of all rail-mounted cranes. This requirement may be met by telephone, radio, sound-signaling system or other effective methods, but not solely by hand-signaling.

(ii) All rail-mounted cranes thirty ton and above capacity shall be equipped with a voice hailing device (PA system) from the operator to the ground, audible within one hundred feet.

(k) Limit switch bypass systems shall be secured during all cargo operations. Such bypass systems shall not be used except in an emergency or during noncargo handling operations such as stowing cranes or derricks or performing repairs. When a situation requiring the use of a bypass system or the readjustment of a limit switch arises, it shall be done only under the direction of a crane mechanic.

(l) Cranes and crane operations—Scope and application. The sections of this chapter, WAC 296-56-60083 through 296-56-60099, apply to cranes, derricks, and crane operations.

(m) Signal persons. A signal person shall be required when a crane operator's visibility is obstructed. When a signal person is required to transmit hand signals, they shall be in such a position that the operator can plainly see the signals.

(n) Signals. All operators and signal persons shall use standard signals as illustrated for longshore crane operations. (See Appendices C and D, at the end of this chapter.)

(o) Signal person for power units. Where power units, such as cranes and winches are utilized and signaling is required, the operator shall be instructed as to who is authorized to give signals. The operator shall take signals only from such authorized person. In case of emergency, any worker shall be authorized to give a stop signal.

(i) No draft shall be hoisted unless the winch or crane operator can clearly see the draft itself or see the signals of any signal person associated with the operation.

(ii) Loads requiring continuous manual guidance while in motion shall be provided with tag lines.

(p) Landing loads. Persons assisting in landing a load shall face the load and use caution to prevent themselves from getting in a position where they may be caught between the load and a fixed object.

(8) Stabilizing of locomotive cranes. Loads may be hoisted by locomotive cranes only if outriggers are in place, unless means are taken to prevent the load being carried by the truck springs of the crane.

(9) Operations.

(a) Use of cranes together. When two or more cranes hoist a load in unison, a designated person shall direct the operation and instruct personnel in positioning, rigging of the load and movements to be made.

(b) Guarding of swing radius. Accessible areas within the swing radius of the body of a revolving crane shall be physically guarded during operations to prevent an employee from being caught between the body of the crane and any fixed structure or between parts of the crane.

(c) Securing mobile crane components in transit. The crane's superstructure and boom shall be secured against rotation and carried in line with the direction of travel except when negotiating turns with an operator in the cab or when the boom is supported on a dolly. The empty hook or other attachment shall be secured.

(d) Unattended cranes. The following steps shall be taken before leaving a crane unattended between work periods:

(i) Suspended loads, such as those hoisted by lifting magnets or clamshell buckets, shall be landed unless the storage position or maximum hoisting of the suspended device will provide equivalent safety;

(ii) Clutches shall be disengaged;

(iii) The power supply shall be shut off;

(iv) The crane shall be secured against accidental travel; and

(v) The boom shall be lowered or secured against movement.

(e) Operating near electric power lines.

(i) Clearance. Unless electrical distribution and transmission lines are deenergized and visibly grounded at point of work, or unless insulating barriers not a part of or an attachment to the crane have been erected to prevent physical contact with lines, cranes may be operated near power lines only in accordance with following:

(A) For lines rated 50 kV or below, minimum clearance between the lines and any part of the crane or load shall be ten feet (3.05 m);

(B) For lines rated over 50 kV, minimum clearance between the lines and any part of the crane or load shall be either 10 feet (3.05 m) plus 0.4 inch (10.16 mm) for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than ten feet; and

(C) In transit with no load and boom lowered, the clearance shall be a minimum of four feet (1.22 m).

(ii) Boom guards. Cage-type boom guards, insulating links or proximity warning devices may be used on cranes, but they shall not be used in place of the clearances required by subsection (9)(e)(i) of this section.

(iii) Determination of energized lines. Any overhead line shall be presumed to be energized until the owner of the line indicates that it is not energized.

(10) Protection for employees being hoisted.

(a) No employee shall be hoisted by the load hoisting apparatus of a crane or derrick except:

(i) On intermodal container spreaders, equipped in accordance with this subsection; or

(ii) In a boatswain's chair or other device rigged to prevent it from accidental disengagement from the hook or supporting member; or

(iii) On a platform meeting the following requirements:

(A) Enclosed by a railing or other means providing protection equivalent to that described in WAC 296-56-60123 (3). If equipped with open railings, the platform shall be fitted with toe boards;

(B) Having a safety factor of four based on ultimate strength;

(C) Bearing a plate or permanent marking indicating maximum load rating, which shall not be exceeded, and the weight of the platform itself;

(D) Equipped with a device to prevent access doors, when used, from opening accidentally;

(E) Equipped with overhead protection for employees on the platform if they are exposed to falling objects or overhead hazards;

(F) Secured to the load line by means other than wedge and socket attachments, unless the free (bitter) end of the line is secured back to itself by a clamp placed as close above the wedge as possible.

(b) Except in an emergency, the hoisting mechanism of all overhead and container gantry cranes used to hoist personnel shall operate in power up and power down, with automatic brake application when not hoisting or lowering.

(c) Variable radius booms of a crane or derrick used to hoist personnel shall be so constructed or secured as to prevent accidental boom movement.

(d) Platforms or devices used to hoist employees shall be inspected for defects before each day's use and shall be removed from service if defective.

(e) Employees being hoisted shall remain in continuous sight of and communication with the operator or signal person.

(f) Operators shall remain at the controls when employees are hoisted.

(g) Cranes shall not travel while employees are hoisted, except in emergency or in normal tier to tier transfer of employees during container operations.

(h) When intermodal container spreaders are used to transfer employees to or from the tops of containers, the spreaders shall be equipped with a personnel platform equipped with fixed railings, provided that the railings have one or more openings for access. The openings shall be fitted with a means of closure, such as chains with hooks. Existing railings shall be at least thirty-six inches (0.91 m) in height. New railings installed after October 3, 1983 shall be forty-two inches (1.07 m), plus or minus three inches (7.62 cm), in height. The provisions of (a)(iii)(C), (D), and (F) of this subsection also apply to personnel platforms when container spreaders are used.

(i) Positive safety latch-type hooks or moused hooks shall be used.

(j) Employees shall not be hoisted on intermodal container spreaders while a load is engaged.

Additional requirements are located in WAC 296-24-23533.

(11) Routine inspection.

(a) Designated persons shall visually inspect each crane and derrick on each day of use for defects in functional operating components and shall report any defect found to the employer. The employer shall inform the operator of the findings.

(b) A designated person shall thoroughly inspect all functional components and accessible structural features of each crane or device at monthly intervals.

(c) Any defects found during such inspections which may create a safety hazard shall be corrected before further use. Repairs shall be performed only by designated persons.

(d) A record of monthly inspections shall be maintained for six months in or on the crane or derrick or at the terminal.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-56-60083, filed 8/8/01, effective 9/1/01; 00-21-103, § 296-56-60083, filed 10/18/00, effective 2/1/01. Statutory Authority: RCW 49.17.040. 99-02-024, § 296-56-60083, filed 12/30/98, effective 3/30/99. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-56-60083, filed 1/18/95, 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), § 296-56-60083, filed 10/30/92, effective 12/8/92. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60083, filed 1/17/86; 85-10-004 (Order 85-09), § 296-56-60083, filed 4/19/85; 85-01-022 (Order 84-24), § 296-56-60083, filed 12/11/84.]

WAC 296-56-60171 General requirements. (1) Adequate lighting shall be provided at each landing and in the shaftway.

(2) A sign bearing the following information shall be conspicuously posted within the car:

(a) Maximum capacity one person;

(b) Total load limit in pounds;

(c) For authorized personnel use only.

(3) A fire extinguisher in proper working condition shall be available in the car.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-56-60171, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60171, filed 1/17/86; 85-01-022 (Order 84-24), § 296-56-60171, filed 12/11/84.]

WAC 296-56-60207 General requirements. (1) No person other than an employee or duly authorized person shall ride or be permitted to ride in the car.

(2) Escape ladders shall be installed extending the full length of the hoistway and shall be located in a position so that, in an emergency, a person can safely transfer from the car platform to the ladder. An "IMPAIRED CLEARANCE" sign shall be posted at the bottom of a ladder when the face of the ladder is less than thirty inches from any structure.

(3) An automatic safety dog or device which will prevent the car from leaving the landing until manually released by the operator shall be installed at the bottom landing.

(4) A fire extinguisher in proper working condition shall be available in the car.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-56-60207, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-56-60207, filed 1/17/86; 85-01-022 (Order 84-24), § 296-56-60207, filed 12/11/84.]

Chapter 296-59 WAC

SAFETY STANDARDS FOR SKI AREA FACILITIES AND OPERATIONS

WAC

296-59-001
296-59-005
296-59-010
296-59-020
296-59-025
296-59-030
296-59-035
296-59-050
296-59-065
296-59-070
296-59-085
296-59-105

Foreword.
Incorporation of other standards.
Safe place standards.
Management's responsibility.
Employee's responsibility.
Safety bulletin board.
First-aid.
Personal protective equipment, general requirements.
Fire protection and ignition sources.
Illumination.
Scaffolds, construction, use, and maintenance.
Handcharge makeup methods.

WAC 296-59-001 Foreword. (1) This vertical standard is promulgated in accordance with applicable provisions of the Washington State Administrative Procedure Act, chapter 34.04 RCW, and the Washington Industrial Safety and Health Act, chapter 49.17 RCW.

(2) The requirements of this chapter shall be applied through the department of labor and industries, division of industrial safety and health, in accordance with administrative procedures provided for in chapter 49.17 RCW, and chapters 296-27, 296-350, 296-360, and 296-800 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-001, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-001, filed 7/6/88.]

WAC 296-59-005 Incorporation of other standards.

(1) Lifts and tows shall be designed, installed, operated, and maintained in accordance with American National Standard Institute (ANSI) B77.1-1982, Standards for Passenger Tramways—Aerial Tramways and Lifts, Surface Lifts, and Tows—Safety Requirements.

(2) Future revised editions of ANSI B77.1-1982 may be used for new installations or major modifications of existing installations, as recommended or approved by the equipment manufacturer or a qualified design engineer, except that, where specific provisions exist, variances shall be requested from the department.

(3) Commercial explosives shall be transported, stored, and used in compliance with chapter 296-52 WAC, Safety standards for the possession and handling of explosives, and chapter 70.74 RCW, Washington State Explosives Act, except that avalanche control blasting shall comply with the special provisions of this chapter.

(4) The use of military type weapons for avalanche control shall comply with all requirements of the United States government and/or the military branch having jurisdiction. Compliance shall include qualification of employees, security requirements, and storage and handling of ammunition.

(5) The employer shall develop and maintain a chemical hazard communication program as required by WAC 296-800-170, 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.

(6) When employees perform activities such as construction work or logging, the WAC chapter governing the specific activity shall apply, e.g., chapter 296-155 or 296-54 WAC, et seq.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-005, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-59-005, filed 8/3/94, effective 9/12/94; 89-11-035 (Order 89-03), § 296-59-005, filed 5/15/89, effective 6/30/89; 88-14-108 (Order 88-11), § 296-59-005, filed 7/6/88.]

WAC 296-59-010 Safe place standards. The safe place requirements of the safety and health core rules, WAC 296-800-110, shall be applicable within the scope of chapter 296-59 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-010, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-010, filed 7/6/88.]

WAC 296-59-020 Management's responsibility. The "safe work environment" section of the safety and health core rules, WAC 296-800-110, shall be applicable within the scope of chapter 296-59 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-020, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-020, filed 7/6/88.]

WAC 296-59-025 Employee's responsibility. The "employee responsibilities" section of the safety and health core rules, WAC 296-800-120, shall be applicable within the scope of chapter 296-59 WAC.

[2002 WAC Supp—page 1124]

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-025, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-025, filed 7/6/88.]

WAC 296-59-030 Safety bulletin board. The "safety bulletin board" requirements of the safety and health core rules, WAC 296-800-190, shall be applicable within the scope of chapter 296-59 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-030, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-030, filed 7/6/88.]

WAC 296-59-035 First-aid. The first-aid provisions of the safety and health core rules, WAC 296-800-150 apply within the scope of chapter 296-59 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-035, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-59-035, filed 12/7/99, effective 2/1/00. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-035, filed 7/6/88.]

WAC 296-59-050 Personal protective equipment, 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 indicated 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, construction, testing, and use of personal protective equipment shall comply with the requirements of the safety and health core rules, WAC 296-800-160; the Occupational health standards—Safety standards for carcinogens, chapter 296-62 WAC; or the currently applicable ANSI standard.

(2) Eye and face protection. Eye and face protective equipment shall be provided and worn where there is exposure in the work process or environment to hazard of injury, which can be prevented by such equipment.

(3) Occupational head protection. Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets, i.e., a lift operator would not be required to use a hardhat while operating the lift. However, if that same person is assisting with maintenance operations and is working under a tower where overhead work is being done, that operator would now be required to wear an approved helmet.

(a) Helmets for the protection of employees against impact and/or penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1-1986, Safety Requirements for Industrial Head Protection.

(b) Helmets for the head protection of employees exposed to high voltage electrical shock and burns shall meet the specifications contained in American National Standards Institute, Z89.2-1971, Safety Requirements for Industrial Protective Helmets for Electrical Workers, Class B.

(c) Approved head protection shall be worn by operators of snowmobiles and other mobile oversnow equipment which is not equipped with a rigid metal operator's cab.

(4) Occupational foot protection.

(a) Substantial footwear appropriate for the work conditions encountered shall be worn by all employees.

(b) Where the job assignment includes exposure to slipping hazards, soles and heels of footwear shall be of such material and design as to reduce the hazard of slipping.

(5) Safety belts, lifelines, lanyards, and nets.

(a) Safety belts, lifelines, and lanyards which meet the requirements of ANSI A10.14 shall be provided and used whenever employees are working in locations which expose them to a fall of more than ten feet. The particular work location and application shall dictate which type of belt or harness and length of lanyard is used.

(b) Lifelines shall be secured to an anchorage or structural member capable of supporting a minimum dead weight of five thousand four hundred pounds.

(c) Lifelines used on rock scaling applications or in areas where the lifeline may be subjected to cutting or abrasion shall be a minimum of seven-eighths inch wire core manila rope or equivalent. For all other lifeline applications, three-fourths inch manila rope or equivalent with a minimum break strength of five thousand four hundred pounds may be used.

(d) Each safety belt lanyard shall be a minimum of one-half inch nylon, or equivalent, with a minimum of five thousand four hundred pounds breaking strength.

(e) Employees will not be required to wear a safety belt and lanyard while riding on a standard lift chair while seated in the normal riding position.

(f) Safety nets meeting the requirements of ANSI A10.11 shall be used when other acceptable forms of fall protection are not useable. When used, safety nets shall extend a minimum of eight feet beyond the edge offering exposure, shall be hung with sufficient clearance to prevent user's contact with surfaces or objects below, and shall not be more than twenty-five feet below the fall exposure edge.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-050, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-050, filed 7/6/88.]

WAC 296-59-065 Fire protection and ignition sources. The requirements of WAC 296-24-585 and 296-800-300, et seq., relating to fire protection requirements, shall be applicable within the scope of chapter 296-59 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-065, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-065, filed 7/6/88.]

WAC 296-59-070 Illumination. (1) Sufficient illumination required. All areas shall be sufficiently illuminated in order that persons in the area can safely perform their assigned duties. The recommended levels of illumination specified in the safety and health core rules, WAC 296-800-210, shall be followed. When areas are not specifically referred to in chapter 296-800 WAC and the adequacy of illumination for the area or task performed is questionable, a determination of the amount of illumination needed may be made by the division of industrial safety and health.

(2) Emergency or secondary lighting system required.

(a) There shall be an emergency or secondary lighting system which can be actuated immediately upon failure of the normal power supply system. The emergency or secondary lighting system shall provide illumination in the following areas:

(i) Wherever it is necessary for workers to remain at their machine or station to shut down equipment in case of power failure;

(ii) At stairways and passageways or aiseways used by workers as an emergency exit in case of power failure;

(iii) In all plant first-aid and/or medical facilities;

(iv) In emergency power and control room, i.e., in emergency generator rooms unless arranged to start automatically in the event of power failure, or on ski lift motor drive rooms where it would be necessary for employees to switch on the emergency drive system during night skiing.

(b) Emergency lighting facilities shall be checked at least every thirty days for mechanical defects. Defective equipment shall be given priority for repair schedule.

(3) Extension cord type lights. All extension cord type lights shall be provided with proper guards.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-070, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-070, filed 7/6/88.]

WAC 296-59-085 Scaffolds, construction, use, and maintenance. (1) Whenever work must be performed at a height which cannot be reached from the floor or permanent platform and where it would not be a safe practice to use a ladder, a properly constructed scaffold shall be provided and used.

(2) Scaffolds shall be constructed and used in compliance with WAC 296-24-860 through 296-24-862.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-59-085, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-085, filed 7/6/88.]

WAC 296-59-105 Handcharge makeup methods. General. The department shall recognize two permissible methods concerning handcharges for avalanche control blasting. The descriptions and requirements for each method are contained in this section. Every ski area operation which conducts avalanche control blasting should use Method II "Hand charge makeup room." A well designed and constructed handcharge makeup room can enhance the correct assembly of components which will maintain the best possible control over explosives and components, reduce the probability of an

explosives incident, and reduce the incidence of misfires from incorrect makeup or moisture.

(1) Method I. Makeup at the blast site.

(a) The ignition system shall consist of a nonelectrical blasting cap and highest quality water resistant safety fuse, or detonating cord, assembled as recommended by the manufacturer.

(b) Detonating cord (i.e., primacord) shall be used to connect separated multiple-charge blasts.

(c) No other ignition system shall be permissible on hand-placed or hand-thrown avalanche control charges unless variance is granted by the department.

(d) Caps shall be installed on correct length fuses prior to being transported out onto control routes.

(e) Caps shall only be crimped with a crimper tool approved for that purpose.

(f) Assembling caps and fuses shall be done in a warm, dry, well-lighted environment. The location used for assembly shall not have flammable fuels, flammable gases, or explosives present where accidental detonation of the caps could create a secondary ignition or detonation hazard.

(g) Each cap shall be protected by a styrofoam shield or the equivalent before being placed in an avalanche control pack for transportation.

(h) A fuse igniter shall never be attached to a fuse until the fuse and cap assembly is installed in the handcharge at the blast site and the control crew is fully prepared to ignite the charge.

(i) All class A explosives shall be attended as defined in WAC 296-59-007 at all times when the explosive is out of the class 1 storage magazine.

(j) Disbursement of explosive charges from the class 1 storage magazine into avalanche control packs shall be done outside the storage magazine. Records shall be maintained for all explosives disbursed.

(k) Caps, cap and fuse assemblies, armed handcharges, or fuse igniters shall not be carried into or stored in a class 1 magazine which contains class A explosives.

(2) Method II. Handcharge makeup room. This method is different from method I primarily in that the fuse and cap assembly is installed in the explosive charge while inside a special makeup room. The assembly procedure shall be as follows:

(a) Install caps on correct length fuses with an approved crimper tool before explosives are brought into the makeup room.

(b) The cap and fuse assemblies shall not be combined with explosives to form handcharges until just before the intended time of distribution.

(c) Only nonsparking skewers shall be used to punch holes in an explosives cartridge.

(d) The fuse shall be laced or taped in position after inserting the cap in the charge.

(e) Each handcharge shall be placed in an explosives box or avalanche control pack immediately after assembly is completed.

(f) No spark-producing metal tools shall be used to open explosives containers.

(g) Fuse igniters shall never be attached to a fuse or a handcharge until the handcharge is at the blast site and the control crew is fully prepared to ignite the charge.

(3) Makeup room requirements, procedures.

(a) Construction requirements.

(i) Makeup rooms located in accordance with the American Standard Quantity and Distance Tables for storage shall not require construction of reinforced concrete walls, floors, and doors. All other requirements of this chapter shall be applicable for such facilities.

(ii) Floors and walls. The floor and walls shall be constructed of reinforced concrete not less than eight inches thick. The rebar shall be not less than one-half inch diameter and shall be spaced on twelve-inch vertical and horizontal centers. The rebar shall be bent at a ninety degree angle and extend a minimum of twenty-four inches into the adjoining floor or wall to secure each floor and wall joint.

(iii) Roof. The roof is not limited to specific materials but shall provide both weather protection and standard snow loading protection for the region.

(iv) Access door(s).

(A) If a hinged door mounting is utilized, the hinge shall be mounted on the inside so that the door opens into the makeup room. In the fully closed position, in position to be locked, the door shall be a minimum of two inches larger than the access opening on all sides.

(B) If a flush door mounting is utilized, the door shall be mounted with a two-inch decreasing taper on all sides of both the door and the concrete access opening to form a wedge seal.

(C) If a sliding door mounting is utilized, the mounting apparatus shall be on the inside of the makeup room and the door shall be a minimum of two inches larger than the access opening when the door is fully closed.

(D) Makeup room door may be either:

(I) Constructed to the same structural integrity and mounting requirements of (a)(iii)(A) through (C) of this subsection; or

(II) Constructed of plywood not less than two inches thick and overlaid on the outside with a steel plate not less than one-eighth inch thick.

(III) If a door which complies with (iii)(D)(II) of this subsection is used, a berm or barricade shall be installed within six feet of the door. The berm or barricade shall extend at least as high as the top of the door and shall be a minimum of two feet wider than the door on both sides of the door.

(E) For security purposes, one steel padlock having at least five tumblers and a case hardened shackle of at least three-eighths inch diameter is sufficient for locking purposes. Hinges and hasps shall be attached so that they cannot be removed from the outside when in the closed position and with the lock in place.

(v) Interior finish. The inside of all makeup rooms shall be finished and equipped to the following minimum requirements:

(A) Construction shall be fire resistant and nonsparking up to the top of the walls. Nails or screws shall be countersunk, blind nailed, or covered.

(B) Lighting shall be by N.E.C. explosion-proof rated fixtures and all wiring shall be in sealed conduit.

(C) Control switches shall be outside the makeup room.

(D) No electrical outlet boxes are permissible inside the room.

(b) Restrictions.

(i) Smoking, matches, open flames, or flame or spark-producing devices shall not be permitted inside the makeup room.

(ii) Flammable liquids or flammable compressed gases shall not be stored in the makeup room.

(iii) Signs limiting entry to authorized personnel shall be posted on the door(s).

(iv) A sign stating the occupancy rules shall be posted inside the makeup room where it is clearly legible upon entering the room. The sign shall post the following rules:

(A) Occupancy shall be restricted to specifically authorized personnel;

(B) Smoking, matches, flame or spark-producing devices, tools or equipment shall not be permitted in the room at any time when explosives or explosive components are present; and

(C) Flammable fuels or compressed gases shall not be permitted inside the room nor stored within fifty feet of the room.

(v) Heating units shall be limited to:

(A) Forced air systems with the heating unit located outside the room.

(B) Steam systems of 15 psig or less.

(C) Hot water systems of 130°F or less.

(D) The radiant heating coils and piping for steam or hot water systems shall be protected so that explosives cannot come into contact with them.

(E) Heating ducts shall be installed so that the hot air does not discharge directly on explosives.

(F) The heating system used in a makeup room shall have controls which prevent the ambient room temperature from exceeding 130°F.

(vi) The makeup room shall be equipped with a portable fire extinguisher of at least 2A-20BC rating.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(vii) Ventilation.

(A) The makeup room shall be equipped with a ventilation system capable of maintaining a minimum rate of three air exchanges per hour during all times when explosives are present in the room.

(B) Fans and controls shall be located outside the makeup room and shall be of a type approved for this service.

(C) The lighting circuit control shall also activate the ventilation fan and the ventilation fan shall be operated whenever personnel are in the room.

(D) Exhaust ventilation shall be arranged to discharge into outside air, not into an enclosed structure.

(viii) The floor or exterior walls may be constructed with duct openings for heating and ventilation purposes provided that:

(A) Each duct opening is not greater in volume than seventy-two square inches;

(B) The combined number of duct openings shall not exceed three;

(C) Duct openings shall be located within twelve inches of the floor or ceiling;

(D) The exhaust duct opening shall not be located on the wall above the makeup workbench.

(c) Practices and procedures.

(i) When explosives are present in the makeup room, entry into the makeup room shall be restricted to trained and authorized personnel.

(ii) The access door(s) to the makeup room shall be kept locked or bolted from the inside while employees are assembling explosives.

(iii) The entire makeup room shall be kept clean, orderly, and free of burnable rubbish.

(iv) Brooms and other cleaning utensils shall not have any spark-producing metal parts if used when explosives are present.

(v) Sweepings and empty explosives containers shall be disposed of as recommended by the explosives supplier.

(vi) Repair activities which utilize spark-producing tools shall not be conducted on any part of the makeup room while explosives are present.

(d) Storage of explosives.

(i) A makeup room shall not be used for the unattended storage of class A explosives.

(ii) A makeup room which meets all requirements of this chapter may contain a class 3 storage facility, for one thousand or less blasting caps.

(iii) A class 3 storage facility shall be constructed to meet the following minimum requirements:

(A) A class 3 storage facility shall be fire resistant and theft resistant. It does not need to be bullet resistant and weather resistant if the locked makeup room provides protection from weather and bullet penetration.

(B) Sides, bottoms, and covers shall be constructed of not less than number twelve gauge metal and lined with a nonsparking material.

(C) Hinges and hasps shall be attached so that they cannot be removed from the outside.

(D) One steel padlock having at least five tumblers and a case-hardened shackle of at least three-eighths inch diameter is sufficient for locking purposes. The lock and hasp is not required to be equipped with a steel hood.

(e) Location.

(i) The makeup room shall be located in accordance with the American Quantity and Distance Separation Tables as adopted in chapter 70.74 RCW "Washington State Explosives Act" and chapter 296-52 WAC "Safety standards for the possession and handling of explosives," except under conditions as indicated in this section.

(ii) Where locating the makeup room in accordance with the quantity and distance separation table is impractical because of bad weather accessibility, rough terrain, or space availability:

(A) Upon application the department will issue a variance enabling location of the makeup room, by mutual agreement, at the safest possible location within the limitation of the individual base area.

(B) The safest possible location will be the location most isolated from assembly areas and buildings that are inhabited with application of additional protection measures such as:

(I) Berming.

(II) Locating natural obstructions or buildings that are not inhabited between the makeup room and assembly areas and buildings that are inhabited.

(III) Limitations on the total quantity of explosives in the makeup room at any one time.

(iii) Makeup rooms designed to hold the boxes of explosives awaiting makeup and the madeup explosives in avalanche control packs awaiting distribution may be located using the total quantity of explosives allowed at the makeup table at any one time as the referenced quantity of explosives provided.

(A) The makeup room is located in accordance with the American Quantity and Distance Separation Tables as adopted in chapter 70.74 RCW "Washington State Explosives Act" and chapter 296-52 WAC "Safety standards for the possession and handling of explosives" for the referenced quantity of explosives at the makeup table.

(I) This separation shall apply only to human proximity to the makeup room and only at such time as there are explosives in the makeup room.

(II) When the makeup room does not contain explosives the separation tables shall not apply.

(B) The concrete walls of the room are designed to withstand the explosion of the total amount of the referenced explosives.

(I) The concrete walls must be constructed in accordance with specifications designed and certified by a licensed engineer; or

(II) The concrete walls must be constructed to the specifications of Department of the Army TM5-1300 "Structures to Resist the Effects of Accidental Explosions" designed to produce walls which will withstand explosion of the referenced quantity explosives.

(C) The boxes of explosives awaiting makeup and the madeup explosives in avalanche control packs awaiting distribution are located behind separate concrete debris barrier walls which will ensure that detonation of these explosives will not occur if the explosives at the makeup table detonate.

(I) The concrete debris barrier wall must be constructed in accordance with specifications designed and certified by a licensed engineer; or

(II) The concrete debris barrier wall must be constructed to the specifications of Department of the Army TM5-1300 "Structures to Resist the Effects of Accidental Explosions" to produce a barrier which will not allow detonation of the explosives awaiting makeup and distribution should the referenced quantity of explosives detonate.

(III) Access from the makeup table to the area behind the concrete debris barrier walls shall not be doored. The concrete debris barrier walls will be designed so that the access way from the makeup table to the area behind the concrete debris barrier wall will deflect debris from an explosive blast by inherent design.

(D) The roof shall be designed so that the resistance to an interior explosive blast will be negligible.

(iv) A full containment makeup room may be located anywhere and must meet the following requirements:

(A) The makeup room must be constructed in accordance with a licensed explosive engineer's approved design.

(B) The total amount of explosives in the room at any time must not exceed the design limit of the room.

(C) The makeup room cannot be used for storage.

(v) This section shall become effective December 1, 1989.

Note: Explosives shall be stored in licensed magazines only. All magazines must be located in compliance with the American Quantity and Distance Separation Tables until the United States Treasury Department Bureau of Alcohol, Tobacco and Firearms approves full containment class 1 magazines for storage at distances less than those specified in the American Standard Quantity and Distance Separation Tables and the Washington state department of labor and industries adopts corresponding amendments.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-59-105, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-59-105, filed 7/6/88.]

Chapter 296-62 WAC

GENERAL OCCUPATIONAL HEALTH STANDARDS

WAC

296-62-010	Purpose and scope.
296-62-050	Application for waiver or variances.
296-62-05140	How must employees be kept involved and informed?
296-62-05207	Preservation of records.
296-62-05209	Access to records.
296-62-05211	Repealed.
296-62-05301	Definitions.
296-62-05305	Meet certain conditions if you withhold trade secret information.
296-62-05310	Reveal trade secret information when it is needed in order to treat a medical or first-aid emergency.
296-62-05315	Reveal trade secret information in nonemergency situations when requested by a health professional, employee, or designated representative.
296-62-05320	Deny a written request for disclosure of a specific chemical identity in the manner specified in this rule.
296-62-05325	Understand what is a trade secret.
296-62-054	Manufacturers, importers and distributors—Hazard communication.
296-62-05402	Determine whether the chemicals you produce in your workplace or import are hazardous.
296-62-05403	Repealed.
296-62-05404	Use these criteria in making hazard determinations.
296-62-05405	Repealed.
296-62-05406	Determine whether the chemicals you produce or import are health hazards.
296-62-05407	Repealed.
296-62-05408	Obtain or develop a material safety data sheet for each hazardous chemical you produce or import.
296-62-05409	Repealed.
296-62-05410	Label clearly each container of hazardous chemicals that leaves your workplace.
296-62-05411	Repealed.
296-62-05412	Provide material safety data sheets.
296-62-05413	Repealed.
296-62-05415	Repealed.
296-62-05417	Repealed.
296-62-05419	Repealed.
296-62-05421	Repealed.
296-62-05423	Repealed.
296-62-05425	Repealed.
296-62-05427	Repealed.
296-62-05429	Repealed.
296-62-07101	To whom does chapter 296-62 WAC, Part E apply?
296-62-07306	Requirements for areas containing carcinogens listed in WAC 296-62-07302.
296-62-07308	General regulated area requirements.
296-62-07336	Acrylonitrile.
296-62-07338	Appendix B—Substance technical guidelines for acrylonitrile.
296-62-07342	1,2-Dibromo-3-chloropropane.
296-62-07347	Inorganic arsenic.
296-62-07367	Respiratory protection and personal protective equipment.
296-62-07373	Communication of EtO hazards to employees.
296-62-07385	Appendix B—Substance technical guidelines for ethylene oxide (nonmandatory).
296-62-07417	Protective work clothing and equipment.
296-62-07419	Hygiene areas and practices.
296-62-07425	Communication of cadmium hazards to employees.
296-62-07460	Butadiene.
296-62-07470	Methylene chloride.
296-62-07473	Appendix A.
296-62-07519	Thiram.
296-62-07521	Lead.
296-62-07523	Benzene.
296-62-07540	Formaldehyde.
296-62-07601	Scope and application.
296-62-07617	Protective work clothing and equipment.
296-62-07619	Hygiene facilities and practices.
296-62-07621	Communication of hazards to employees.
296-62-07631	Recordkeeping.
296-62-07717	Protective work clothing and equipment.
296-62-07719	Hygiene facilities and practices.
296-62-07721	Communication of hazards to employees.
296-62-08001	Bloodborne pathogens.
296-62-09001	Definitions.
296-62-09003	Repealed.
296-62-11021	Open surface tanks.

296-62-12000	Repealed.
296-62-12003	Repealed.
296-62-12005	Repealed.
296-62-12009	Repealed.
296-62-14533	Cotton dust.
296-62-20013	Protective clothing and equipment.
296-62-20015	Hygiene facilities and practices.
296-62-30001	Scope and application.
296-62-30230	Risk identification.
296-62-30235	Employee notification.
296-62-30425	Training course content for 40 and 80 hour hazardous waste cleanup courses.
296-62-30435	16-hour supplemental training for hazardous waste sites.
296-62-30605	Personal protective equipment selection.
296-62-3090	General requirements for handling drums and containers.
296-62-31335	Showers and change rooms.
296-62-31410	Hazard communication program requirements under RCRA.
296-62-3195	Appendix E—Training curriculum guidelines.
296-62-40003	Definitions applicable to all sections of this chapter.
296-62-40015	Hazard identification.
296-62-40025	Appendix A—National Research Council recommendations concerning chemical hygiene in laboratories (nonmandatory).
296-62-41031	Personal protective equipment selection.
296-62-41086	Appendix E—Training curriculum guidelines.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-62-05211	Trade secrets. [Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-62-05211, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05211, filed 8/27/81.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-62-05403	Scope and application. [Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-62-05403, filed 10/20/95, effective 1/16/96. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05403, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05403, filed 7/6/88; 87-24-051 (Order 87-24), § 296-62-05403, filed 11/30/87. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05403, filed 5/22/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-62-05403, filed 4/19/85; 84-22-012 (Order 84-22), § 296-62-05403, filed 10/30/84; 84-13-001 (Order 84-14), § 296-62-05403, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-62-05405	Definitions applicable to this part. [Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-62-05405, filed 10/20/95, effective 1/16/96. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05405, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05405, filed 7/6/88; 87-24-051 (Order 87-24), § 296-62-05405, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-62-05405, filed 4/27/87. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05405, filed 5/22/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-62-05405, filed 4/19/85; 84-22-012 (Order 84-22), § 296-62-05405, filed 10/30/84; 84-13-001 (Order 84-14), § 296-62-05405, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-62-05407	Hazard determination. [Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-62-05407, filed 10/20/95, effective 1/16/96. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05407, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05407, filed 7/6/88. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05407, filed 5/22/86. Statutory Authority:

- RCW 49.17.040 and 49.17.050. 84-13-001 (Order 84-14), § 296-62-05407, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05409 Written hazard communication program. [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05409, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05409, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-13-001 (Order 84-14), § 296-62-05409, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05411 Labels and other forms of warning. [Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-62-05411, filed 1/18/95, effective 3/10/95; 94-16-145, § 296-62-05411, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05411, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-62-05411, filed 4/19/85; 84-13-001 (Order 84-14), § 296-62-05411, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05413 Material safety data sheets. [Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-11-055, § 296-62-05413, filed 5/20/97, effective 8/1/97. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-62-05413, filed 10/20/95, effective 1/16/96. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05413, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05413, filed 7/6/88. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05413, filed 5/22/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-62-05413, filed 4/19/85; 84-22-012 (Order 84-22), § 296-62-05413, filed 10/30/84; 84-13-001 (Order 84-14), § 296-62-05413, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05415 Employee information and training. [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05415, filed 8/3/94, effective 9/12/94. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05415, filed 5/22/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-13-001 (Order 84-14), § 296-62-05415, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05417 Trade secrets. [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05417, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05417, filed 7/6/88. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05417, filed 5/22/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-22-012 (Order 84-22), § 296-62-05417, filed 10/30/84; 84-13-001 (Order 84-14), § 296-62-05417, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05419 Effective dates. [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05419, filed 8/3/94, effective 9/12/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-13-001 (Order 84-14), § 296-62-05419, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05421 Appendix A—Health hazard definitions (mandatory). [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05421, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05421, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-62-05421, filed 4/19/85; 84-22-012 (Order 84-22), § 296-62-05421, filed 10/30/84; 84-13-001 (Order 84-14), § 296-62-05421, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05423 Appendix B—Hazard determination (mandatory). [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05423, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05423, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-13-001 (Order 84-14), § 296-62-05423, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05425 Appendix C—Information sources (advisory). [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05425, filed 8/3/94, effective 9/12/94; 88-14-108 (Order 88-11), § 296-62-05425, filed 7/6/88. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05425, filed 5/22/86. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-62-05425, filed 4/19/85; 84-13-001 (Order 84-14), § 296-62-05425, filed 6/7/84.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05427 Appendix D. [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05427, filed 8/3/94, effective 9/12/94. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-62-05427, filed 4/27/87. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240. 86-12-004 (Order 86-22), § 296-62-05427, filed 5/22/86.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-05429 Appendix E—Guidelines for employer compliance (advisory). [Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-62-05429, filed 8/3/94, effective 9/12/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-09003 Lighting and illumination. [Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-62-09003, filed 11/30/83; 82-13-045 (Order 82-22), § 296-62-09003, filed 6/11/82; Order 76-6, § 296-62-09003, filed 3/1/76; Order 73-3, § 296-62-09003, filed 5/7/73.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-12000 Environmental tobacco smoke in office work environments—Scope and application. [Statutory Authority: Chapter 49.17 RCW. 94-07-086 (Order 93-18), § 296-62-12000, filed 3/16/94, effective 9/1/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-12003 Definitions. [Statutory Authority: Chapter 49.17 RCW. 94-07-086 (Order 93-18), § 296-62-12003, filed 3/16/94, effective 9/1/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-12005 Controls for environmental tobacco smoke. [Statutory Authority: Chapter 49.17 RCW. 94-07-086 (Order 93-18), § 296-62-12005, filed 3/16/94, effective 9/1/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-62-12009 Appendix—Smoking cessation program information—Nonmandatory. [Statutory Authority: Chapter 49.17 RCW. 94-07-086 (Order 93-18), § 296-62-12009, filed 3/16/94, effective 9/1/94.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

WAC 296-62-010 Purpose and scope. The rules in this chapter are designed to protect the health of employees and help to create a healthy work place by establishing requirements to control health hazards. Requirements for chemical hazard communication programs, workplace lighting levels and exposure records are in chapter 296-800 WAC, the safety and health core rules.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-010, filed 5/9/01, effective 9/1/01; Order 73-3, § 296-62-010, filed 5/7/73; Order 70-8, § 296-62-010, filed 7/31/70, effective 9/1/70; Section I, effective 8/1/63.]

WAC 296-62-050 Application for waiver or variances. See WAC 296-350-700 **Variance from WISHA rules.**

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-050, filed 5/9/01, effective 9/1/01; Order 73-3, § 296-62-050, filed 5/7/73; Order 70-8, § 296-62-050, filed 7/31/70, effective 9/1/70; Rule 5.010, effective 8/1/63.]

WAC 296-62-05140 How must employees be kept involved and informed? (1) The employer must provide for and encourage employee participation in analyzing "caution zone jobs" and selecting measures to reduce WMSD hazards. Employers with eleven or more employees who are required to have safety committees (WAC 296-800-130), must involve this committee in choosing the methods to be used for employee participation.

(2) Employers with eleven or more employees must share the following information with the safety committee (if a committee is required by WAC 296-800-130). Employers who are not required to have a safety committee (WAC 296-800-130) must provide this information at safety meetings:

- The requirements of this rule;
- Identified "caution zone jobs";
- Results of the hazard analysis and/or identification of jobs with WMSD hazards; and
- Measures to reduce WMSD hazards.

(3) The employer must review its ergonomics activities at least annually for effectiveness and for any needed improvements. This review must include members of the safety committee where one exists or ensure an equally effective means of employee involvement.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-62-05140, filed 11/20/01, effective 7/1/02; 00-12-024, § 296-62-05140, filed 5/26/00, effective 7/1/02.]

WAC 296-62-05207 Preservation of records. (1) Unless a specific occupational safety and health standard provides a different period of time, each employer shall assure the preservation and retention of records as follows:

(a) Employee medical records. The medical record for each employee shall be preserved and maintained for at least the duration of employment plus thirty years, except that the following types of records need not be retained for any specific period:

- (i) Health insurance claims records maintained separately from the employer's medical program and its records;
- (ii) First-aid records (not including medical histories) of one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and the like which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job, if made on-site by a nonphysician and if maintained separately from the employer's medical program and its records; and
- (iii) The medical records of employees who have worked for less than one year for the employer need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.

(b) Employee exposure records. Each employee exposure record shall be preserved and maintained for at least thirty years, except that:

(i) Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one year as long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained, are retained for at least thirty years; and

(ii) Employee exposure records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty years; and

(iii) Biological monitoring results designated as exposure records by specific occupational safety and health standards shall be preserved and maintained as required by the specific standard.

(c) Analyses using exposure or medical records. Each analysis using exposure or medical records shall be preserved and maintained for at least thirty years.

(2) Nothing in this section is intended to mandate the form, manner, or process by which an employer preserves a record as long as the information contained in the record is preserved and retrievable, except that chest x-ray films shall be preserved in their original state.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05207, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-62-05207, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05207, filed 8/27/81.]

WAC 296-62-05209 Access to records. (1) General.

(a) Whenever an employee or designated representative requests access to a record, the employer shall assure that access is provided in a reasonable time, place, and manner. If the employer cannot reasonably provide access to the record within fifteen working days, the employer shall within fifteen working days apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

(b) The employer may require of the requester only such information as should be readily known to the requester and which may be necessary to locate or identify the records being requested (e.g., dates and locations where the employee worked during the time period in question).

(c) Whenever an employee or designated representative requests a copy of a record, the employer shall assure that either:

- (i) A copy of the record is provided without cost to the employee or representative;
 - (ii) The necessary mechanical copying facilities (e.g., photocopying) are made available without cost to the employee or representative for copying the record;
 - (iii) The record is loaned to the employee or representative for a reasonable time to enable a copy to be made; or
 - (iv) In the case of an original x-ray, the employer may restrict access to on-site examination or make other suitable arrangements for the temporary loan of the x-ray.
- (d) Whenever a record has been previously provided without cost to an employee or designated representative, the

employer may charge reasonable, nondiscriminatory administrative costs (i.e., search and copying expenses but not including overhead expenses) for a request by the employee or designated representative for additional copies of the record, except that:

(i) An employer shall not charge for an initial request for a copy of new information that has been added to a record which was previously provided; and

(ii) An employer shall not charge for an initial request by a recognized or certified collective bargaining agent for a copy of an employee exposure record or an analysis using exposure or medical records.

(e) Nothing in this section is intended to preclude employees and collective bargaining agents from collectively bargaining to obtain access to information in addition to that available under this section.

(2) Employee and designated representative access.

(a) Employee exposure records. Except as limited by WAC 296-62-053, each employer shall, upon request, assure the access of each employee and designated representative to employee exposure records relevant to the employee. For the purpose of this section, an exposure record relevant to the employee consists of:

(i) A record which measures or monitors the amount of a toxic substance or harmful physical agent to which the employee is or has been exposed;

(ii) In the absence of such directly relevant records, such records of other employees with past or present job duties or working conditions related to or similar to those of the employee to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents to which the employee is or has been subjected; and

(iii) Exposure records to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents at workplaces or under working conditions to which the employee is being assigned or transferred.

(iv) Requests by designated representatives for unconsented access to employee exposure records shall be in writing and shall specify with reasonable particularity:

(A) The records requested to be disclosed; and

(B) The occupational health need for gaining access to these records.

(b) Employee medical records.

(i) Each employer shall, upon request, assure the access of each employee to employee medical records of which the employee is the subject, except as provided in (b)(iv) of this subsection.

(ii) Each employer shall, upon request, assure the access of each designated representative to the employee medical records of any employee who has given the designated representative specific written consent. Appendix A to this section contains a sample form which may be used to establish specific written consent for access to employee medical records.

(iii) Whenever access to employee medical records is requested, a physician representing the employer may recommend that the employee or designated representative:

(A) Consult with the physician for the purposes of reviewing and discussing the records requested;

(B) Accept a summary of material facts and opinions in lieu of the records requested; or

(C) Accept release of the requested records only to a physician or other designated representative.

(iv) Whenever an employee requests access to his or her employee medical records, and a physician representing the employer believes that direct employee access to information contained in the records regarding a specific diagnosis of a terminal illness or a psychiatric condition could be detrimental to the employee's health, the employer may inform the employee that access will only be provided to a designated representative of the employee having specific written consent, and deny the employee's request for direct access to this information only. Where a designated representative with specific written consent requests access to information so withheld, the employer shall assure the access of the designated representative to this information, even when it is known that the designated representative will give the information to the employee.

(v) A physician, nurse, or other responsible health care personnel maintaining employee medical records may delete from requested medical records the identity of a family member, personal friend, or fellow employee who has provided confidential information concerning an employee's health status.

(c) Analyses using exposure or medical records.

(i) Each employer shall, upon request, assure the access of each employee and designated representative to each analysis using exposure or medical records concerning the employee's working conditions or workplace.

(ii) Whenever access is requested to an analysis which reports the contents of employee medical records by either direct identifier (name, address, social security number, payroll number, etc.) or by information which could reasonably be used under the circumstances indirectly to identify specific employees (exact age, height, weight, race, sex, date of initial employment, job title, etc.) the employer shall assure that personal identifiers are removed before access is provided. If the employer can demonstrate that removal of personal identifiers from an analysis is not feasible, access to the personally identifiable portions of the analysis need not be provided.

(3) Department access.

(a) Each employer shall upon request, and without derogation of any rights under the Constitution or the Washington Industrial Safety and Health Act, that the employer chooses to exercise, assure the prompt access of representatives of the director of the department of labor and industries to employee exposure and medical records and to analyses using exposure or medical records. Rules of agency practice and procedures governing WISHA access to employee medical records are contained in this chapter.

(b) Whenever the department seeks access to personally identifiable employee medical information by presenting to the employer a written access order, the employer shall prominently post a copy of the written access order and its accompanying cover letter for at least fifteen working days.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-62-05209, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-62-05209, filed

5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-62-05209, filed 11/30/83. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-05209, filed 8/27/81.]

WAC 296-62-05211 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05301 Definitions. Understand a trade secret.

The following is a reprint of the Restatement of Torts section 757, comment b (1939):

Definition of trade secret. A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business (see § 759 of the Restatement of Torts which is not included in this Appendix) in that it is not simply information as to single or ephemeral events in the conduct of the business, as, for example, the amount or other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operations of the business. Generally, it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

Director means the director of the department of labor and industries or his/her designee.

Chemical means any element, chemical compound or mixture of elements and/or compounds.

Chemical manufacturer means an employer with a workplace where chemical(s) are produced for use or distribution.

Chemical name means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

Combustible liquid means any liquid having a flashpoint at or above 100°F (37.8°C), but 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.

Commercial account means an arrangement whereby a retail distributor sells hazardous chemical(s) to an employer, generally in large quantities over time and/or at costs that are below the regular retail price.

Common name means any designation or identification such as code name, code number, trade name, brand name or

generic name used to identify a chemical other than by its chemical name.

Compressed gas means:

- A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F (21.1°C); or
- A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C); or
- A liquid having a vapor pressure exceeding 40 psi at 100°F (37.8°C) as determined by ASTM D-323-72.

Container means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this part, pipes or piping systems are not considered to be containers.

Designated representative means any individual or organization to whom an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

Definitions applicable to this rule:

Distributor means a business, other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers.

Employee means an employee of an employer who is employed in the business of his or 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 personal labor for an employer under this standard whether by way of manual labor or otherwise. However, for the purposes of this part, employee shall not mean immediate family members of the officers of any corporation, partnership, sole proprietorship, or other business entity or officers of any closely held corporation engaged in agricultural production of crops or livestock. This part applies to employees who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies.

Employer means any person, firm, corporation, partnership, business trust, legal representative, or other business entity that engages in any business, industry, profession, or activity in this state and employs one or more employees or who contract 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. This part applies to employers engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

Explosive means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Exposure or exposed means that an employee is/was subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes potential (e.g., accidental or possible) exposure.

Flammable means a chemical that falls into one of the following categories:

• Aerosol flammable means an aerosol that, when tested by the method described in 16 CFR 1500.45 yields a flame projection exceeding eighteen inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

• Gas, flammable means:

• A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen percent by volume or less; or

• A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve percent by volume, regardless of the lower limit;

• Liquid, flammable 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.

• Solid, flammable means a solid, other than a blasting agent or explosive as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

• Tagliabue closed tester: (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

• Pensky-Martens closed tester: (See American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

• Setaflash closed tester: (See American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

Note: Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

Foreseeable emergency means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

Hazardous chemical means any chemical which is a physical hazard or a health hazard.

Hazard warning means any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the specific physical and health hazard(s), including target organ effects, of the chem-

ical(s) in the container(s). (See definition for "physical hazard" and "health hazard" to determine the hazards which must be covered.)

Health hazard means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. Appendix A provides further definitions and explanations of the scope of health hazards covered by this part, and Appendix B describes the criteria to be used to determine whether or not a chemical is to be considered hazardous for purposes of this standard.

Identity means any chemical or common name which is indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

Importer means the first business within the Customs Territory of the United States which receives hazardous chemicals produced in other countries, for the purpose of supplying them to distributors or employers within the United States. This definition is the same as Webster's, therefore we did not include it in the definitions.

Material safety data sheet (MSDS) means written or printed material concerning a hazardous chemical which is prepared in accordance with WAC 296-62-05408.

Mixture means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

Organic peroxide means an organic compound that contains the bivalent-O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer means a chemical other than a blasting agent or explosive as defined in WAC 296-52-417 or CFR 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Permissible exposure limits (PELs) refer to airborne concentrations of substances without regard to the use of respiratory protection and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. The permissible exposure limits (PELs) shall include the following four categories:

• Permissible exposure limits - Time-weighted average (PEL-TWA) is the time weighted average airborne exposure to any 8-hour work shift of a 40-hour work week which shall not be exceeded.

• Permissible exposure limits - Short-term exposure limit (PEL-STEL) is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless another time limit is specified in a parenthetical notation below the limit. If another time period is specified, the time weighted average exposure over that

time period shall not be exceeded at any time during the working day.

- Permissible exposure limits - Ceiling (PEL-C) is the employee's exposure which shall not be exceeded during any part of the work day. If instantaneous monitoring is not feasible, then the ceiling shall be assessed as a 15-minute time weighted average exposure which shall not be exceeded at any time over a working day.

- "Skin" notation is the potential contribution to the overall employee exposure by the cutaneous route including mucous membranes and eye, either by airborne, or more particularly, by direct contact with the substance. These substances are identified as having a "skin" notation in the OSHA and WISHA PEL tables (29 CFR Part 1910 Subpart Z and WAC 296-62-075, respectively).

Physical hazard means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Produce means to manufacture, process, formulate, blend, extract, generate, emit, or repackage.

Purchaser means an employer with a workplace who purchases a hazardous chemical for use within that workplace.

Pyrophoric means a chemical that will ignite spontaneously in air at a temperature of 130°F (54.4°C) or below.

Responsible party means someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

Specific chemical identity means the chemical name, Chemical Abstracts Service (CAS) registry number, or any other information that reveals the precise chemical designation of the substance.

Threshold limit values (TLVs) refer to airborne concentrations of substances without regard to the use of respiratory protection and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. The TLV includes the TLV-Time weighted average (TLV-TWA), TLV-Short term exposure limit (TLV-STEL), TLV-Ceiling (TLV-Ceiling) and "skin" notation as stated in the most recent edition of the "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices" from the American Conference of Governmental Industrial Hygienists (ACGIH).

Trade secret means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. WAC 296-62-05427, Appendix D, provides a legal definition of trade secret and WAC 296-62-05417 sets out the criteria to be used in evaluating trade secrets.

Unstable (reactive) means a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Use means to package, handle, react, emit, extract, generate as a by-product, or transfer.

Water-reactive means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

Workplace means an establishment, job site, or project, at one geographical location containing one or more work areas.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05301, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05305 Meet certain conditions if you withhold trade secret information. You may withhold the specific chemical identity, including the chemical name and other specific identification of a toxic substance or hazardous chemical, from a disclosable record or a material safety data sheet if you meet each of the following conditions:

You:

- Can support the claim that the information withheld is a trade secret.

- Disclose all other available information about the properties and effects of the toxic substance.

- Disclose the information in the material safety data sheet about the properties and effects of the hazardous chemical.

- Inform the person requesting the information, or the material safety data sheet states that the specific chemical identity is being withheld as a trade secret.

- Make available the specific chemical identity to health professionals, employees, and their designated representatives according to the provisions of this rule.

Nothing in this rule hinders an employer from deleting from records requested by a health professional, employee, or designated representative any trade secret data which discloses manufacturing processes, or discloses the percentage of a chemical substance in a mixture.

You must notify the health professional, employee, or designated representative requesting records that information about the trade has been deleted from the records.

If deleting trade secret information from a record substantially impairs evaluation of the location or the time when exposure to a toxic substance occurred, you must provide alternative information that enables the requesting party to identify where and when the exposure occurred.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05305, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05310 Reveal trade secret information when it is needed in order to treat a medical or first-aid emergency. When a physician or nurse treating a patient determines that a medical emergency exists and the specific chemical identity of a toxic substance or hazardous chemical is necessary for emergency or first-aid treatment, you must immediately disclose the specific chemical identity of a trade secret chemical to the treating physician or nurse.

You must do this even if you do not have a written statement of need or a confidentiality agreement from the physician or nurse who is handling the medical emergency.

You may require a written statement of need and confidentiality agreement, in accordance with the provisions of nonemergency situations and confidentiality agreement of

this rule (see WAC 296-62-05315), as soon as the circumstances of the medical emergency permit.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05310, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05315 Reveal trade secret information in nonemergency situations when requested by a health professional, employee, or designated representative.

The request by the health professional, employee, or designated representative must:

- Be in writing.
- Describe with reasonable detail one or more of the reasons the information is needed. The reason(s) must be related to occupational health needs, such as to:
 - Assess the hazards of the chemicals to which employees will be exposed.
 - Conduct or assess sampling of the workplace atmosphere to determine employee exposure levels.
 - Conduct preassignment or periodic medical surveillance of exposed employees.
 - Provide medical treatment to exposed employees.
 - Select or assess appropriate personal protective equipment for exposed employees.
 - Design or assess engineering controls or other protective measures for exposed employees.
 - Conduct studies to determine the health effects of exposure.
- Explain in detail why the disclosure of the specific chemical identity is essential.
 - Explain why disclosing the:
 - Properties and effects of the chemical.
 - Measures for controlling workers' exposure to the chemical.
 - Methods of monitoring and analyzing worker exposure to the chemical.
 - Methods of diagnosing and treating harmful exposures to the chemical in lieu of trade secret information would prevent the health professional, employee, or designated representative from providing the occupational health services described in the occupational health needs description.
- Describe procedures to be used to maintain the confidentiality of the disclosed information. The health professional, employee, or designated representative and the employer or contractor of the services of the health professional or designated representative agree in a written confidentiality agreement that the health professional, employee, or designated representative:
 - Will not use the trade secret information for any purpose other than the health need(s) described; and
 - Agree not to release the information under any circumstances other than to WISHA, except as authorized by the terms of the agreement or by the employer.

This confidentiality agreement may:

- Restrict the use of the information to the health purposes indicated in the written statement of need.
- Provide for appropriate legal remedies in the event of a breach of the agreement, including a reasonable preestimate of likely damages.

- Not include requirements for the posting of a penalty bond.

If the health professional, employee, or designated representative receiving the trade secret information decides that there is a need to disclose it to WISHA, he or she must inform the employer who provided the information prior to, or at the same time as disclosing it to WISHA.

Nothing in this section is meant to preclude the parties from pursuing noncontractual remedies to the extent permitted by law.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05315, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05320 Deny a written request for disclosure of a specific chemical identity in the manner specified in this rule. If you choose to deny a written request for disclosure of information about a specific chemical identity, your denial must:

- Be given to the health professional, employee, or designated representative within thirty days of the request.
- Be in writing.
- Include evidence to support the claim that the specific chemical identity is a trade secret.
- State the specific reasons why the request is being denied.
 - Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.
 - If a request for information is denied under the non-emergency section of this rule, the request may then be referred with the written denial of the request to WISHA for consideration.
 - When a denial is referred to WISHA, WISHA must consider the evidence to determine if the:
 - Chemical manufacturer, importer or employer has supported the claim that the specific chemical identity is a trade secret.
 - Health professional, employee, or designated representative has supported the claim that there is a medical or occupational health need for the information.
 - Health professional, employee, or designated representative has demonstrated adequate means to protect the confidentiality of the trade secret information.

Potential outcomes of denying a written request for trade secret information:

- If WISHA determines that the specific chemical identity requested under the nonemergency situations section is not a bona fide trade secret, or that it is a trade secret but the requesting health professional, employee, or designated representative has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means for complying with the terms of such agreement, the chemical manufacturer, importer or employer will be subject to a citation by WISHA.
- If a chemical manufacturer, importer or employer demonstrates to WISHA that the execution of a confidentiality agreement would not provide sufficient protection against potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the director may issue such

orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health needs are met without an undue risk of harm to the chemical manufacturer, importer or employer.

• In spite of the existence of a trade secret claim, a chemical manufacturer, importer or employer must upon request, disclose to the director or his representative, any information that this section requires the chemical manufacturer, importer or employer to make available. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the director so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05320, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05325 Understand what is a trade secret. The following is a reprint of the *Restatement of Torts* section 757, comment *b* (1939):

b. Definition of trade secret. A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business (see § 759 of the *Restatement of Torts* which is not included in this Appendix) in that it is not simply information as to single or ephemeral events in the conduct of the business, as, for example, the amount or other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operations of the business. Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

Secrecy. The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as his secret. Matters which are completely disclosed by the goods which one markets cannot be his secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business know it. He may, without losing his protection, communicate it to employees involved in its use. He may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as, for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper

means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are:

- (1) The extent to which the information is known outside of his business;
- (2) The extent to which it is known by employees and others involved in his business;
- (3) The extent of measures taken by him to guard the secrecy of the information;
- (4) The value of the information to him and his competitors;
- (5) The amount of effort or money expended by him in developing the information;
- (6) The ease or difficulty with which the information could be properly acquired or duplicated by others.

Novelty and prior art. A trade secret may be a device or process which is patentable; but it need not be that. It may be a device or process which is clearly anticipated in the prior art or one which is merely a mechanical improvement that a good mechanic can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against unlicensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention which is a requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort to the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05325, filed 5/9/01, effective 9/1/01.]

WAC 296-62-054 Manufacturers, importers and distributors—Hazard communication. Your responsibility: To ensure that the hazards of all chemicals produced or imported are evaluated and that information concerning their hazards is given to employers and employees.

- Note:
- If you have employees exposed to the chemicals you produce, import or distribute, you must comply with "Chemical hazard communication rule" WAC 296-800-170.
 - If you are an employer who relies on a material safety data sheet from the manufacturer, importer or distributor and you distribute or produce hazardous chemicals, you do not have to comply with this rule.

You must:

- Determine whether the chemicals you produce in your workplace or import are hazardous. WAC 296-62-05402
- Use this criteria in making hazard determinations. WAC 296-62-05404
- Determine whether the chemicals you produce or import are health hazards. WAC 296-62-05406
- Obtain or develop a material safety data sheet for each hazardous chemical you produce or import. WAC 296-62-05408
- Label clearly each container of hazardous chemicals that leaves your workplace. WAC 296-62-05410
- Provide material safety data sheets. WAC 296-62-05412

Application of this standard:

The Manufacturers, Importers, and Distributors Hazardous Communication Rule DOES NOT APPLY to:

- Any hazardous waste as such term is defined by the Hazardous Waste Management Act chapter 70.105 RCW, when subject to regulations issued under that act by the department of ecology that describes specific safety, labeling, personnel training and other standards for the accumulation, handling and management of hazardous waste;
- Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that act by the Environmental Protection Agency;
- Any hazardous substance as such term is defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et seq.), when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with Environmental Protection Agency regulations;
- Tobacco or tobacco products;
- Wood or wood products, including lumber that will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to the employees is the potential for flammability or combustibility (wood or wood products that have been treated with hazardous chemicals covered by this standard, and wood that may be subsequently sawed or cut, generating dust, are not exempted);
- Articles are manufactured items other than a fluid or particle:
 - That are formed to a specific shape or design during manufacture;
 - That have end use function(s) dependent in whole or in part upon their shape or design during end use; and
 - That under normal conditions of use do not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under the hazard determination section of this rule), and do not pose a physical hazard or health risk to employees.
- Food or alcoholic beverages that are sold, used, or prepared in a retail establishment (such as grocery store, restaurant, or drinking place), and foods intended for personal consumption by employees while in the workplace;
- Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in

solid, final form for direct administration to the patient (e.g., tablets or pills); drugs that are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);

- Cosmetics that are packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace;

- Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substance Act (15 U.S.C. 1261 et seq.) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure that is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended;

- Ionizing and nonionizing radiation; and
- Biological hazards.

Article means a manufactured item other than a fluid or particle:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part upon its shape or design during end use; and
- Which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under WAC 296-62-05407), and does not pose a physical hazard or health risk to employees.

Director means the director of the department of labor and industries or his/her designee.

Chemical means any element, chemical compound or mixture of elements and/or compounds.

Chemical manufacturer means an employer with a workplace where chemical(s) are produced for use or distribution.

Chemical name means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

Common name means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

Designated representative means any individual or organization to whom an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

Employee means an employee of an employer who is employed in the business of his or 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 personal labor for an employer under this standard whether by

way of manual labor or otherwise. However, for the purposes of this part, employee shall not mean immediate family members of the officers of any corporation, partnership, sole proprietorship, or other business entity or officers of any closely held corporation engaged in agricultural production of crops or livestock. This part applies to employees who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies.

Employer means any person, firm, corporation, partnership, business trust, legal representative, or other business entity that engages in any business, industry, profession, or activity in this state and employs one or more employees or who contract 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. This part applies to employers engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

Exposure or exposed means that an employee is/was subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes potential (e.g., accidental or possible) exposure.

Foreseeable emergency means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

Hazardous chemical means any chemical which is a physical hazard or a health hazard.

Identity means any chemical or common name which is indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

Importer means the first business within the Customs Territory of the United States which receives hazardous chemicals produced in other countries, for the purpose of supplying them to distributors or employers within the United States. This definition is the same as Webster's, therefore we did not include it in the definitions.

Material safety data sheet (MSDS) means written or printed material concerning a hazardous chemical which is prepared in accordance with WAC 296-62-05408.

Mixture means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

Novelty and prior art. A trade secret may be a device or process which is patentable; but it need not be that. It may be a device or process which is clearly anticipated in the prior art or one which is merely a mechanical improvement that a good mechanic can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against unlicensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection

is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention which is a requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort to the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.

Secrecy. The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as his secret. Matters which are completely disclosed by the goods which one markets cannot be his secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business know it. He may, without losing his protection, communicate it to employees involved in its use. He may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as, for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are:

The extent to which the information is known outside of his business;

The extent to which it is known by employees and others involved in his business;

The extent of measures taken by him to guard the secrecy of the information;

The value of the information to him and his competitors;

The amount of effort or money expended by him in developing the information;

The ease or difficulty with which the information could be properly acquired or duplicated by others.

Specific chemical identity means the chemical name, Chemical Abstracts Service (CAS) registry number, or any other information that reveals the precise chemical designation of the substance.

Trade secret means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. WAC 296-62-05225 provides a legal definition of trade secret and this rule sets out the criteria to be used in evaluating trade secrets.

Use means to package, handle, react, emit, extract, generate as a by-product, or transfer.

Workplace means an establishment, job site, or project, at one geographical location containing one or more work areas.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-054, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-62-054, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 84-22-012 (Order 84-22), § 296-62-054, filed 10/30/84; 84-13-001 (Order 84-14), § 296-62-054, filed 6/7/84.]

WAC 296-62-05402 Determine whether the chemicals you produce in your workplace or import are hazardous. Chemical manufacturers and importers must evaluate chemicals produced in their workplaces or imported by them to determine if they are hazardous.

Chemical manufacturers, importers or employers evaluating chemicals must identify and consider the available scientific evidence concerning physical and health hazards. For health hazards, evidence that is statistically significant and that is based on at least one positive study conducted in accordance with established scientific principles is considered to be sufficient to establish a hazardous effect if the results of the study meet the definitions of health hazards in this part. WAC 296-62-05406 must be consulted for the scope of health hazards covered, and WAC 296-62-05404 must be consulted for the criteria to be followed with respect to the completeness of the evaluation, and the data to be reported.

The chemical manufacturer, importer or employer evaluating chemicals must treat the following sources as establishing that the chemicals listed in them are hazardous:

- Chapter 296-62 WAC, General occupational health standards;
- 29 C.F.R. Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA); or
- *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment*, American Conference of Governmental Industrial Hygienists (ACGIH) (latest edition).
- The chemical manufacturer, importer, or employer is responsible for evaluating the hazards associated with the chemicals in these source lists in accordance with this requirement of the standard.

Chemical manufacturers, importers and employers evaluating chemicals must treat the following sources as establishing that a chemical is a carcinogen or potential carcinogen for hazard communication purposes:

- National Toxicology Program (NTP), Annual Report on Carcinogens (latest edition);
- International Agency for Research on Cancer (IARC) Monographs (latest editions);
- Chapter 296-62 WAC, General occupational health standards; or
- 29 C.F.R. Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration.

Note: The *Registry of Toxic Effects of Chemical Substances* published by the National Institute for Occupational Safety and Health indicates whether a chemical has been found by NTP or IARC to be a potential carcinogen.

The chemical manufacturer, importer or employer must determine the hazards of mixtures of chemicals as follows:

- If a mixture has been tested as a whole to determine its hazards, the results of such testing must be used to determine whether the mixture is hazardous;
- If a mixture has not been tested as a whole to determine whether the mixture is a health hazard, the mixture must be assumed to present the same health hazards as do the components that comprise one percent (by weight or volume) or greater of the mixture, except that the mixture must be assumed to present a carcinogenic hazard if it contains a component in concentrations of 0.1 percent or greater that is considered to be a carcinogen;
- If a mixture has not been tested as a whole to determine whether the mixture is a physical hazard, the chemical manufacturer, importer, or employer may use whatever scientifically valid data is available to evaluate the physical hazard potential of the mixture; and
- If the chemical manufacturer, importer, or employer has evidence to indicate that a component present in the mixture in concentrations of less than one percent (or in the case of carcinogens, less than 0.1 percent) could be released in concentrations that would exceed an established WISHA or OSHA permissible exposure limit or ACGIH threshold limit value, or could present a health risk to employees in those concentrations, the mixture must be assumed to present the same hazard.

Chemical manufacturers, importers, or employers evaluating chemicals must describe in writing the procedures they use to determine the hazards of the chemical they evaluate. The written procedures are to be made available, upon request, to employees, their designated representatives, the director or his/her designee and the National Institute of Occupational Safety and Health (NIOSH). The written description may be incorporated into the written hazard communication program required under WAC 296-800-17005.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05402, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05403 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05404 Use these criteria in making hazard determinations. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers, importers, and employers evaluating chemicals are not required to follow any specific methods for determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set forth in this rule.

Hazard evaluation is a process that relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. The performance-orientation of the hazard determination does not diminish the duty of the chemical manufacturer, importer or employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall be used in making hazard determinations that meet the requirements of this rule.

• **Carcinogenicity:** A determination by the National Toxicology Program, the International Agency for Research on Cancer, WISHA or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of this part. In addition, however, all available scientific data on carcinogenicity must be evaluated in accordance with the provisions of the requirements of this rule.

• **Human data:** Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.

• **Animal data:** Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results.

• **Adequacy and reporting of data.** The results of any studies that are designed and conducted according to established scientific principles, and that report statistically significant conclusions regarding the health effects of a chemical, shall be a sufficient basis for a hazard determination and reported on any material safety data sheet. In vitro studies alone generally do not form the basis for a definitive finding of a hazard under the hazard communication standard since they have a positive or negative result rather than a statistically significant finding.

The chemical manufacturer, importer, or employer may also report the results of other scientifically valid studies that tend to refute the findings of hazard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05404, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05405 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05406 Determine whether the chemicals you produce or import are health hazards. Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (e.g., flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body — such as decreased pulmonary function. These changes are generally indicated by the occurrence of signs and symptoms in the exposed employees — such as shortness of breath, a nonmeasurable, subjective feeling. Employees exposed to such hazards must be apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in nonoccupationally exposed populations, so that effects of exposure are difficult to separate from normally occurring illnesses. Occasionally, a substance causes an effect that is rarely seen in the population at large, such as angiosarcomas caused by vinyl chloride exposure, thus making it easier to ascertain that the occupational exposure was the primary causative factor. More often, however, the effects are common, such as lung cancer. The situa-

tion is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential, and data do not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in various ways. Generally, the terms "acute" and "chronic" are used to delineate between effects on the basis of severity or duration. "Acute" effects usually occur rapidly as a result of short-term exposures, and are of short duration. "Chronic" effects generally occur as a result of long-term exposure, and are of long duration.

The acute effects referred to most frequently are those defined by the American National Standards Institute (ANSI) standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.1-1988) — irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects that may occur as a result of occupational exposure, such as, for example, narcosis.

Similarly, the term chronic effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obviously a concern in the workplace, but again, do not adequately cover the area of chronic effects, excluding, for example, blood dyscrasias (such as anemia), chronic bronchitis and liver atrophy.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. This does not negate the need for employees to be informed of such effects and protected from them.

WAC 296-62-05404 outlines the principles and procedures of hazard assessment.

For purposes of this part, any chemicals that meet any of the following definitions, as determined by the criteria set forth in WAC 296-62-05404, are health hazards. However, this is not intended to be an exclusive categorization scheme. If there are available scientific data that involve other animal species or test methods, they must also be evaluated to determine the applicability of the hazard communication rule.

• **Carcinogen:** A chemical is considered to be a carcinogen if:

◆ It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or

◆ It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or

◆ It is regulated by WISHA as a carcinogen.

• **Corrosive:** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in Appendix A to 49 C.F.R. Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term must not refer to action on inanimate surfaces.

• **Highly toxic:** A chemical falling within any of the following categories:

◆ A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

◆ A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

◆ A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

• Irritant: A chemical, which is not corrosive, but that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 C.F.R. 1500.41 for four hours exposure or by other appropriate techniques, it results in an empirical score of five or more. A chemical is an eye irritant if so determined under the procedure listed in 16 C.F.R. 1500.42 or other appropriate techniques.

• Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

• Toxic: A chemical falling within any of the following categories:

◆ A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

◆ A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

◆ A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

• Target organ effects: The following is a target organ categorization of effects that may occur, including examples of signs and symptoms and chemicals that have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive.

(a)	Hepatotoxins:	Chemicals that produce liver damage.
	Signs & symptoms:	Jaundice, liver enlargement.
	Chemicals:	Carbon tetrachloride, nitro-samines.
(b)	Nephrotoxins:	Chemicals that produce kidney damage.
	Signs & symptoms:	Edema; proteinuria.
	Chemicals:	Halogenated hydrocarbons; uranium.
(c)	Neurotoxins:	Chemicals that produce their primary toxic effects on the nervous system.
	Signs & symptoms:	Narcosis; behavioral changes; decrease in motor functions.
	Chemicals:	Mercury, carbon disulfide.
(d)	Agents that act on the blood or hematopoietic system:	Decrease hemoglobin function; deprive the body of oxygen.
	Signs & symptoms:	Cyanosis; loss of consciousness.
	Chemicals:	Carbon monoxide; cyanides.
(e)	Agents that damage the lung:	Chemicals that irritate or damage the pulmonary tissue.
	Signs & symptoms:	Cough; tightness in chest; shortness of breath.
	Chemicals:	Silica; asbestos.
(f)	Reproductive toxins:	Chemicals that affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).
	Signs & symptoms:	Birth defects; sterility.
	Chemicals:	Lead; DBCP.
(g)	Cutaneous hazards:	Chemicals that affect the dermal layer of the body.
	Signs & symptoms:	Defatting of the skin; rashes; irritation.
	Chemicals:	Ketones; chlorinated compounds.
(h)	Eye hazards:	Chemicals that affect the eye or visual capacity.
	Signs & symptoms:	Conjunctivitis; corneal damage.
	Chemicals:	Organic solvents; acids.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05406, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05407 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05408 Obtain or develop a material safety data sheet for each hazardous chemical you produce or import. Chemical manufacturers and importers must

obtain or develop a material safety data sheet (MSDS) for each hazardous chemical they produce or import.

Each material safety data sheet must be in English (although the employer may maintain copies in other languages) and must contain at least the following information:

- The identity used on the label, and, except as provided for in the trade secrets rule, WAC 296-62-053:

- ◆ If the hazardous chemical is a single substance, its chemical and common name(s);

- ◆ If the hazardous chemical is a mixture that has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients that contribute to these known hazards, and the common name(s) of the mixture itself; or

- ◆ If the hazardous chemical is a mixture that has not been tested as a whole:

- (A) The chemical and common name(s) of all ingredients that have been determined to be health hazards, and that comprise 1% or greater of the composition, except that chemicals identified as carcinogens under "*Determine whether the chemicals you produce in your workplace or import are hazardous.*" section in "Manufactures, importers and distributors, chemical hazard communication," WAC 296-62-05401, shall be listed if the concentrations are 0.1% or greater; and

- (B) The chemical and common name(s) of all ingredients that have been determined to be health hazards, and that comprise less than one percent (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations that would exceed an established WISHA or OSHA permissible exposure limit or ACGIH threshold limit value, or could present a health risk to employees; and

- (C) The chemical and common name(s) of all ingredients that have been determined to present a physical hazard when present in the mixture;

- Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

- The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;

- The acute and chronic health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions that are generally recognized as being aggravated by exposure to the chemical;

- The primary route(s) of entry;

- The WISHA or OSHA permissible exposure limit, ACGIH threshold limit value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet (the PELs and TLVs include the 8-hour TWA, STEL, ceiling value and skin notation where available);

- Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by WISHA or OSHA;

- Any generally applicable precautions for safe handling and use that are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures

during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;

- Any generally applicable control measures that are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;

- Emergency and first aid procedures;

- The date of preparation of the material safety data sheet or the last change to it; and

- The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

If no relevant information is found for any given category on the material safety data sheet, the chemical manufacturer, importer or employer preparing the material safety data sheet must mark it to indicate that no applicable information was found.

Where complex mixtures have similar hazards and contents (i.e., the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one material safety data sheet to apply to all of these similar mixtures.

The chemical manufacturer, importer or employer preparing the material safety data sheet must ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If the chemical manufacturer, importer or employer preparing the material safety data sheet becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information must be added to the material safety data sheet within three months. If the chemical is not currently being produced or imported, the chemical manufacturer or importer must add the information to the material safety data sheet before the chemical is introduced into the workplace again.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05408, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05409 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05410 Label clearly each container of hazardous chemicals that leaves your workplace. The chemical manufacturer, importer, or distributor must ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked with the following information:

- Identity of the hazardous chemical(s);

- Appropriate hazard warnings; and

- Name and address of the chemical manufacturer, importer, or other responsible party.

For solid metal (such as a steel beam or a metal casting), solid wood, or plastic items that are not exempted as articles due to their downstream use, or shipments of whole grain, the required label may be:

- Transmitted to the customer at the time of the initial shipment, and need not be included with subsequent shipments to the same employer unless the information on the label changes;

- Transmitted with the initial shipment itself, or with the material safety data sheet that is to be provided prior to or at the time of the first shipment; and

- This exception to requiring labels on every container of hazardous chemicals is only for the solid material itself and does not apply to hazardous chemicals used in conjunction with, or known to be present with, the material and to that which employees handling the items in transit may be exposed (for example, cutting fluids or pesticides in grain).

Chemical manufacturers, importers, or distributors must ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged, or marked in accordance with this part in a manner that does not conflict with the requirements of the Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.) and regulations issued under that act by the department of transportation.

If the hazardous chemical is regulated by WISHA or OSHA in a substance-specific health standard, the chemical manufacturer, importer, distributor or employer must ensure that the labels or other forms of warning used are in accordance with the requirements of that standard.

The chemical manufacturer, importer, distributor or employer need not affix new labels to comply with this part if existing labels already convey the required information.

Chemical manufacturers, importers, distributors, or employers who become newly aware of any significant information regarding the hazards of a chemical must revise the labels for the chemical within three months of becoming aware of the new information. Labels on containers of hazardous chemicals shipped after that time must contain the new information. If the chemical is not currently produced or imported, the chemical manufacturer, importer, distributor, or employer must add the information to the label before the chemical is shipped or introduced into the workplace again.

Retention of DOT markings, placards and labels.

■ Any employer who receives a package of hazardous material that is required to be marked, labeled or placarded in accordance with the U.S. Department of Transportation's Hazardous Materials Regulations (49 C.F.R. Parts 171 through 180) must retain those markings, labels and placards on the package until the packaging is sufficiently cleaned of residue and purged of vapors to remove any potential hazards.

■ Any employer who receives a freight container, rail freight car, motor vehicle, or transport vehicle that is required to be marked or placarded in accordance with the Hazardous Materials Regulations must retain those markings and placards on the freight container, rail freight car, motor vehicle or transport vehicle until the hazardous materials that require the marking or placarding are sufficiently removed to prevent any potential hazards.

■ Markings, placards and labels must be maintained in a manner that ensures that they are readily visible.

■ For nonbulk packages that will not be reshipped, the provisions of this section are met if a label or other acceptable marking is affixed in accordance with this rule.

■ For the purposes of this section, the term "hazardous material" and any other terms not defined in this section have the same definition as in the Hazardous Materials Regulations (49 C.F.R. Parts 171 through 180).

The hazard communication rule does not require labeling of the following chemicals:

- Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that act and labeling regulations issued under that act by the Environmental Protection Agency;

- Any chemical substance or mixture as such terms are defined in the Toxic Substance Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that act and labeling requirements issued under that act by the Environmental Protection Agency;

- Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials intended for use as ingredients in such products (e.g., flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum Toxin Act of 1913 (21 U.S.C. 151 et seq.) and regulations issued under those acts, when they are subject to the labeling requirements under those acts by either the Food and Drug Administration or the department of agriculture;

- Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that act, when subject to the labeling requirements of that act and labeling regulations issued under that act by the Bureau of Alcohol, Tobacco, and Firearms;

- Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those acts, or regulations issued under those acts by the Consumer Product Safety Commission; and

- Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act (7 U.S.C. 1551 et seq.) and the labeling requirements issued under that act by the department of agriculture.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05410, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05411 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05412 Provide material safety data sheets. Chemical manufacturers or importers must:

- Ensure that distributors and employers are provided an appropriate material safety data sheet with their initial shipment, and with the first shipment after a material safety data sheet is updated;

- Either provide material safety data sheets with the shipped containers or send them to the distributor or employer prior to or at the time of the shipment;

- If the material safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the distributor or employer must obtain one from the chemical manufacturer or importer as soon as possible; and

- Also, provide distributors or employers with a material safety data sheet upon request.

Distributors must:

- Ensure that material safety data sheets, and updated information, are provided to other distributors and employers with their initial shipment and with the first shipment after a material safety data sheet is updated;

- Either provide material safety data sheets with the shipped containers, or send them to the other distributor or employer prior to or at the time of the shipment;

- If the material safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the distributor must obtain one from the chemical manufacturer or importer as soon as possible.

Retailers selling hazardous chemicals to employers having a commercial account must provide a material safety data sheet to such employers upon request, and must post a sign or otherwise inform them that a material safety data sheet is available.

Wholesale distributors selling hazardous chemicals to employers over-the-counter may also provide material safety data sheets upon request of the employer at the time of the over-the-counter purchase, and must post a sign or otherwise inform such employers that a material safety data sheet is available.

If an employer without a commercial account purchases a hazardous chemical from a retail distributor not required to have material safety data sheets on file (i.e., the retail distributor does not have a commercial account and does not use the materials), the retail distributor must provide the employer, upon request, with the name, address, and telephone number of the chemical manufacturer, importer, or distributor from which a material safety data sheet can be obtained.

Wholesale distributors must also provide material safety data sheets to employers or other distributors upon request.

Chemical manufacturers, importers, and distributors need not provide material safety data sheets to retail distributors that have informed them that the retail distributor does not sell the product to commercial accounts or open the sealed container to use it in their own workplaces.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-05412, filed 5/9/01, effective 9/1/01.]

WAC 296-62-05413 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05415 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05417 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05419 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05421 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05423 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05425 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05427 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-05429 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-07101 To whom does chapter 296-62 WAC, Part E apply? Chapter 296-62 WAC, Part E applies to all employers covered by WISHA. Other requirements for personal protective equipment (PPE) are found in WAC 296-800-160.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07101, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07101, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-62-07101, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07101, filed 7/27/81.]

WAC 296-62-07306 Requirements for areas containing carcinogens listed in WAC 296-62-07302. (1) A regulated area shall be established by an employer where listed carcinogens are manufactured, processed, used, repackaged, released, handled or stored.

(2) All such areas shall be controlled in accordance with the requirements for the following category or categories describing the operation involved:

(a) Isolated systems. Employees working with carcinogens within an isolated system such as a "glove box" shall wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

(b) Closed system operation. Within regulated areas where carcinogens are stored in sealed containers, or contained in a closed system including piping systems with any sample ports or openings closed while carcinogens are contained within:

(i) Access shall be restricted to authorized employees only;

(ii) Employees shall be required to wash hands, forearms, face and neck upon each exit from the regulated areas, close to the point of exit and before engaging in other activities.

(c) Open vessel system operations. Open vessel system operations as defined in WAC 296-62-07304(12) are prohibited.

(d) Transfer from a closed system. Charging or discharging point operations, or otherwise opening a closed system. In operations involving "laboratory-type hoods," or in locations where a carcinogen is contained in an otherwise "closed system," but is transferred, charged, or discharged into other

normally closed containers, the provisions of this section shall apply.

(i) Access shall be restricted to authorized employees only;

(ii) Each operation shall be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated. Clean makeup air shall be introduced in sufficient volume to maintain the correct operation of the local exhaust system.

(iii) Employees shall be provided with, and required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.

(iv) Employees engaged in handling operations involving the following carcinogens must be provided with and required to wear and use a full-face, supplied-air respirator, of the continuous flow or pressure-demand type as required in chapter 296-62 WAC, Part E:

- Methyl Chloromethyl Ether;
- bis-Chloromethyl Ether;
- Ethylenimine;
- beta-Propiolactone;
- 4-Amino Diphenyl.

(v) Employees engaged in handling operations involving:

- 4-nitrobiphenyl;
- alpha-naphthylamine;
- 4-4'methylene bis(2-chloroaniline);
- 3-3'dichlorobenzidine (and its salts);
- beta-naphthylamine;
- benzidine;
- 2-acetyl amino fluorene;
- 4-dimethylaminobenzene;
- n-nitrosodimethylamine

must be provided with, and required to wear and use, a half-face, filter-type respirator certified for solid or liquid particulates with minimum efficiency rating of 95% as required in chapter 296-62 WAC, Part E. A respirator affording higher levels of protection than this respirator may be substituted.

(vi) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under WAC 296-62-07310 (2), (3) and (4).

(vii) Employees shall be required to wash hands, forearms, face and neck on each exit from the regulated area, close to the point of exit, and before engaging in other activities.

(viii) Employees shall be required to shower after the last exit of the day.

(ix) Drinking fountains are prohibited in the regulated area.

(e) Maintenance and decontamination activities. In clean up of leaks or spills, maintenance or repair operations on contaminated systems or equipment, or any operations involving work in an area where direct contact with carcinogens could result, each authorized employee entering the area shall:

(i) Be provided with and required to wear, clean, impervious garments, including gloves, boots and continuous-air supplied hood in accordance with WAC 296-800-160, and respiratory protective equipment required by this chapter 296-62 WAC;

(ii) Be decontaminated before removing the protective garments and hood;

(iii) Be required to shower upon removing the protective garments and hood.

(f) Laboratory activities. The requirements of this subdivision shall apply to research and quality control activities involving the use of carcinogens listed in WAC 296-62-07302.

(i) Mechanical pipetting aids shall be used for all pipetting procedures.

(ii) Experiments, procedures and equipment which could produce aerosols shall be confined to laboratory-type hoods or glove boxes.

(iii) Surfaces on which carcinogens are handled shall be protected from contamination.

(iv) Contaminated wastes and animal carcasses shall be collected in impervious containers which are closed and decontaminated prior to removal from the work area. Such wastes and carcasses shall be incinerated in such a manner that no carcinogenic products are released.

(v) All other forms of listed carcinogens shall be inactivated prior to disposal.

(vi) Laboratory vacuum systems shall be protected with high efficiency scrubbers or with disposable absolute filters.

(vii) Employees engaged in animal support activities shall be:

(A) Provided with, and required to wear, a complete protective clothing change, clean each day, including coveralls or pants and shirt, foot covers, head covers, gloves, and appropriate respiratory protective equipment or devices; and

(B) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under WAC 296-62-07310 (2), (3) and (4).

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities; and

(D) Required to shower after the last exit of the day.

(viii) Employees, other than those engaged only in animal support activities, each day shall be:

(A) Provided with and required to wear a clean change of appropriate laboratory clothing, such as a solid front gown, surgical scrub suit, or fully buttoned laboratory coat.

(B) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to

place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified as required under WAC 296-62-07310 (2), (3) and (4).

(C) Required to wash hands, forearms, face and neck upon each exit from the regulated area close to the point of exit, and before engaging in other activities.

(ix) Air pressure in laboratory areas and animal rooms where carcinogens are handled and bioassay studies are performed shall be negative in relation to the pressure in surrounding areas. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated.

(x) There shall be no connection between regulated areas and any other areas through the ventilation system.

(xi) A current inventory of the carcinogens shall be maintained.

(xii) Ventilated apparatus such as laboratory-type hoods, shall be tested at least semi-annually or immediately after ventilation modification or maintenance operations, by personnel fully qualified to certify correct containment and operation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07306, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07306, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 96-09-030, § 296-62-07306, filed 4/10/96, effective 6/1/96. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-009 (Order 86-28), § 296-62-07306, filed 7/25/86; 85-10-004 (Order 85-09), § 296-62-07306, filed 4/19/85. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-015 (Order 81-20), § 296-62-07306, filed 7/27/81. 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), § 296-62-07306, filed 11/13/80.]

WAC 296-62-07308 General regulated area requirements. (1) Respirator program. The employer must implement a respiratory protection program as required in chapter 296-62 WAC, Part E (except WAC 296-62-07130 (1) and (5) and 296-62-07131).

(2) Emergencies. In an emergency, immediate measures including, but not limited to, the requirements of (a), (b), (c), (d) and (e) of this subsection shall be implemented.

(a) The potentially affected area shall be evacuated as soon as the emergency has been determined.

(b) Hazardous conditions created by the emergency shall be eliminated and the potentially affected area shall be decontaminated prior to the resumption of normal operations.

(c) Special medical surveillance by a physician shall be instituted within twenty-four hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with WAC 296-62-07312(2).

(d) Where an employee has a known contact with a listed carcinogen, such employee shall be required to shower as soon as possible, unless contraindicated by physical injuries.

(e) An incident report on the emergency shall be reported as provided in WAC 296-62-07312(2).

(3) Hygiene facilities and practices.

(a) Storage or consumption of food, storage or use of containers of beverages, storage or application of cosmetics,

smoking, storage of smoking materials, tobacco products or other products for chewing, or the chewing of such products, are prohibited in regulated areas.

(b) Where employees are required by this section to wash, washing facilities shall be provided in accordance with WAC 296-800-230.

(c) Where employees are required by this section to shower, shower facilities shall be provided.

(i) One shower shall be provided for each ten 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 WAC 296-24-12009, of the general safety and health standards.

(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.

(d) Where employees wear protective clothing and equipment, clean change rooms shall be provided and shall be equipped with storage facilities for street clothes and separate storage facilities for the protective clothing for the number of such employees required to change clothes.

(e) Where toilets are in regulated areas, such toilets shall be in a separate room.

(4) Contamination control.

(a) Regulated areas, except for outdoor systems, shall be maintained under pressure negative with respect to nonregulated areas. Local exhaust ventilation may be used to satisfy this requirement. Clean makeup air in equal volume shall replace air removed.

(b) Any equipment, material, or other item taken into or removed from a regulated area shall be done so in a manner that does not cause contamination in nonregulated areas or the external environment.

(c) Decontamination procedures shall be established and implemented to remove carcinogens from the surfaces of materials, equipment and the decontamination facility.

(d) Dry sweeping and dry mopping are prohibited.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07308, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07308, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-62-07308, filed 11/30/83. 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), § 296-62-07308, filed 11/13/80.]

WAC 296-62-07336 Acrylonitrile. (1) Scope and application.

(a) This section applies to all occupational exposure to acrylonitrile (AN), Chemical Abstracts Service Registry No. 000107131, except as provided in (b) and (c) of this subsection.

(b) This section does not apply to exposures which result solely from the processing, use, and handling of the following materials:

(i) ABS resins, SAN resins, nitrile barrier resins, solid nitrile elastomers, and acrylic and modacrylic fibers, when these listed materials are in the form of finished polymers, and products fabricated from such finished polymers;

(ii) Materials made from and/or containing AN for which objective data is reasonably relied upon to demonstrate

that the material is not capable of releasing AN in airborne concentrations in excess of 1 ppm as an eight-hour time-weighted average, under the expected conditions of processing, use, and handling which will cause the greatest possible release; and

(iii) Solid materials made from and/or containing AN which will not be heated above 170°F during handling, use, or processing.

(c) An employer relying upon exemption under (1)(b)(ii) shall maintain records of the objective data supporting that exemption, and of the basis of the employer's reliance on the data as provided in subsection (17) of this section.

(2) Definitions, as applicable to this section:

(a) "Acrylonitrile" or "AN" - acrylonitrile monomer, chemical formula $\text{CH}_2=\text{CHCN}$.

(b) "Action level" - a concentration of AN of 1 ppm as an eight-hour time-weighted average.

(c) "Authorized person" - any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the opportunity to observe monitoring procedures under subsection (18) of this section.

(d) "Decontamination" means treatment of materials and surfaces by water washdown, ventilation, or other means, to assure that the materials will not expose employees to airborne concentrations of AN above 1 ppm as an eight-hour time-weighted average.

(e) "Director" - the director of labor and industries, or his authorized representative.

(f) "Emergency" - any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which is likely to, or does, result in unexpected exposure to AN in excess of the ceiling limit.

(g) "Liquid AN" means AN monomer in liquid form, and liquid or semiliquid polymer intermediates, including slurries, suspensions, emulsions, and solutions, produced during the polymerization of AN.

(h) "Polyacrylonitrile" or "PAN" - polyacrylonitrile homopolymers or copolymers, except for materials as exempted under subsection (1)(b) of this section.

(3) Permissible exposure limits.

(a) Inhalation.

(i) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of acrylonitrile in excess of two parts acrylonitrile per million parts of air (2 ppm), as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration of acrylonitrile in excess of 10 ppm as averaged over any fifteen-minute period during the working day.

(b) Dermal and eye exposure. The employer shall assure that no employee is exposed to skin contact or eye contact with liquid AN or PAN.

(4) Notification of use and emergencies.

(a) Use. Within ten days of the effective date of this standard, or within fifteen days following the introduction of AN into the workplace, every employer shall report, unless he has done so pursuant to the emergency temporary standard, the

following information to the director for each such workplace:

(i) The address and location of each workplace in which AN is present;

(ii) A brief description of each process of operation which may result in employee exposure to AN;

(iii) The number of employees engaged in each process or operation who may be exposed to AN and an estimate of the frequency and degree of exposure that occurs; and

(iv) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to AN. Whenever there has been a significant change in the information required by this subsection, the employer shall promptly amend such information previously provided to the director.

(b) Emergencies and remedial action. Emergencies, and the facts obtainable at that time, shall be reported within 24 hours of the initial occurrence to the director. Upon request of the director, the employer shall submit additional information in writing relevant to the nature and extent of employee exposures and measures taken to prevent future emergencies of a similar nature.

(5) Exposure monitoring.

(a) General.

(i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to AN over an eight-hour period.

(ii) For the purposes of this section, employee exposure is that which would occur if the employee were not using a respirator.

(b) Initial monitoring. Each employer who has a place of employment in which AN is present shall monitor each such workplace and work operation to accurately determine the airborne concentrations of AN to which employees may be exposed. Such monitoring may be done on a representative basis, provided that the employer can demonstrate that the determinations are representative of employee exposures.

(c) Frequency.

(i) If the monitoring required by this section reveals employee exposure to be below the action level, the employer may discontinue monitoring for that employee. The employer shall continue these quarterly measurements until at least two consecutive measurements taken at least seven days apart, are below the action level, and thereafter the employer may discontinue monitoring for that employee.

(ii) If the monitoring required by this section reveals employee exposure to be at or above the action level but below the permissible exposure limits, the employer shall repeat such monitoring for each such employee at least quarterly.

(iii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer shall repeat these determinations for each such employee at least monthly. The employer shall continue these monthly measurements until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limits, and thereafter the employer shall monitor at least quarterly.

(d) Additional monitoring. Whenever there has been a production, process, control or personnel change which may

result in new or additional exposure to AN, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to AN, additional monitoring which complies with this subsection shall be conducted.

(e) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limits, the employer shall include in the written notice a statement that the permissible exposure limits were exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement of employee exposures shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for concentrations of AN at or above the permissible exposure limits, and plus or minus 35 percent for concentrations of AN between the action level and the permissible exposure limits.

(g) Weekly survey of operations involving liquid AN. In addition to monitoring of employee exposures to AN as otherwise required by this subsection, the employer shall survey areas of operations involving liquid AN at least weekly to detect points where AN liquid or vapor are being released into the workplace. The survey shall employ an infra-red gas analyzer calibrated for AN, a multipoint gas chromatographic monitor, or comparable system for detection of AN. A listing of levels detected and areas of AN release, as determined from the survey, shall be posted prominently in the workplace, and shall remain posted until the next survey is completed.

(6) Regulated areas.

(a) The employer shall establish regulated areas where AN concentrations are in excess of the permissible exposure limits.

(b) Regulated areas shall be demarcated and segregated from the rest of the workplace, in any manner that minimizes the number of persons who will be exposed to AN.

(c) Access to regulated areas shall be limited to authorized persons or to persons otherwise authorized by the act or regulations issued pursuant thereto.

(d) The employer shall assure that in the regulated area, food or beverages are not present or consumed, smoking products are not present or used, and cosmetics are not applied, (except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsections (13)(a)-(13)(c) of this section.

(7) Methods of compliance.

(a) Engineering and work practice controls.

(i) The employer shall institute engineering or work practice controls to reduce and maintain employee exposures to AN, to or below the permissible exposure limits, except to the extent that the employer establishes that such controls are not feasible.

(ii) Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposures to or below the permissible exposure limits, the

employer shall nonetheless use them to reduce exposures to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection which complies with the requirements of subsection (8) of this section.

(b) Compliance program.

(i) The employer shall establish and implement a written program to reduce employee exposures to or below the permissible exposure limits solely by means of engineering and work practice controls, as required by subsection (7)(a) of this section.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation or process resulting in employee exposure to AN above the permissible exposure limits;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limits;

(D) A detailed schedule for the implementation of engineering or work practice controls; and

(E) Other relevant information.

(iii) The employer shall complete the steps set forth in the compliance program by the dates in the schedule.

(iv) Written plans for such a program shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, or any affected employee or representative.

(v) The plans required by this subsection shall be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Work operations, such as maintenance and repair activities or reactor cleaning, for which the employer establishes that engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limits;

(iv) In emergencies.

(b) Respirator program.

The employer must implement a respiratory protection program in accordance with chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07150 through 296-62-07156).

(c) Respirator selection. The employer must select the appropriate respirator from Table I of this subsection.

TABLE I

RESPIRATORY PROTECTION FOR ACRYLONITRILE (AN)

Concentration of AN or Condition of Use		Respirator Type	
(a)	Less than or equal to 25 x permissible exposure limits.	(i)	Any Type C supplied air respirator.

TABLE I

RESPIRATORY PROTECTION FOR ACRYLONITRILE (AN)			
Concentration of AN or Condition of Use			Respirator Type
(b) Less than or equal to 100 x permissible exposure limits.	(i)		Any supplied air respirator with full facepiece; or
	(ii)		Any self-contained breathing apparatus with full facepiece.
(c) Less than or equal to 250 x permissible exposure limits	(i)		Supplied air respirator in positive pressure mode with full facepiece, helmet, hood, or suit.
	(ii)		Open circuit self-contained breathing apparatus with full facepiece in positive pressure mode.
(d) Greater than 250 x permissible exposure limits.	(i)		Supplied air respirator with full facepiece and an auxiliary self-contained air supply, operated in pressure demand mode; or
	(ii)		Any self-contained breathing apparatus with full facepiece in positive pressure mode.
(e) Emergency entry into unknown concentration or firefighting	(i)		Any self-contained breathing apparatus with full facepiece in positive pressure mode.
	(ii)		Any organic vapor gas mask; or
(f) Escape.	(i)		Any self-contained breathing.
	(ii)		

(9) Emergency situations.

(a) Written plans.

(i) A written plan for emergency situations shall be developed for each workplace where AN is present. Appropriate portions of the plan shall be implemented in the event of an emergency.

(ii) The plan shall specifically provide that employees engaged in correcting emergency conditions shall be equipped as required in subsection (8) of this section until the emergency is abated.

(b) Alerting employees.

(i) Where there is the possibility of employee exposure to AN in excess of the ceiling limit due to the occurrence of an emergency, a general alarm shall be installed and maintained to promptly alert employees of such occurrences.

(ii) Employees not engaged in correcting the emergency shall be evacuated from the area and shall not be permitted to return until the emergency is abated.

(10) Protective clothing and equipment.

(a) Provision and use. Where eye or skin contact with liquid AN or PAN may occur, the employer shall provide at no cost to the employee, and assure that employees wear, appropriate protective clothing or other equipment in accordance with WAC 296-800-160 to protect any area of the body which may come in contact with liquid AN or PAN.

(b) Cleaning and replacement.

(i) The employer shall clean, launder, maintain, or replace protective clothing and equipment required by this subsection, as needed to maintain their effectiveness. In addition, the employer shall provide clean protective clothing and equipment at least weekly to each affected employee.

(ii) The employer shall assure that impermeable protective clothing which contacts or is likely to have contacted liquid AN shall be decontaminated before being removed by the employee.

(iii) The employer shall assure that AN- or PAN-contaminated protective clothing and equipment is placed and stored in closable containers which prevent dispersion of the AN or PAN outside the container.

(iv) The employer shall assure that an employee whose nonimpermeable clothing becomes wetted with liquid AN shall immediately remove that clothing and proceed to shower. The clothing shall be decontaminated before it is removed from the regulated area.

(v) The employer shall assure that no employee removes AN- or PAN-contaminated protective equipment or clothing from the change room, except for those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(vi) The employer shall inform any person who launders or cleans AN- or PAN-contaminated protective clothing or equipment of the potentially harmful effects of exposure to AN.

(vii) The employer shall assure that containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (16)(c)(ii) of this section, and that such labels remain affixed when such containers leave the employer's workplace.

(11) Housekeeping.

(a) All surfaces shall be maintained free of accumulations of liquid AN and of PAN.

(b) For operations involving liquid AN, the employer shall institute a program for detecting leaks and spills of liquid AN, including regular visual inspections.

(c) Where spills of liquid AN are detected, the employer shall assure that surfaces contacted by the liquid AN are decontaminated. Employees not engaged in decontamination activities shall leave the area of the spill, and shall not be permitted in the area until decontamination is completed.

(d) Liquids. Where AN is present in a liquid form, or as a resultant vapor, all containers or vessels containing AN shall be enclosed to the maximum extent feasible and tightly covered when not in use, with adequate provision made to avoid any resulting potential explosion hazard.

(e) Surfaces.

(i) Dry sweeping and the use of compressed air for the cleaning of floors and other surfaces where AN and PAN are found is prohibited.

(ii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust shall be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that AN is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect AN may not be used for other cleaning purposes and shall be labeled as prescribed by subsection (16)(c)(ii) of this section.

(iii) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(12) Waste disposal. AN and PAN waste, scrap, debris, bags, containers or equipment, shall be disposed of in sealed

bags or other closed containers which prevent dispersion of AN outside the container, and labeled as prescribed in subsection (16)(c)(ii) of this section.

(13) Hygiene facilities and practices. Where employees are exposed to airborne concentrations of AN above the permissible exposure limits, or where employees are required to wear protective clothing or equipment pursuant to subsection (11) of this section, or where otherwise found to be appropriate, the facilities required by WAC 296-24-12009 and 296-800-230 shall be provided by the employer for the use of those employees, and the employer shall assure that the employees use the facilities provided. In addition, the following facilities or requirements are mandated.

(a) Change rooms. The employer shall provide clean change rooms in accordance with WAC 296-24-12011.

(b) Showers.

(i) The employer shall provide shower facilities in accordance with WAC 296-24-12009(3).

(ii) In addition, the employer shall also assure that employees exposed to liquid AN and PAN shower at the end of the work shift.

(iii) The employer shall assure that, in the event of skin or eye exposure to liquid AN, the affected employee shall shower immediately to minimize the danger of skin absorption.

(c) Lunchrooms.

(i) Whenever food or beverages are consumed in the workplace, the employer shall provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees exposed to AN above the permissible exposure limits.

(ii) In addition, the employer shall also assure that employees exposed to AN above the permissible exposure limits wash their hands and face prior to eating.

(14) Medical surveillance.

(a) General.

(i) The employer shall institute a program of medical surveillance for each employee who is or will be exposed to AN above the action level. The employer shall provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee.

(b) Initial examinations. At the time of initial assignment, or upon institution of the medical surveillance program, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and medical history with special attention to skin, respiratory, and gastrointestinal systems, and those nonspecific symptoms, such as headache, nausea, vomiting, dizziness, weakness, or other central nervous system dysfunctions that may be associated with acute or chronic exposure to AN.

(ii) A physical examination giving particular attention to central nervous system, gastrointestinal system, respiratory system, skin and thyroid.

(iii) A 14" x 17" posteroanterior chest x-ray.

(iv) Further tests of the intestinal tract, including fecal occult blood screening, and proctosigmoidoscopy, for all workers 40 years of age or older, and for any other affected employees for whom, in the opinion of the physician, such testing is appropriate.

(c) Periodic examinations.

(i) The employer shall provide examinations specified in this subsection at least annually for all employees specified in subsection (14)(a) of this section.

(ii) If an employee has not had the examinations prescribed in subsection (14)(b) of this section within six months of termination of employment, the employer shall make such examination available to the employee upon such termination.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to AN, the employer shall provide appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level;

(iv) The employee's anticipated or estimated exposure level (for preplacement examinations or in cases of exposure due to an emergency);

(v) A description of any personal protective equipment used or to be used; and

(vi) Information from previous medical examinations of the affected employee, which is not otherwise available to the examining physician.

(f) Physician's written opinion.

(i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical examination and test performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of the employee's health from exposure to AN;

(C) Any recommended limitations upon the employee's exposure to AN or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to AN.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(15) Employee information and training.

(a) Training program.

(i) The employer shall institute a training program for all employees where there is occupational exposure to AN and shall assure their participation in the training program.

(ii) The training program shall be provided at the time of initial assignment, or upon institution of the training program, and at least annually thereafter, and the employer shall assure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C;

(B) The quantity, location, manner of use, release or storage of AN and the specific nature of operations which could result in exposure to AN, as well as any necessary protective steps;

(C) The purpose, proper use, and limitations of respirators and protective clothing;

(D) The purpose and a description of the medical surveillance program required by subsection (14) of this section;

(E) The emergency procedures developed, as required by subsection (9) of this section; and

(F) The engineering and work practice controls, their function and the employee's relationship thereto; and

(G) A review of this standard.

(b) Access to training materials.

(i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(16) Signs and labels.

(a) General.

(i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label, required by this subsection, which contradicts or detracts from such effects of the required sign or label.

(b) Signs.

(i) The employer shall post signs to clearly indicate all workplaces where AN concentrations exceed the permissible exposure limits. The signs shall bear the following legend:

DANGER
ACRYLONITRILE (AN)
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS REQUIRED

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(c) Labels.

(i) The employer shall assure that precautionary labels are affixed to all containers of AN, and to containers of PAN and products fabricated from PAN, except for those materials for which objective data is provided as to the conditions specified in subsection (1)(b) of this section. The employer shall assure that the labels remain affixed when the AN or PAN are sold, distributed or otherwise leave the employer's workplace.

(ii) The employer shall assure that the precautionary labels required by this subsection are readily visible and legible. The labels shall bear the following legend:

DANGER
CONTAINS ACRYLONITRILE (AN)
CANCER HAZARD

(17) Recordkeeping.

(a) Objective data for exempted operations.

(i) Where the processing, use, and handling of products fabricated from PAN are exempted pursuant to subsection (1)(b) of this section, the employer shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(ii) This record shall include the following information:

(A) The relevant condition in subsection (1)(b) upon which exemption is based;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and/or analysis of the material for the release of AN;

(D) A description of the operation exempted and how the data supports the exemption; and

(E) Other data relevant to the operations, materials, and processing covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure monitoring.

(i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used and the data relied upon to establish that the methods used meet the accuracy and precision requirements of subsection (5)(f) of this section;

(C) Type of respiratory protective devices worn, if any; and

(D) Name, social security number and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least 40 years or the duration of employment plus 20 years, whichever is longer.

(c) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record shall include:

(A) A copy of the physicians' written opinions;

(B) Any employee medical complaints related to exposure to AN;

(C) A copy of the information provided to the physician as required by subsection (14)(f) of this section; and

(D) A copy of the employee's medical and work history.

(iii) The employer shall assure that this record be maintained for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(d) Availability.

(i) The employer shall assure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) Records required by subdivisions (a) through (c) of this subsection 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. Records required by subdivision (a) of this section shall be provided in the same manner as exposure monitoring records.

(iii) The employer shall assure that employee medical records required to be maintained by this section, be made available, upon request, for examination and copying, to the affected employee or former employee, or to a physician designated by the affected employee, former employee, or designated representative.

(e) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained pursuant to this section, the employer shall transmit these records to the director.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(18) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to AN conducted pursuant to subsection (5) of this section.

(b) Observation procedures.

(i) Whenever observation of the monitoring of employee exposure to AN requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, assure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled:

(A) To receive an explanation of the measurement procedures;

(B) To observe all steps related to the measurement of airborne concentrations of AN performed at the place of exposure; and

(C) To record the results obtained.

(19) Appendices. The information contained in the appendices is not intended, by itself, to create any additional obligation not otherwise imposed, or to detract from any obligation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07336, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07336, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 88-11-021 (Order 88-04), § 296-62-07336, filed 5/11/88.]

WAC 296-62-07338 Appendix B—Substance technical guidelines for acrylonitrile. (1) Physical and chemical data.

(a) Substance identification:

(i) Synonyms: AN; VCN; vinyl cyanide; propenenitrile; cyanoethylene; Acrylon; Carbacryl; Fumigrain; Ventox.

(ii) Formula: $\text{CH}_2=\text{CHCN}$.

(iii) Molecular weight: 53.1.

(b) Physical data:

(i) Boiling point (760 mm Hg): 77.3°C (171°F);

(ii) Specific gravity (water = 1): 0.81 (at 20°C or 68°F);

(iii) Vapor density (air = 1 at boiling point of acrylonitrile): 1.83;

(iv) Melting point: -83°C (-117°F);

(v) Vapor pressure (@20°F): 83 mm Hg;

(vi) Solubility in water, percent by weight @20°C (68°F): 7.35;

(vii) Evaporation rate (Butyl Acetate = 1): 4.54; and

(viii) Appearance and odor: Colorless to pale yellow liquid with a pungent odor at concentrations above the permissible exposure level. Any detectable odor of acrylonitrile may indicate overexposure.

(2) Fire, explosion, and reactivity hazard data.

(a) Fire:

(i) Flash point: -1°C (30°F) (closed cup).

(ii) Autoignition temperature: 481°C (898°F).

(iii) Flammable limits air, percent by volume: Lower: 3, Upper: 17.

(iv) Extinguishing media: Alcohol foam, carbon dioxide, and dry chemical.

(v) Special fire-fighting procedures: Do not use a solid stream of water, since the stream will scatter and spread the fire. Use water to cool containers exposed to a fire.

(vi) Unusual fire and explosion hazards: Acrylonitrile is a flammable liquid. Its vapors can easily form explosive mixtures with air. All ignition sources must be controlled where acrylonitrile is handled, used, or stored in a manner that could create a potential fire or explosion hazard. Acrylonitrile vapors are heavier than air and may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which acrylonitrile is being handled.

(vii) For purposes of compliance with the requirements of WAC 296-800-300, acrylonitrile is classified as a class IB flammable liquid. For example, 7,500 ppm, approximately one-fourth of the lower flammable limit, would be considered to pose a potential fire and explosion hazard.

(viii) For purposes of compliance with WAC 296-24-59207, acrylonitrile is classified as a Class B fire hazard.

(ix) For purpose of compliance with WAC 296-24-95613, locations classified as hazardous due to the presence of acrylonitrile shall be Class I, Group D.

(b) Reactivity:

(i) Conditions contributing to instability: Acrylonitrile will polymerize when hot, and the additional heat liberated by the polymerization may cause containers to explode. Pure AN may self-polymerize, with a rapid build-up of pressure, resulting in an explosion hazard. Inhibitors are added to the commercial product to prevent self-polymerization.

(ii) Incompatibilities: Contact with strong oxidizers (especially bromine) and strong bases may cause fires and explosions. Contact with copper, copper alloys, ammonia, and amines may start serious decomposition.

(iii) Hazardous decomposition products: Toxic gases and vapors (such as hydrogen cyanide, oxides of nitrogen, and carbon monoxide) may be released in a fire involving acrylonitrile and certain polymers made from acrylonitrile.

(iv) Special precautions: Liquid acrylonitrile will attack some forms of plastics, rubbers, and coatings.

(3) Spill, leak, and disposal procedures.

(a) If acrylonitrile is spilled or leaked, the following steps should be taken:

(i) Remove all ignition sources.

(ii) The area should be evacuated at once and re-entered only after the area has been thoroughly ventilated and washed down with water.

(iii) If liquid acrylonitrile or polymer intermediate, collect for reclamation or absorb in paper, vermiculite, dry sand, earth, or similar material, or wash down with water into process sewer system.

(b) Persons not wearing protective equipment should be restricted from areas of spills or leaks until clean-up has been completed.

(c) Waste disposal methods: Waste materials shall be disposed of in a manner that is not hazardous to employees or to the general population. Spills of acrylonitrile and flushing of such spills shall be channeled for appropriate treatment or collection for disposal. They shall not be channeled directly into the sanitary sewer system. In selecting the method of waste disposal, applicable local, state, and federal regulations should be consulted.

(4) Monitoring and measurement procedures.

(a) Exposure above the permissible exposure limit:

(i) Eight-hour exposure evaluation: Measurements taken for the purpose of determining employee exposure under this section are best taken so that the average eight-hour exposure may be determined from a single eight-hour sample or two four-hour samples. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

(ii) Ceiling evaluation: Measurements taken for the purpose of determining employee exposure under this section must be taken during periods of maximum expected airborne concentrations of acrylonitrile in the employee's breathing zone. A minimum of three measurements should be taken on one work shift. The average of all measurements taken is an estimate of the employee's ceiling exposure.

(iii) Monitoring techniques: The sampling and analysis under this section may be performed by collecting the acrylonitrile vapor on charcoal adsorption tubes or other composition adsorption tubes, with subsequent chemical analysis. Sampling and analysis may also be performed by instruments such as real-time continuous monitoring systems, portable direct-reading instruments, or passive dosimeters. Analysis of resultant samples should be by gas chromatograph.

(iv) Appendix D lists methods of sampling and analysis which have been tested by NIOSH and OSHA for use with acrylonitrile. NIOSH and OSHA have validated modifications of NIOSH Method S-156 (see Appendix D) under labo-

ratory conditions for concentrations below 1 ppm. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his/her unique field conditions. The standard requires that methods of monitoring must be accurate, to a 95-percent confidence level, to ± 35 -percent for concentrations of AN at or above 2 ppm, and to ± 50 -percent for concentrations below 2 ppm. In addition to the methods described in Appendix D, there are numerous other methods available for monitoring for AN in the workplace. Details on these other methods have been submitted by various companies to the rulemaking record, and are available at the OSHA Docket Office.

(b) Since many of the duties relating to employee exposure are dependent on the results of monitoring and measuring procedures, employers shall assure that the evaluation of employee exposures is performed by a competent industrial hygienist or other technically qualified person.

(5) Protective clothing.

(a) Employees shall be provided with and required to wear appropriate protective clothing to prevent any possibility of skin contact with liquid AN. Because acrylonitrile is absorbed through the skin, it is important to prevent skin contact with liquid AN. Protective clothing shall include impermeable coveralls or similar full-body work clothing, gloves, head-coverings, as appropriate to protect areas of the body which may come in contact with liquid AN.

(b) Employers should ascertain that the protective garments are impermeable to acrylonitrile. Nonimpermeable clothing and shoes should not be allowed to become contaminated with liquid AN. If permeable clothing does become contaminated, it should be promptly removed, placed in a regulated area for removal of the AN, and not worn again until the AN is removed. If leather footwear or other leather garments become wet from acrylonitrile, they should be replaced and not worn again, due to the ability of leather to absorb acrylonitrile and hold it against the skin. Since there is no pain associated with the blistering which may result from skin contact with liquid AN, it is essential that the employee be informed of this hazard so that he or she can be protected.

(c) Any protective clothing which has developed leaks or is otherwise found to be defective shall be repaired or replaced. Clean protective clothing shall be provided to the employee as necessary to assure its protectiveness. Whenever impervious clothing becomes wet with liquid AN, it shall be washed down with water before being removed by the employee. Employees are also required to wear splash-proof safety goggles where there is any possibility of acrylonitrile contacting the eyes.

(6) Housekeeping and hygiene facilities. For purposes of complying with WAC 296-24-120, 296-800-220 and 296-800-230, the following items should be emphasized:

(a) The workplace should be kept clean, orderly, and in a sanitary condition. The employer is required to institute a leak and spill detection program for operations involving liquid AN in order to detect sources of fugitive AN emissions.

(b) Dry sweeping and the use of compressed air is unsafe for the cleaning of floors and other surfaces where liquid AN may be found.

(c) Adequate washing facilities with hot and cold water are to be provided, and maintained in a sanitary condition. Suitable cleansing agents are also to be provided to assure the effective removal of acrylonitrile from the skin.

(d) Change or dressing rooms with individual clothes storage facilities must be provided to prevent the contamination of street clothes with acrylonitrile. Because of the hazardous nature of acrylonitrile, contaminated protective clothing should be placed in a regulated area designated by the employer for removal of the AN before the clothing is laundered or disposed of.

(7) Miscellaneous precautions.

(a) Store acrylonitrile in tightly-closed containers in a cool, well-ventilated area and take necessary precautions to avoid any explosion hazard.

(b) High exposures to acrylonitrile can occur when transferring the liquid from one container to another.

(c) Nonsparking tools must be used to open and close metal acrylonitrile containers. These containers must be effectively grounded and bonded prior to pouring.

(d) Never store uninhibited acrylonitrile.

(e) Acrylonitrile vapors are not inhibited.

They may form polymers and clog vents of storage tanks.

(f) Use of supplied-air suits or other impervious coverings may be necessary to prevent skin contact with and provide respiratory protection from acrylonitrile where the concentration of acrylonitrile is unknown or is above the ceiling limit. Supplied-air suits should be selected, used, and maintained under the immediate supervision of persons knowledgeable in the limitations and potential life-endangering characteristics of supplied-air suits.

(g) Employers shall advise employees of all areas and operations where exposure to acrylonitrile could occur.

(8) Common operations. Common operations in which exposure to acrylonitrile is likely to occur include the following: Manufacture of the acrylonitrile monomer; synthesis of acrylic fibers, ABS, SAN, and nitrile barrier plastics and resins, nitrile rubber, surface coatings, specialty chemicals; use as a chemical intermediate; use as a fumigant; and in the cyanoethylation of cotton.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07338, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-11-021 (Order 88-04), § 296-62-07338, filed 5/11/88.]

WAC 296-62-07342 1,2-Dibromo-3-chloropropane.

(1) Scope and application.

(a) This section applies to occupational exposure to 1,2-dibromo-3-chloropropane (DBCP).

(b) This section does not apply to:

(i) Exposure to DBCP which results solely from the application and use of DBCP as a pesticide; or

(ii) The storage, transportation, distribution or sale of DBCP in intact containers sealed in such a manner as to prevent exposure to DBCP vapors or liquids, except for the requirements of subsections (11), (16) and (17) of this section.

(2) Definitions applicable to this section:

(a) "Authorized person" - any person specifically authorized by the employer and whose duties require the person to

be present in areas where DBCP is present; and any person entering this area as a designated representative of employees exercising an opportunity to observe employee exposure monitoring.

(b) "DBCP" - 1,2-dibromo-3-chloropropane, Chemical Abstracts Service Registry Number 96-12-8, and includes all forms of DBCP.

(c) "Director" - the director of labor and industries, or his authorized representative.

(d) "Emergency" - any occurrence such as, but not limited to equipment failure, rupture of containers, or failure of control equipment which may, or does, result in unexpected release of DBCP.

(3) Permissible exposure limits.

(a) Inhalation.

(i) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration in excess of 1 part DBCP per billion part of air (ppb) as an eight-hour time-weighted average.

(ii) Ceiling limit. The employer shall assure that no employee is exposed to an airborne concentration in excess of 5 parts DBCP per billion parts of air (ppb) as averaged over any 15 minutes during the working day.

(b) Dermal and eye exposure. The employer shall assure that no employee is exposed to eye or skin contact with DBCP.

(4) Notification of use. Within ten days of the effective date of this section or within ten days following the introduction of DBCP into the workplace, every employer who has a workplace where DBCP is present shall report the following information to the director for each such workplace:

(a) The address and location of each workplace in which DBCP is present;

(b) A brief description of each process or operation which may result in employee exposure to DBCP;

(c) The number of employees engaged in each process or operation who may be exposed to DBCP and an estimate of the frequency and degree of exposure that occurs;

(d) A brief description of the employer's safety and health program as it relates to limitation of employee exposure to DBCP.

(5) Regulated areas. The employer shall establish, within each place of employment, regulated areas wherever DBCP concentrations are in excess of the permissible exposure limit.

(a) The employer shall limit access to regulated areas to authorized persons.

(b) All employees entering or working in a regulated area shall wear respiratory protection in accordance with Table I.

(6) Exposure monitoring.

(a) General. Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to DBCP over an eight-hour period. (For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.)

(b) Initial. Each employer who has a place of employment in which DBCP is present shall monitor each workplace

and work operation to accurately determine the airborne concentrations of DBCP to which employees may be exposed.

(c) Frequency.

(i) If the monitoring required by this section reveals employee exposures to be below the permissible exposure limits, the employer shall repeat these determinations at least quarterly.

(ii) If the monitoring required by this section reveals employee exposure to be in excess of the permissible exposure limits, the employer shall repeat these determinations for each such employee at least monthly. The employer shall continue these monthly determinations until at least two consecutive measurements, taken at least seven days apart, are below the permissible exposure limit, thereafter the employer shall monitor at least quarterly.

(d) Additional. Whenever there has been a production process, control or personnel change which may result in any new or additional exposure to DBCP, or whenever the employer has any other reason to suspect a change which may result in new or additional exposure to DBCP, additional monitoring which complies with subsection (6) shall be conducted.

(e) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of results which represent the employee's exposure.

(ii) Whenever the results indicate that employee exposure exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action being taken to reduce exposure to or below the permissible exposure limits.

(f) Accuracy of measurement. The method of measurement shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for concentrations of DBCP at or above the permissible exposure limits.

(7) Methods of compliance.

(a) Priority of compliance methods. The employer shall institute engineering and work practice controls to reduce and maintain employee exposures to DBCP at or below the permissible exposure limit, except to the extent that the employer establishes that such controls are not feasible. Where feasible engineering and work practice controls are not sufficient to reduce employee exposures to within the permissible exposure limit, the employer shall nonetheless use them to reduce exposures to the lowest level achievable by these controls, and shall supplement them by use of respiratory protection.

(b) Compliance program.

(i) The employer shall establish and implement a written program to reduce employee exposure to DBCP to or below the permissible exposure limit solely by means of engineering and work practice controls as required by this section.

(ii) The written program shall include a detailed schedule for development and implementation of the engineering and work practice controls. These plans shall be revised at least every six months to reflect the current status of the program.

(iii) Written plans for these compliance programs shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the

director, and any affected employee or designated representative of employees.

(iv) The employer shall institute and maintain at least the controls described in his most recent written compliance program.

(8) Respiratory protection.

(a) General. For employees who are required to use respirators under this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Period necessary to install or implement feasible engineering and work-practice controls;

(ii) Maintenance and repair activities for which engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limit;

(iv) Emergencies.

(b) The employer must establish, implement, and maintain a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07150 through 296-62-07156).

(c) Respirator selection. The employer must select the appropriate respirator from Table I of this subsection.

TABLE I
RESPIRATORY PROTECTION FOR DBCP

Concentration Not Greater Than	Respirator Type
(a) 10 ppb:	(i) Any supplied-air respirator. (ii) Any self-contained breathing apparatus.
(b) 50 ppb:	(i) Any supplied-air respirator with full facepiece, helmet or hood. (ii) Any self-contained breathing apparatus with full facepiece.
(c) 250 ppb:	(i) A Type C supplied-air respirator operated in pressure-demand or other positive pressure or continuous flow mode.
(d) 500 ppb:	(i) A Type C supplied-air respirator with full facepiece operated in pressure-demand mode with full facepiece.
(e) Greater than 500 ppb or entry into unknown concentrations:	(i) A combination respirator which includes a Type C supplied-air respirator with full facepiece operated in pressure-demand mode and an auxiliary self-contained breathing apparatus. (ii) A self-contained breathing apparatus with full facepiece operated in pressure-demand mode.
(f) Fire fighting:	(i) A self-contained breathing apparatus with full facepiece operated in pressure-demand mode.

(9) Reserved.

(10) Emergency situations.

(a) Written plans.

(i) A written plan for emergency situations shall be developed for each workplace in which DBCP is present.

(ii) Appropriate portions of the plan shall be implemented in the event of an emergency.

(b) Employees engaged in correcting conditions shall be equipped as required in subsection (11) of this section until the emergency is abated.

(c) Evacuation. Employees not engaged in correcting the emergency shall be removed and restricted from the area and normal operations in the affected area shall not be resumed until the emergency is abated.

(d) Alerting employees. Where there is a possibility of employee exposure to DBCP due to the occurrence of an emergency, a general alarm shall be installed and maintained to promptly alert employees of such occurrences.

(e) Medical surveillance. For any employee exposed to DBCP in an emergency situation, the employer shall provide medical surveillance in accordance with subsection (14) of this section.

(f) Exposure monitoring.

(i) Following an emergency, the employer shall conduct monitoring which complies with subsection (6) of this section.

(ii) In workplaces not normally subject to periodic monitoring, the employer may terminate monitoring when two consecutive measurements indicate exposures below the permissible exposure limit.

(11) Protective clothing and equipment.

(a) Provision and use. Where eye or skin contact with liquid or solid DBCP may occur, employers shall provide at no cost to the employee, and assure that employees wear impermeable protective clothing and equipment in accordance with WAC 296-800-160 to protect the area of the body which may come in contact with DBCP.

(b) Cleaning and replacement.

(i) The employer shall clean, launder, maintain, or replace protective clothing and equipment required by this subsection to maintain their effectiveness. In addition, the employer shall provide clean protective clothing and equipment at least daily to each affected employee.

(ii) Removal and storage.

(A) The employer shall assure that employees remove DBCP contaminated work clothing only in change rooms provided in accordance with subsection (13) of this section.

(B) The employer shall assure that employees promptly remove any protective clothing and equipment which becomes contaminated with DBCP-containing liquids and solids. This clothing shall not be reworn until the DBCP has been removed from the clothing or equipment.

(C) The employer shall assure that no employee takes DBCP contaminated protective devices and work clothing out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(iii) The employer shall assure that DBCP-contaminated protective work clothing and equipment is placed and stored in closed containers which prevent dispersion of DBCP outside the container.

(iv) The employer shall inform any person who launders or cleans DBCP-contaminated protective clothing or equipment of the potentially harmful effects of exposure to DBCP.

(v) The employer shall assure that the containers of contaminated protective clothing and equipment which are to be removed from the workplace for any reason are labeled in accordance with subsection (16)(c) of this section.

(vi) The employer shall prohibit the removal of DBCP from protective clothing and equipment by blowing or shaking.

(12) Housekeeping.

(a) Surfaces.

(i) All surfaces shall be maintained free of accumulations of DBCP.

(ii) Dry sweeping and the use of air for the cleaning of floors and other surfaces where DBCP dust or liquids are found is prohibited.

(iii) Where vacuuming methods are selected, either portable units or a permanent system may be used.

(A) If a portable unit is selected, the exhaust shall be attached to the general workplace exhaust ventilation system or collected within the vacuum unit, equipped with high efficiency filters or other appropriate means of contaminant removal, so that DBCP is not reintroduced into the workplace air; and

(B) Portable vacuum units used to collect DBCP may not be used for other cleaning purposes and shall be labeled as prescribed by subsection (16)(c) of this section.

(iv) Cleaning of floors and other contaminated surfaces may not be performed by washing down with a hose, unless a fine spray has first been laid down.

(b) Liquids. Where DBCP is present in a liquid form, or as a resultant vapor, all containers or vessels containing DBCP shall be enclosed to the maximum extent feasible and tightly covered when not in use.

(c) Waste disposal. DBCP waste, scrap, debris, bags, containers or equipment, shall be disposed in sealed bags or other closed containers which prevent dispersion of DBCP outside the container.

(13) Hygiene facilities and practices.

(a) Change rooms. The employer shall provide clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment whenever employees are required to wear protective clothing and equipment in accordance with subsections (8), (9) and (11) of this section.

(b) Showers.

(i) The employer shall assure that employees working in the regulated area shower at the end of the work shift.

(ii) The employer shall assure that employees whose skin becomes contaminated with DBCP-containing liquids or solids immediately wash or shower to remove any DBCP from the skin.

(iii) The employer shall provide shower facilities in accordance with WAC 296-24-12009 (3)(c).

(c) Lunchrooms. The employer shall provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in regulated areas.

(d) Lavatories.

(i) The employer shall assure that employees working in the regulated area remove protective clothing and wash their hands and face prior to eating.

(ii) The employer shall provide a sufficient number of lavatory facilities which comply with WAC 296-800-230.

(e) Prohibition of activities in regulated areas. The employer shall assure that, in regulated areas, food or beverages are not present or consumed, smoking products and implements are not present or used, and cosmetics are not present or applied.

(14) Medical surveillance.

(a) General. The employer shall institute a program of medical surveillance for each employee who is or will be exposed, without regard to the use of respirators, to DBCP. The employer shall provide each such employee with an opportunity for medical examinations and tests in accordance with this subsection. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee.

(b) Frequency and content. At the time of initial assignment, annually thereafter, and whenever exposure to DBCP occurs, the employer shall provide a medical examination for employees who work in regulated areas, which includes at least the following:

(i) A complete medical and occupational history with emphasis on reproductive history.

(ii) A complete physical examination with emphasis on the genito-urinary tract, testicle size, and body habitus including the following tests:

- (A) Sperm count;
- (B) Complete urinalysis (U/A);
- (C) Complete blood count; and
- (D) Thyroid profile.

(iii) A serum specimen shall be obtained and the following determinations made by radioimmunoassay techniques utilizing National Institutes of Health (NIH) specific antigen or one of equivalent sensitivity:

- (A) Serum multiphasic analysis (SMA 12);
- (B) Serum follicle stimulating hormone (FSH);
- (C) Serum luteinizing hormone (LH); and
- (D) Serum estrogen (females).

(iv) Any other tests deemed appropriate by the examining physician.

(c) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to DBCP, the employer shall provide the employee with a medical examination which shall include those elements considered appropriate by the examining physician.

(d) Information provided to the physician. The employer shall provide the following information to the examining physician:

- (i) A copy of this standard and its appendices;
 - (ii) A description of the affected employee's duties as they relate to the employee's exposure;
 - (iii) The level of DBCP to which the employee is exposed; and
 - (iv) A description of any personal protective equipment used or to be used.
- (e) Physician's written opinion.

(i) For each examination under this section, the employer shall obtain and provide the employee with a written opinion from the examining physician which shall include:

(A) The results of the medical tests performed;

(B) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at an increased risk of material impairment of health from exposure to DBCP;

(C) Any recommended limitations upon the employee's exposure to DBCP or upon the use of protective clothing and equipment such as respirators; and

(D) A statement that the employee was informed by the physician of the results of the medical examination, and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure to DBCP.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(f) Emergency situations. If the employee is exposed to DBCP in an emergency situation, the employer shall provide the employee with a sperm count test as soon as practicable, or, if the employee is unable to produce a semen specimen, the hormone tests contained in subsection (14)(b) of this section. The employer shall provide these same tests three months later.

(15) Employee information and training.

(a) Training program.

(i) Within thirty days of the effective date of this standard, the employer shall institute a training program for all employees who may be exposed to DBCP and shall assure their participation in such training program.

(ii) The employer shall assure that each employee is informed of the following:

(A) The information contained in Appendices A, B and C;

(B) The quantity, location, manner of use, release or storage of DBCP and the specific nature of operations which could result in exposure to DBCP as well as any necessary protective steps;

(C) The purpose, proper use, limitations, and other training requirements covering respiratory protection as required in chapter 296-62 WAC, Part E;

(D) The purpose and description of the medical surveillance program required by subsection (14) of this section; and

(E) A review of this standard.

(b) Access to training materials.

(i) The employer shall make a copy of this standard and its appendices readily available to all affected employees.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(16) Signs and labels.

(a) General.

(i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label required by this subsection which contradicts or detracts from the required sign or label.

(b) Signs.

(i) The employer shall post signs to clearly indicate all work areas where DBCP may be present. These signs shall bear the legend:

DANGER
1,2-Dibromo-3-chloropropane
(Insert appropriate trade or common names)

CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

(ii) Where airborne concentrations of DBCP exceed the permissible exposure limits, the signs shall bear the additional legend:

RESPIRATOR REQUIRED

(c) Labels.

(i) The employer shall assure that precautionary labels are affixed to all containers of DBCP and of products containing DBCP, and that the labels remain affixed when the DBCP or products containing DBCP are sold, distributed, or otherwise leave the employer's workplace. Where DBCP or products containing DBCP are sold, distributed or otherwise leave the employer's workplace bearing appropriate labels required by EPA under the regulations in 40 CFR Part 162, the labels required by this subsection need not be affixed.

(ii) The employer shall assure that the precautionary labels required by this subsection are readily visible and legible. The labels shall bear the following legend:

DANGER
1,2-Dibromo-3-chloropropane
CANCER HAZARD

(17) Recordkeeping.

(a) Exposure monitoring.

(i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (6) of this section.

(ii) This record shall include:

(A) The dates, number, duration and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure;

(B) A description of the sampling and analytical methods used;

(C) Type of respiratory worn, if any; and

(D) Name, Social Security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least forty years or the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by subsection (14) of this section.

(ii) This record shall include:

(A) The name and Social Security number of the employee;

(B) A copy of the physician's written opinion;

(C) Any employee medical complaints related to exposure to DBCP;

(D) A copy of the information provided the physician as required by subsection (14)(c) of this section; and

(E) A copy of the employee's medical and work history.

(iii) The employer shall maintain this record for at least forty years or the duration of employment plus twenty years, whichever is longer.

(c) Availability.

(i) The employer shall assure that all records required to be maintained by this section be made available upon request to the director for examination and copying.

(ii) Employee exposure monitoring records and employee medical records required by this subsection 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.

(d) Transfer of records.

(i) If the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section for the prescribed period.

(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall transmit these records by mail to the director.

(iii) At the expiration of the retention period for the records required to be maintained under this section, the employer shall transmit these records by mail to the director.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(18) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to DBCP conducted under subsection (6) of this section.

(b) Observation procedures.

(i) Whenever observation of the measuring or monitoring of employee exposure to DBCP requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with personal protective clothing or equipment required to be worn by employees working in the area, assure the use of such clothing and equipment, and require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring or measurement, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the measurement of airborne concentrations of DBCP performed at the place of exposure; and

(C) Record the results obtained.

(19) Appendices. The information contained in the appendices is not intended, by itself, to create any additional

obligations not otherwise imposed or to detract from any existing obligation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07342, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07342, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 96-09-030, § 296-62-07342, filed 4/10/96, effective 6/1/96; 88-11-021 (Order 88-04), § 296-62-07342, filed 5/11/88.]

WAC 296-62-07347 Inorganic arsenic. (1) Scope and application. This section applies to all occupational exposures to inorganic arsenic except that this section does not apply to employee exposures in agriculture or resulting from pesticide application, the treatment of wood with preservatives or the utilization of arsenically preserved wood.

(2) Definitions.

(a) "Action level" - a concentration of inorganic arsenic of 5 micrograms per cubic meter of air ($5 \mu\text{g}/\text{m}^3$) averaged over any eight-hour period.

(b) "Authorized person" - any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under subsection (5) of this section.

(c) "Director" - the director of the department of labor and industries, or his/her designated representative.

(d) "Inorganic arsenic" - copper aceto-arsenite and all inorganic compounds containing arsenic except arsine, measured as arsenic (As).

(3) Permissible exposure limit. The employer shall assure that no employee is exposed to inorganic arsenic at concentrations greater than 10 micrograms per cubic meter of air ($10 \mu\text{g}/\text{m}^3$), averaged over any eight-hour period.

(4) Notification of use.

(a) Within sixty days after the introduction of inorganic arsenic into the workplace, every employer who is required to establish a regulated area in his/her workplaces shall report in writing to the department of labor and industries for each such workplace:

- (i) The address of each such workplace;
- (ii) The approximate number of employees who will be working in regulated areas; and
- (iii) A brief summary of the operations creating the exposure and the actions which the employer intends to take to reduce exposures.

(b) Whenever there has been a significant change in the information required by subsection (4)(a) of this section, the employer shall report the changes in writing within sixty days to the department of labor and industries.

(5) Exposure monitoring.

(a) General.

(i) Determinations of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to inorganic arsenic over an eight-hour period.

(ii) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(iii) The employer shall collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

(b) Initial monitoring. Each employer who has a workplace or work operation covered by this standard shall monitor each such workplace and work operation to accurately determine the airborne concentration of inorganic arsenic to which employees may be exposed.

(c) Frequency.

(i) If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated except as otherwise provided in subsection (5)(d) of this section.

(ii) If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to be above the permissible exposure limit, the employer shall repeat monitoring at least quarterly.

(iii) If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to be above the action level and below the permissible exposure limit the employee shall repeat monitoring at least every six months.

(iv) The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee until such time as any of the events in subsection (5)(d) of this section occur.

(d) Additional monitoring. Whenever there has been a production, process, control or personal change which may result in new or additional exposure to inorganic arsenic, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to inorganic arsenic, additional monitoring which complies with subsection (5) of this section shall be conducted.

(e) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposures.

(ii) Whenever the results indicate that the representative employee exposure exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure to or below the permissible exposure limit.

(f) Accuracy of measurement.

(i) The employer shall use a method of monitoring and measurement which has an accuracy (with a confidence level of 95 percent) of not less than plus or minus 25 percent for concentrations of inorganic arsenic greater than or equal to $10 \mu\text{g}/\text{m}^3$.

(ii) The employer shall use a method of monitoring and measurement which has an accuracy (with confidence level of 95 percent) of not less than plus or minus 35 percent for concentrations of inorganic arsenic greater than $5 \mu\text{g}/\text{m}^3$ but less than $10 \mu\text{g}/\text{m}^3$.

(6) Regulated area.

(a) Establishment. The employer shall establish regulated areas where worker exposures to inorganic arsenic,

without regard to the use of respirators, are in excess of the permissible limit.

(b) Demarcation. Regulated areas shall be demarcated and segregated from the rest of the workplace in any manner that minimizes the number of persons who will be exposed to inorganic arsenic.

(c) Access. Access to regulated areas shall be limited to authorized persons or to persons otherwise authorized by the Act or regulations issued pursuant thereto to enter such areas.

(d) Provision of respirators. All persons entering a regulated area shall be supplied with a respirator, selected in accordance with subsection (8)(c) of this section.

(e) Prohibited activities. The employer shall assure that in regulated areas, food or beverages are not consumed, smoking products, chewing tobacco and gum are not used and cosmetics are not applied, except that these activities may be conducted in the lunchrooms, change rooms and showers required under subsection (12) of this section. Drinking water may be consumed in the regulated area.

(7) Methods of compliance.

(a) Controls.

(i) The employer shall institute engineering and work practice controls to reduce exposures to or below the permissible exposure limit, except to the extent that the employer can establish that such controls are not feasible.

(ii) Where engineering and work practice controls are not sufficient to reduce exposures to or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest levels achievable by these controls and shall be supplemented by the use of respirators in accordance with subsection (8) of this section and other necessary personal protective equipment. Employee rotation is not required as a control strategy before respiratory protection is instituted.

(b) Compliance program.

(i) The employer shall establish and implement a written program to reduce exposures to or below the permissible exposure limit by means of engineering and work practice controls.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation in which inorganic arsenic is emitted; e.g., machinery used, material processed, controls in place, crew size, operating procedures and maintenance practices;

(B) Engineering plans and studies used to determine methods selected for controlling exposure to inorganic arsenic;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Monitoring data;

(E) A detailed schedule for implementation of the engineering controls and work practices that cannot be implemented immediately and for the adaption and implementation of any additional engineering and work practices necessary to meet the permissible exposure limit;

(F) Whenever the employer will not achieve the permissible exposure limit with engineering controls and work practices, the employer shall include in the compliance plan an analysis of the effectiveness of the various controls, shall

install engineering controls and institute work practices on the quickest schedule feasible, and shall include in the compliance plan and implement a program to minimize the discomfort and maximize the effectiveness of respirator use; and

(G) Other relevant information.

(iii) Written plans for such a program shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, any affected employee or authorized employee representatives.

(iv) The plans required by this subsection shall be revised and updated at least every six months to reflect the current status of the program.

(8) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Period necessary to install or implement feasible engineering or work-practice controls;

(ii) Work operations, such as maintenance and repair activities, in which the employer establishes that engineering and work-practice controls are not feasible;

(iii) Work operations for which engineering work-practice controls are not yet sufficient to reduce employee exposures to or below the permissible exposure limit;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must establish, implement, and maintain a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07150 through 296-62-07156).

(ii) If an employee exhibits breathing difficulty during fit testing or respirator use, they must be examined by a physician trained in pulmonary medicine to determine whether they can use a respirator while performing the required duty.

(c) Respirator selection.

(i) The employer must use Table I of this section to select the appropriate respirator or combination of respirators for inorganic arsenic compounds without significant vapor pressure, and Table II of this section to select the appropriate respirator or combination of respirators for inorganic arsenic compounds that have significant vapor pressure.

(ii) Where employee exposures exceed the permissible exposure limit for inorganic arsenic and also exceed the relevant limit for other gases (for example, sulfur dioxide), any air-purifying respirator provided to the employee as specified by this section must have a combination high-efficiency filter with an appropriate gas sorbent. (See footnote in Table I)

(iii) Employees required to use respirators may choose, and the employer must provide, a powered air-purifying respirator if it will provide proper protection. In addition, the employer must provide a combination dust and acid-gas respirator to employees who are exposed to gases over the relevant exposure limits.

TABLE I

RESPIRATORY PROTECTION FOR INORGANIC ARSENIC
PARTICULATE EXCEPT FOR THOSE WITH SIGNIFICANT VAPOR
PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use	Required Respirator
(i) Unknown or greater or lesser than 20,000 $\mu\text{g}/\text{m}^3$ (20 mg/m^3) firefighting.	(A) Any full facepiece self-contained or breathing apparatus operated in positive pressure mode.
(ii) Not greater than 20,000 $\mu\text{g}/\text{m}^3$ (20 mg/m^3)	(A) Supplied air respirator with full facepiece, hood, or helmet or suit and operated in positive pressure mode.
(iii) Not greater than 10,000 $\mu\text{g}/\text{m}^3$ (10 mg/m^3)	(A) Powered air-purifying respirators in all inlet face coverings with high-efficiency filters. ¹ (B) Half-mask supplied air respirators operated in positive pressure mode.
(iv) Not greater than 500 $\mu\text{g}/\text{m}^3$	(A) Full facepiece air-purifying respirator equipped with high-efficiency filter. ¹ (B) Any full facepiece supplied air respirator. (C) Any full facepiece self-contained breathing apparatus.
(v) Not greater than 100 $\mu\text{g}/\text{m}^3$	(A) Half-mask air-purifying respirator equipped with high-efficiency filter. ¹ (B) Any half-mask supplied air respirator.

¹High-efficiency filter-99.97 pct efficiency against 0.3 micrometer monodisperse diethyl-hexyl phthalate (DOP) particles.

TABLE II

RESPIRATORY PROTECTION FOR INORGANIC ARSENICALS
(SUCH AS ARSENIC TRICHLORIDE² AND ARSENIC PHOSPHIDE)
WITH SIGNIFICANT VAPOR PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use	Required Respirator
(i) Unknown or greater or lesser than 20,000 $\mu\text{g}/\text{m}^3$ (20 mg/m^3) or firefighting.	(A) Any full facepiece contained breathing apparatus operated in positive pressure mode.

Concentration of Inorganic Arsenic (as As) or Condition of Use

Concentration of Inorganic Arsenic (as As) or Condition of Use	Required Respirator
(ii) Not greater than 20,000 $\mu\text{g}/\text{m}^3$ (20 mg/m^3)	(A) Supplied air respirator with full facepiece hood, or helmet or suit and operated in positive pressure mode.
(iii) Not greater than 10,000 $\mu\text{g}/\text{m}^3$ (10 mg/m^3)	(A) Half-mask ² supplied air respirator operated in positive pressure mode.
(iv) Not greater than 500 $\mu\text{g}/\text{m}^3$	(A) Front or back mounted gas mask equipped with high-efficiency filter ¹ and acid gas canister. (B) Any full facepiece supplied air respirator. (C) Any full facepiece self-contained breathing apparatus.
(v) Not greater than 100 $\mu\text{g}/\text{m}^3$	(A) Half-mask ² air-purifying respirator equipped with high-efficiency filter ¹ and acid gas cartridge. (B) Any half-mask supplied air respirator.

¹High efficiency filter-99.97 pct efficiency against 0.3 micrometer monodisperse diethyl-hexyl phthalate (DOP) particles.

²Half-mask respirators shall not be used for protection against arsenic trichloride, as it is rapidly absorbed through the skin.

(9) **Reserved.**

(10) Protective work clothing and equipment.

(a) Provision and use. Where the possibility of skin or eye irritation from inorganic arsenic exists, and for all workers working in regulated areas, the employer shall provide at no cost to the employee and assure that employees use appropriate and clean protective work clothing and equipment such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, and shoes or coverlets;

(iii) Face shields or vented goggles when necessary to prevent eye irritation, which comply with the requirements of WAC 296-800-160.

(iv) Impervious clothing for employees subject to exposure to arsenic trichloride.

(b) Cleaning and replacement.

(i) The employer shall provide the protective clothing required in subsection (10)(a) of this section in a freshly laundered and dry condition at least weekly, and daily if the employee works in areas where exposures are over 100 $\mu\text{g}/\text{m}^3$ of inorganic arsenic or in areas where more frequent washing is needed to prevent skin irritation.

(ii) The employer shall clean, launder, or dispose of protective clothing required by subsection (10)(a) of this section.

(iii) The employer shall repair or replace the protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change rooms prescribed in subsection (13)(a) of this section.

(v) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of inorganic arsenic outside the container.

(vi) The employer shall inform in writing any person who cleans or launders clothing required by this section, of the potentially harmful affects including the carcinogenic effects of exposure to inorganic arsenic.

(vii) The employer shall assure that the containers of contaminated protective clothing and equipment in the workplace or which are to be removed from the workplace are labeled as follows:

Caution: Clothing contaminated with inorganic arsenic; do not remove dust by blowing or shaking. Dispose of inorganic arsenic contaminated wash water in accordance with applicable local, state, or federal regulations.

(viii) The employer shall prohibit the removal of inorganic arsenic from protective clothing or equipment by blowing or shaking.

(11) Housekeeping.

(a) Surfaces. All surfaces shall be maintained as free as practicable of accumulations of inorganic arsenic.

(b) Cleaning floors. Floors and other accessible surfaces contaminated with inorganic arsenic may not be cleaned by the use of compressed air, and shoveling and brushing may be used only where vacuuming or other relevant methods have been tried and found not to be effective.

(c) Vacuuming. Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner to minimize the reentry of inorganic arsenic into the workplace.

(d) Housekeeping plan. A written housekeeping and maintenance plan shall be kept which shall list appropriate frequencies for carrying out housekeeping operations, and for cleaning and maintaining dust collection equipment. The plan shall be available for inspection by the director.

(e) Maintenance of equipment. Periodic cleaning of dust collection and ventilation equipment and checks of their effectiveness shall be carried out to maintain the effectiveness of the system and a notation kept of the last check of effectiveness and cleaning or maintenance.

(12) **Reserved.**

(13) Hygiene facilities and practices.

(a) Change rooms. The employer shall provide for employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic, clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment in accordance with WAC 296-24-12011.

(b) Showers.

(i) The employer shall assure that employees working in regulated areas or subject to the possibility of skin or eye irri-

tation from inorganic arsenic shower at the end of the work shift.

(ii) The employer shall provide shower facilities in accordance with WAC 296-24-12009(3).

(c) Lunchrooms.

(i) The employer shall provide for employees working in regulated areas, lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in regulated areas.

(ii) The employer shall assure that employees working in the regulated area or subject to the possibility of skin or eye irritation from exposure to inorganic arsenic wash their hands and face prior to eating.

(d) Lavatories. The employer shall provide lavatory facilities which comply with WAC 296-800-230.

(e) Vacuuming clothes. The employer shall provide facilities for employees working in areas where exposure, without regard to the use of respirators, exceeds $100 \mu\text{g}/\text{m}^3$ to vacuum their protective clothing and clean or change shoes worn in such areas before entering change rooms, lunchrooms or shower rooms required by subsection (10) of this section and shall assure that such employees use such facilities.

(f) Avoidance of skin irritation. The employer shall assure that no employee is exposed to skin or eye contact with arsenic trichloride, or to skin or eye contact with liquid or particulate inorganic arsenic which is likely to cause skin or eye irritation.

(14) Medical surveillance.

(a) General.

(i) Employees covered. The employer shall institute a medical surveillance program for the following employees:

(A) All employees who are or will be exposed above the action level, without regard to the use of respirators, at least thirty days per year; and

(B) All employees who have been exposed above the action level, without regard to respirator use, for thirty days or more per year for a total of ten years or more of combined employment with the employer or predecessor employers prior to or after the effective date of this standard. The determination of exposures prior to the effective date of this standard shall be based upon prior exposure records, comparison with the first measurements taken after the effective date of this standard, or comparison with records of exposures in areas with similar processes, extent of engineering controls utilized and materials used by that employer.

(ii) Examination by physician. The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

(b) Initial examinations. For employees initially covered by the medical provisions of this section, or thereafter at the time of initial assignment to an area where the employee is likely to be exposed over the action level at least thirty days per year, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements:

(i) A work history and a medical history which shall include a smoking history and the presence and degree of respiratory symptoms such as breathlessness, cough, sputum production and wheezing.

(ii) A medical examination which shall include at least the following:

(A) A 14" by 17" posterior-anterior chest x-ray and International Labor Office UICC/Cincinnati (ILO U/C) rating;

(B) A nasal and skin examination; and

(C) Other examinations which the physician believes appropriate because of the employee's exposure to inorganic arsenic or because of required respirator use.

(c) Periodic examinations.

(i) The employer shall provide the examinations specified in subsection (14)(b)(i) and (ii)(A), (B) and (C) of this section at least annually for covered employees who are under forty-five years of age with fewer than ten years of exposure over the action level without regard to respirator use.

(ii) The employer shall provide the examinations specified in subsection (14)(b)(i) and (ii)(B) and (C) of this section at least semi-annually, and the x-ray requirements specified in subsection (14)(b)(ii)(A) of this section at least annually, for other covered employees.

(iii) Whenever a covered employee has not taken the examinations specified in subsection (14)(b)(i) and (ii)(B) and (C) of this section within six months preceding the termination of employment, the employer shall provide such examinations to the employee upon termination of employment.

(d) Additional examinations. If the employee for any reason develops signs or symptoms commonly associated with exposure to inorganic arsenic the employer shall provide an appropriate examination and emergency medical treatment.

(e) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's representative exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(f) Physician's written opinion.

(i) The employer shall obtain a written opinion from the examining physician which shall include:

(A) The results of the medical examination and tests performed;

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to inorganic arsenic;

(C) Any recommended limitations upon the employee's exposure to inorganic arsenic or upon the use of protective clothing or equipment such as respirators; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The employer shall instruct the physician not to reveal in the written opinion specific findings or diagnoses unrelated to occupational exposure.

(iii) The employer shall provide a copy of the written opinion to the affected employee.

(15) Employee information and training.

(a) Training program.

(i) The employer shall institute a training program for all employees who are subject to exposure to inorganic arsenic above the action level without regard to respirator use, or for whom there is the possibility of skin or eye irritation from inorganic arsenic. The employer shall assure that those employees participate in the training program.

(ii) The training program shall be provided for employees covered by this provision, at the time of initial assignment for those subsequently covered by this provision, and shall be repeated at least quarterly for employees who have optional use of respirators and at least annually for other covered employees thereafter, and the employer shall assure that each employee is informed of the following:

(A) The information contained in Appendix A;

(B) The quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations which could result in exposure to inorganic arsenic as well as any necessary protective steps;

(C) The purpose, proper use, and limitation of respirators;

(D) The purpose and a description of medical surveillance program as required by subsection (14) of this section;

(E) The engineering controls and work practices associated with the employee's job assignment; and

(F) A review of this standard.

(b) Access to training materials.

(i) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(16) Signs and labels.

(a) General.

(i) The employer may use labels or signs required by other statutes, regulations, or ordinances in addition to, or in combination with, signs and labels required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign or label required by this subsection which contradicts or detracts from the meaning of the required sign or label.

(b) Signs.

(i) The employer shall post signs demarcating regulated areas bearing the legend:

DANGER

INORGANIC ARSENIC

CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

NO SMOKING OR EATING

RESPIRATOR REQUIRED

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(c) Labels. The employer shall apply precautionary labels to all shipping and storage containers of inorganic arsenic, and to all products containing inorganic arsenic except when the inorganic arsenic in the product is bound in such a manner so as to make unlikely the possibility of airborne exposure to inorganic arsenic. (Possible examples of products not requiring labels are semiconductors, light emitting diodes and glass.) The label shall bear the following legend:

DANGER

CONTAINS INORGANIC ARSENIC

CANCER HAZARD

HARMFUL IF INHALED OR SWALLOWED

USE ONLY WITH ADEQUATE
VENTILATION
OR RESPIRATORY PROTECTION

(17) Recordkeeping.

(a) Exposure monitoring.

(i) The employer shall establish and maintain an accurate record of all monitoring required by subsection (5) of this section.

(ii) This record shall include:

(A) The date(s), number, duration location, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The purpose, proper use, limitations, and other training requirements covering respiratory protection as required in chapter 296-62 WAC, Part E;

(D) Name, Social Security number, and job classification of the employees monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) The environmental variables that could affect the measurement of the employee's exposure.

(iii) The employer shall maintain these monitoring records for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (14) of this section.

(ii) This record shall include:

(A) The name, Social Security number, and description of duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to inorganic arsenic.

(iii) The employer shall in addition keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under subsection (14) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information;

(C) The initial x-ray;

(D) The x-rays for the most recent five years; and

(E) Any x-rays with a demonstrated abnormality and all subsequent x-rays.

(iv) The employer shall maintain or assure that the physician maintains those medical records for at least forty years, or for the duration of employment, plus twenty years, whichever is longer.

(c) Availability.

(i) The employer shall make available upon request all records required to be maintained by subsection (17) of this section to the director for examination and copying.

(ii) Records required by this subsection 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.

(iii) The employer shall make available upon request an employee's medical records and exposure records representative of that employee's exposure required to be maintained by subsection (17) of this section to the affected employee or former employee or to a physician designated by the affected employee or former employee.

(d) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained by this section for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if he requests them within that period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(18) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to inorganic arsenic conducted pursuant to subsection (5) of this section.

(b) Observation procedures.

(i) Whenever observation of the monitoring of employee exposure to inorganic arsenic requires entry into an area where the use of respirators, protective clothing, or equipment is required, the employer shall provide the observer with and assure the use of such respirators, clothing, and such equipment, and shall require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled to;

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of inorganic arsenic performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(19) Appendices. The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07347, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07347, filed 8/17/99, effective 12/1/99; 99-10-071, § 296-62-07347, filed 5/4/99, effective 9/1/99; 98-02-030, § 296-62-07347, filed 12/31/97, effective 1/31/98. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-62-07347, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-62-07347, filed 8/27/81; 81-16-015 (Order 81-20), § 296-62-07347, filed 7/27/81; 79-08-115 (Order 79-9), § 296-62-07347, filed 7/31/79; 79-02-037 (Order 79-1), § 296-62-07347, filed 1/23/79.]

WAC 296-62-07367 Respiratory protection and personal protective equipment. (1) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of WAC 296-62-07355 through 296-62-07389. Respirators must be used during:

(a) Periods necessary to install or implement feasible engineering and work-practice controls;

(b) Work operations, such as maintenance and repair activities, vessel cleaning, or other activities, for which engineering and work-practice controls are not feasible;

(c) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the TWA or excursion limit;

(d) Emergencies.

(2) Respirator program. The employer must establish, implement, and maintain a respiratory protection program as required in chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07150 through 296-62-07156).

(3) Respirator selection. The employer must select the appropriate respirator from Table 1 of this section.

Table 1.—Minimum Requirements for Respiratory Protection for Airborne EtO

Condition of use or concentration of airborne EtO (ppm)	Minimum required respirator
Equal to or less than 50	(a) Full facepiece respirator with EtO approved canister, front-or back-mounted.
Equal to or less than 2,000	(a) Positive-pressure supplied air respirator, equipped with full facepiece, hood or helmet, or (b) Continuous-flow supplied air respirator (positive pressure) equipped with hood, helmet or suit.
Concentration above 2,000 or unknown concentration (such as in emergencies)	(a) Positive-pressure self-contained breathing apparatus (SCBA), equipped with full facepiece, or (b) Positive-pressure full facepiece supplied air respirator equipped with an auxiliary positive-pressure self-contained breathing apparatus.
Fire fighting	(a) Positive pressure self-contained breathing apparatus equipped with full facepiece.
Escape	(a) Any respirator described above.

Note: Respirators approved for use in higher concentrations are permitted to be used in lower concentrations.

(4) Protective clothing and equipment. Where employees could have eye or skin contact with EtO or EtO solutions, the employer must select and provide, at no cost to the employee, appropriate protective clothing or other equipment in accordance with WAC 296-800-160, and to protect any area of the body that may come in contact with liquid EtO or EtO in solution, and must ensure that the employee wears the protective clothing and equipment provided.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07367, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07367, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-62-07367, filed 9/30/94, effective 11/20/94; 88-23-054 (Order 88-25), § 296-62-07367, filed 11/14/88; 87-24-051 (Order 87-24), § 296-62-07367, filed 11/30/87.]

WAC 296-62-07373 Communication of EtO hazards to employees. (1) Signs and labels.

(a) The employer shall post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER
ETHYLENE OXIDE
CANCER HAZARD AND REPRODUCTIVE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING MAY BE REQUIRED
TO BE WORN IN THIS AREA

(b) The employer shall ensure that precautionary labels are affixed to all containers of EtO whose contents are capable of causing employee exposure at or above the action level

or whose contents may reasonably be foreseen to cause employee exposure above the excursion limit, and that the labels remain affixed when the containers of EtO leave the workplace. For the purpose of this subsection, reaction vessels, storage tanks, and pipes or piping systems are not considered to be containers. The labels shall comply with the requirements of WAC 296-800-170 of WISHA's chemical hazard communication standard, and shall include the following legend:

(i)

DANGER
CONTAINS ETHYLENE OXIDE
CANCER HAZARD AND REPRODUCTIVE HAZARD; and

(ii) A warning statement against breathing airborne concentrations of EtO.

(c) The labeling requirements under WAC 296-62-07355 through 296-62-07389 do not apply where EtO is used as a pesticide, as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when it is labeled pursuant to that act and regulations issued under that act by the Environmental Protection Agency.

(2) Material safety data sheets. Employers who are manufacturers or importers of EtO shall comply with the requirements regarding development of material safety data sheets as specified in WAC 296-62-05413 of the hazard communication standard.

(3) Information and training.

(a) The employer shall provide employees who are potentially exposed to EtO at or above the action level or above the excursion limit with information and training on EtO at the time of initial assignment and at least annually thereafter.

(b) Employees shall be informed of the following:

(i) The requirements of WAC 296-62-07353 through 296-62-07389 with an explanation of its contents, including Appendices A and B;

(ii) Any operations in their work area where EtO is present;

(iii) The location and availability of the written EtO final rule; and

(iv) The medical surveillance program required by WAC 296-62-07371 with an explanation of the information in Appendix C.

(c) Employee training shall include at least:

(i) Methods and observations that may be used to detect the presence or release of EtO in the work area (such as monitoring conducted by the employer, continuous monitoring devices, etc.);

(ii) The physical and health hazards of EtO;

(iii) The measures employees can take to protect themselves from hazards associated with EtO exposure, including specific procedures the employer has implemented to protect employees from exposure to EtO, such as work practices, emergency procedures, and personal protective equipment to be used; and

(iv) The details of the hazard communication program developed by the employer, including an explanation of the

labeling system and how employees can obtain and use the appropriate hazard information.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07373, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-62-07373, filed 11/14/88; 87-24-051 (Order 87-24), § 296-62-07373, filed 11/30/87.]

WAC 296-62-07385 Appendix B—Substance technical guidelines for ethylene oxide (nonmandatory). (1)

Physical and chemical data:

(a) Substance identification:

(i) Synonyms: Dihydrooxirene, dimethylene oxide, EO, 1,2-epoxyethane, EtO, ETO, oxacyclopropane, oxane, oxidoethane, alpha/beta-oxidoethane, oxiran, oxirane.

(ii) Formula: (C₂H₄O).

(iii) Molecular weight: 44.06.

(b) Physical data:

(i) Boiling point (760 mm Hg): 10.70°C (51.3°F);

(ii) Specific gravity (water = 1): 0.87 (at 20°C or 68°F);

(iii) Vapor density (air = 1): 1.49;

(iv) Vapor pressure (at 20°C): 1,095 mm Hg;

(v) Solubility in water: Complete;

(vi) Appearance and odor: Colorless liquid; gas at temperature above 10.7°F or 51.3°C with ether-like odor above 700 ppm.

(2) Fire, explosion, and reactivity hazard data:

(a) Fire:

(i) Flash point; Less than 0°F (open cup);

(ii) Stability: Decomposes violently at temperatures above 800°F;

(iii) Flammable limits in air, percent by volume: Lower: 3, Upper: 100;

(iv) Extinguishing media: Carbon dioxide for small fires, polymer or alcohol foams for large fires;

(v) Special fire fighting procedures: Dilution of ethylene oxide with 23 volumes of water renders it nonflammable;

(vi) Unusual fire and explosion hazards: Vapors of EtO will burn without the presence of air or other oxidizers. EtO vapors are heavier than air and may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which EtO is being used.

(vii) For purposes of compliance with the requirements of WAC 296-24-330, EtO is classified as a flammable gas. For example, 7,500 ppm, approximately one-fourth of the lower flammable limit, would be considered to pose a potential fire and explosion hazard.

(viii) For purposes of compliance with WAC 296-24-585, EtO is classified as a Class B fire hazard.

(ix) For purpose of compliance with chapter 296-24 WAC Part L, and WAC 296-800-280, locations classified as hazardous due to the presence of EtO shall be Class I.

(b) Reactivity:

(i) Conditions contributing to instability: EtO will polymerize violently if contaminated with aqueous alkalies, amines, mineral acids, metal chlorides, or metal oxides. Violent decomposition will also occur at temperatures above 800°F;

(ii) Incompatibilities: Alkalines and acids;

(iii) Hazardous decomposition products: Carbon monoxide and carbon dioxide.

(3) Spill, leak, and disposal procedures:

(a) If EtO is spilled or leaked, the following steps should be taken:

(i) Remove all ignition sources.

(ii) The area should be evacuated at once and re-entered only after the area has been thoroughly ventilated and washed down with water.

(b) Persons not wearing appropriate protective equipment should be restricted from areas of spills or leaks until cleanup has been completed.

(c) Waste disposal method: Waste material should be disposed of in a manner that is not hazardous to employees or to the general population. In selecting the method of waste disposal, applicable local, state, and federal regulations should be consulted.

(4) Monitoring and measurement procedures:

(a) Exposure above the permissible exposure limit:

(i) Eight-hour exposure evaluation: Measurements taken for the purpose of determining employee exposure under this section are best taken with consecutive samples covering the full shift. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee.)

(ii) Monitoring techniques: The sampling and analysis under this section may be performed by collection of the EtO vapor on charcoal adsorption tubes or other composition adsorption tubes, with subsequent chemical analysis. Sampling and analysis may also be performed by instruments such as real time continuous monitoring systems, portable direct reading instruments, or passive dosimeters as long as measurements taken using these methods accurately evaluate the concentration of EtO in employees' breathing zones.

(iii) Appendix D describes the validated method of sampling and analysis which has been tested by OSHA for use with EtO. Other available methods are also described in Appendix D. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his/her unique field conditions. The standard requires that the method of monitoring should be accurate, to a 95 percent confidence level, to plus or minus 25 percent for concentrations of EtO at 1 ppm, and to plus or minus 35 percent for concentrations at 0.5 ppm. In addition to the method described in Appendix D, there are numerous other methods available for monitoring for EtO in the workplace. Details on these other methods have been submitted by various companies to the rulemaking record, and are available at the OSHA Docket Office.

(b) Since many of the duties relating to employee exposure are dependent on the results of measurement procedures, employers should assure that the evaluation of employee exposures is performed by a technically qualified person.

(5) Protective clothing and equipment:

(a) Employees should be provided with and be required to wear appropriate protective clothing wherever there is significant potential for skin contact with liquid EtO or EtO-containing solutions. Protective clothing shall include impermeable coveralls or similar full-body work clothing, gloves, and head coverings, as appropriate to protect areas of the

body which may come in contact with liquid EtO or EtO-containing solutions.

(b) Employers should ascertain that the protective garments are impermeable to EtO. Permeable clothing, including items made of rubber, and leather shoes should not be allowed to become contaminated with liquid EtO. If permeable clothing does become contaminated, it should be immediately removed, while the employer is under an emergency deluge shower. If leather footwear or other leather garments become wet from EtO they should be discarded and not be worn again, because leather absorbs EtO and holds it against the skin.

(c) Any protective clothing that has been damaged or is otherwise found to be defective should be repaired or replaced. Clean protective clothing should be provided to the employee as necessary to assure employee protection. Whenever impermeable clothing becomes wet with liquid EtO, it should be washed down with water before being removed by the employee. Employees are also required to wear splash-proof safety goggles where there is any possibility of EtO contacting the eyes.

(6) Miscellaneous precautions:

(a) Store EtO in tightly closed containers in a cool, well-ventilated area and take all necessary precautions to avoid any explosion hazard.

(b) Nonsparking tools must be used to open and close metal containers. These containers must be effectively grounded and bonded.

(c) Do not incinerate EtO cartridges, tanks or other containers.

(d) Employers should advise employees of all areas and operations where exposure to EtO occurs.

(7) Common operations:

Common operations in which exposure to EtO is likely to occur include the following: (a) Manufacture of EtO, (b) surfactants, (c) ethanolamines, (d) glycol ethers, (e) specialty chemicals, and (f) use as a sterilant in the hospital, health product and spice industries.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07385, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-62-07385, filed 11/22/91, effective 12/24/91; 88-14-108 (Order 88-11), § 296-62-07385, filed 7/6/88; 87-24-051 (Order 87-24), § 296-62-07385, filed 11/30/87.]

WAC 296-62-07417 Protective work clothing and equipment.

(1) Provision and use. If an employee is exposed to airborne cadmium above the PEL or where skin or eye irritation is associated with cadmium exposure at any level, the employer shall provide at no cost to the employee, and assure that the employee uses, appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments. Protective work clothing and equipment includes, but is not limited to:

(a) Coveralls or similar full-body work clothing;

(b) Gloves, head coverings, and boots or foot coverings; and

(c) Face shields, vented goggles, or other appropriate protective equipment that complies with WAC 296-800-160.

(2) Removal and storage.

(a) The employer shall assure that employees remove all protective clothing and equipment contaminated with cadmium at the completion of the work shift and do so only in change rooms provided in accordance with WAC 296-62-07419(1).

(b) The employer shall assure that no employee takes cadmium-contaminated protective clothing or equipment from the workplace, except for employees authorized to do so for purposes of laundering, cleaning, maintaining, or disposing of cadmium contaminated protective clothing and equipment at an appropriate location or facility away from the workplace.

(c) The employer shall assure that contaminated protective clothing and equipment, when removed for laundering, cleaning, maintenance, or disposal, is placed and stored in sealed, impermeable bags or other closed, impermeable containers that are designed to prevent dispersion of cadmium dust.

(d) The employer shall assure that bags or containers of contaminated protective clothing and equipment that are to be taken out of the change rooms or the workplace for laundering, cleaning, maintenance, or disposal shall bear labels in accordance with WAC 296-62-07425(3).

(3) Cleaning, replacement, and disposal.

(a) The employer shall provide the protective clothing and equipment required by subsection (1) of this section in a clean and dry condition as often as necessary to maintain its effectiveness, but in any event at least weekly. The employer is responsible for cleaning and laundering the protective clothing and equipment required by this paragraph to maintain its effectiveness and is also responsible for disposing of such clothing and equipment.

(b) The employer also is responsible for repairing or replacing required protective clothing and equipment as needed to maintain its effectiveness. When rips or tears are detected while an employee is working they shall be immediately mended, or the worksuit shall be immediately replaced.

(c) The employer shall prohibit the removal of cadmium from protective clothing and equipment by blowing, shaking, or any other means that disperses cadmium into the air.

(d) The employer shall assure that any laundering of contaminated clothing or cleaning of contaminated equipment in the workplace is done in a manner that prevents the release of airborne cadmium in excess of the permissible exposure limit prescribed in WAC 296-62-07405.

(e) The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with cadmium of the potentially harmful effects of exposure to cadmium and that the clothing and equipment should be laundered or cleaned in a manner to effectively prevent the release of airborne cadmium in excess of the PEL.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07417, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-62-07417, filed 9/30/94, effective 11/20/94; 93-21-075 (Order 93-06), § 296-62-07417, filed 10/20/93, effective 12/1/93; 93-07-044 (Order 93-01), § 296-62-07417, filed 3/13/93, effective 4/27/93.]

WAC 296-62-07419 Hygiene areas and practices. (1)

General. For employees whose airborne exposure to cadmium is above the PEL, the employer shall provide clean

change rooms, handwashing facilities, showers, and lunchroom facilities that comply with WAC 296-24-120 and 296-800-230.

(2) Change rooms. The employer shall assure that change rooms are equipped with separate storage facilities for street clothes and for protective clothing and equipment, which are designed to prevent dispersion of cadmium and contamination of the employee's street clothes.

(3) Showers and handwashing facilities.

(a) The employer shall assure that employees who are exposed to cadmium above the PEL shower during the end of the work shift.

(b) The employer shall assure that employees whose airborne exposure to cadmium is above the PEL wash their hands and faces prior to eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics.

(4) Lunchroom facilities.

(a) The employer shall assure that the lunchroom facilities are readily accessible to employees, that tables for eating are maintained free of cadmium, and that no employee in a lunchroom facility is exposed at any time to cadmium at or above a concentration of 2.5 µg/m³.

(b) The employer shall assure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface cadmium has been removed from the clothing and equipment by HEPA vacuuming or some other method that removes cadmium dust without dispersing it.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07419, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-07-044 (Order 93-01), § 296-62-07419, filed 3/13/93, effective 4/27/93.]

WAC 296-62-07425 Communication of cadmium hazards to employees. (1) General.

In communications concerning cadmium hazards, employers shall comply with the requirements of WISHA's Chemical Hazard Communication Standard, WAC 296-800-170, including but not limited to the requirements concerning warning signs and labels, material safety data sheets (MSDS), and employee information and training. In addition, employers shall comply with the following requirements:

(2) Warning signs.

(a) Warning signs shall be provided and displayed in regulated areas. In addition, warning signs shall be posted at all approaches to regulated areas so that an employee may read the signs and take necessary protective steps before entering the area.

(b) Warning signs required by (a) of this subsection shall bear the following information:

DANGER CADMIUM CANCER HAZARD CAN CAUSE LUNG
AND KIDNEY DISEASE AUTHORIZED PERSONNEL ONLY
RESPIRATORS REQUIRED IN THIS AREA

(c) The employer shall assure that signs required by this subsection are illuminated, cleaned, and maintained as necessary so that the legend is readily visible.

(3) Warning labels.

(a) Shipping and storage containers containing cadmium, cadmium compounds, or cadmium contaminated

clothing, equipment, waste, scrap, or debris shall bear appropriate warning labels, as specified in (b) of this subsection.

(b) The warning labels shall include at least the following information:

DANGER CONTAINS CADMIUM CANCER HAZARD AVOID
CREATING DUST CAN CAUSE LUNG AND KIDNEY DISEASE

(c) Where feasible, installed cadmium products shall have a visible label or other indication that cadmium is present.

(4) Employee information and training.

(a) The employer shall institute a training program for all employees who are potentially exposed to cadmium, assure employee participation in the program, and maintain a record of the contents of such program.

(b) Training shall be provided prior to or at the time of initial assignment to a job involving potential exposure to cadmium and at least annually thereafter.

(c) The employer shall make the training program understandable to the employee and shall assure that each employee is informed of the following:

(i) The health hazards associated with cadmium exposure, with special attention to the information incorporated in WAC 296-62-07441, Appendix A;

(ii) The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposures above the PEL;

(iii) The engineering controls and work practices associated with the employee's job assignment;

(iv) The measures employees can take to protect themselves from exposure to cadmium, including modification of such habits as smoking and personal hygiene, and specific procedures the employer has implemented to protect employees from exposure to cadmium such as appropriate work practices, emergency procedures, and the provision of personal protective equipment;

(v) The purpose, proper selection, fitting, proper use, and limitations of protective clothing;

(vi) The purpose and a description of the medical surveillance program required by WAC 296-62-07423;

(vii) The contents of this section and its appendices;

(viii) The employee's rights of access to records under WAC 296-62-05213 and 296-800-170; and

(ix) The purpose, proper use, limitations, and other training requirements for respiratory protection as required in chapter 296-62 WAC, Part E.

(d) Additional access to information and training program and materials.

(i) The employer shall make a copy of this section and its appendices readily available without cost to all affected employees and shall provide a copy if requested.

(ii) The employer shall provide to the director, upon request, all materials relating to the employee information and the training program.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07425, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07425, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 93-21-075 (Order 93-06), § 296-62-07425, filed 10/20/93, effective

12/1/93; 93-07-044 (Order 93-01), § 296-62-07425, filed 3/13/93, effective 4/27/93.]

WAC 296-62-07460 Butadiene. (1) Scope and application.

(a) This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical Abstracts Service Registry No. 106-99-0, except as provided in (b) of this subsection.

(b)(i) Except for the recordkeeping provisions in subsection (13)(a) of this section, this section does not apply to the processing, use, or handling of products containing BD or to other work operations and streams in which BD is present where objective data are reasonably relied upon that demonstrate the work operation or the product or the group of products or operations to which it belongs may not reasonably be foreseen to release BD in airborne concentrations at or above the action level or in excess of the STEL under the expected conditions of processing, use, or handling that will cause the greatest possible release or in any plausible accident.

(ii) This section also does not apply to work operations, products or streams where the only exposure to BD is from liquid mixtures containing 0.1% or less of BD by volume or the vapors released from such liquids, unless objective data become available that show that airborne concentrations generated by such mixtures can exceed the action level or STEL under reasonably predictable conditions of processing, use or handling that will cause the greatest possible release.

(iii) Except for labeling requirements and requirements for emergency response, this section does not apply to the storage, transportation, distribution or sale of BD or liquid mixtures in intact containers or in transportation pipelines sealed in such a manner as to fully contain BD vapors or liquids.

(c) Where products or processes containing BD are exempted under (b) of this subsection, the employer shall maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in subsection (13)(a) of this section.

(2) Definitions: For the purpose of this section, the following definitions shall apply:

"Action level" means a concentration of airborne BD of 0.5 ppm calculated as an 8-hour time-weighted average.

"Director" means the director of the department of labor and industries, or authorized representatives.

"Authorized person" means any person specifically designated by the employer, whose duties require entrance into a regulated area, or a person entering such an area as a designated representative of employees to exercise the right to observe monitoring and measuring procedures under subsection (4)(h) of this section, or a person designated under the WISH Act or regulations issued under the WISH Act to enter a regulated area.

"1,3-Butadiene" means an organic compound with chemical formula $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$ that has a molecular weight of approximately 54.15 gm/mole.

"Business day" means any Monday through Friday, except those days designated as federal, state, local or company specific holidays.

"Complete blood count (CBC)" means laboratory tests performed on whole blood specimens and includes the fol-

lowing: White blood cell count (WBC), hematocrit (Hct), red blood cell count (RBC), hemoglobin (Hgb), differential count of white blood cells, red blood cell morphology, red blood cell indices, and platelet count.

"Day" means any part of a calendar day.

"Emergency situation" means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of BD.

"Employee exposure" means exposure of a worker to airborne concentrations of BD which would occur if the employee were not using respiratory protective equipment.

"Objective data" means monitoring data, or mathematical modelling or calculations based on composition, chemical and physical properties of a material, stream or product.

"Permissible exposure limits (PELs)" means either the 8-hour time-weighted average (8-hr TWA) exposure or the short-term exposure limit (STEL).

"Physician or other licensed health care professional" is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide one or more of the specific health care services required by (k) of this subsection.

"Regulated area" means any area where airborne concentrations of BD exceed or can reasonably be expected to exceed the 8-hour time-weighted average (8-hr TWA) exposure of 1 ppm or the short-term exposure limit (STEL) of 5 ppm for 15 minutes.

"This section" means this 1,3-butadiene standard.

(3) Permissible exposure limits (PELs).

(a) Time-weighted average (TWA) limit. The employer shall ensure that no employee is exposed to an airborne concentration of BD in excess of one part BD per million parts of air (ppm) measured as an eight (8)-hour time-weighted average.

(b) Short-term exposure limit (STEL). The employer shall ensure that no employee is exposed to an airborne concentration of BD in excess of five parts of BD per million parts of air (5 ppm) as determined over a sampling period of fifteen minutes.

(4) Exposure monitoring.

(a) General.

(i) Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 15-minute short-term exposures of each employee.

(ii) Representative 8-hour TWA employee exposure shall be determined on the basis of one or more samples representing full-shift exposure for each shift and for each job classification in each work area.

(iii) Representative 15-minute short-term employee exposures shall be determined on the basis of one or more samples representing 15-minute exposures associated with operations that are most likely to produce exposures above the STEL for each shift and for each job classification in each work area.

(iv) Except for the initial monitoring required under (b) of this subsection, where the employer can document that exposure levels are equivalent for similar operations on dif-

ferent work shifts, the employer need only determine representative employee exposure for that operation from the shift during which the highest exposure is expected.

(b) Initial monitoring.

(i) Each employer who has a workplace or work operation covered by this section, shall perform initial monitoring to determine accurately the airborne concentrations of BD to which employees may be exposed, or shall rely on objective data pursuant to subsection (1)(b)(i) of this section to fulfill this requirement.

(ii) Where the employer has monitored within two years prior to the effective date of this section and the monitoring satisfies all other requirements of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of (b)(i) of this subsection, provided that the conditions under which the initial monitoring was conducted have not changed in a manner that may result in new or additional exposures.

(c) Periodic monitoring and its frequency.

(i) If the initial monitoring required by (b) of this subsection reveals employee exposure to be at or above the action level but at or below both the 8-hour TWA limit and the STEL, the employer shall repeat the representative monitoring required by (a) of this subsection every twelve months.

(ii) If the initial monitoring required by (b) of this subsection reveals employee exposure to be above the 8-hour TWA limit, the employer shall repeat the representative monitoring required by (a)(ii) of this subsection at least every three months until the employer has collected two samples per quarter (each at least 7 days apart) within a two-year period, after which such monitoring must occur at least every six months.

(iii) If the initial monitoring required by (b) of this subsection reveals employee exposure to be above the STEL, the employer shall repeat the representative monitoring required by (a)(iii) of this subsection at least every three months until the employer has collected two samples per quarter (each at least 7 days apart) within a two-year period, after which such monitoring must occur at least every six months.

(iv) The employer may alter the monitoring schedule from every six months to annually for any required representative monitoring for which two consecutive measurements taken at least 7 days apart indicate that employee exposure has decreased to or below the 8-hour TWA, but is at or above the action level.

(d) Termination of monitoring.

(i) If the initial monitoring required by (b) of this subsection reveals employee exposure to be below the action level and at or below the STEL, the employer may discontinue the monitoring for employees whose exposures are represented by the initial monitoring.

(ii) If the periodic monitoring required by (c) of this subsection reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level and at or below the STEL, the employer may discontinue the monitoring for those employees who are represented by such monitoring.

(e) Additional monitoring.

(i) The employer shall institute the exposure monitoring required under subsection (4) of this section whenever there

has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures to BD or when the employer has any reason to suspect that a change may result in new or additional exposures.

(ii) Whenever spills, leaks, ruptures or other breakdowns occur that may lead to employee exposure above the 8-hr TWA limit or above the STEL, the employer shall monitor (using leak source, such as direct reading instruments, area or personal monitoring), after the cleanup of the spill or repair of the leak, rupture or other breakdown, to ensure that exposures have returned to the level that existed prior to the incident.

(f) Accuracy of monitoring.

Monitoring shall be accurate, at a confidence level of 95 percent, to within plus or minus 25 percent for airborne concentrations of BD at or above the 1 ppm TWA limit and to within plus or minus 35 percent for airborne concentrations of BD at or above the action level of 0.5 ppm and below the 1 ppm TWA limit.

(g) Employee notification of monitoring results.

(i) The employer shall, within 5 business days after the receipt of the results of any monitoring performed under this section, notify the affected employees of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) The employer shall, within 15 business days after receipt of any monitoring performed under this section indicating the 8-hour TWA or STEL has been exceeded, provide the affected employees, in writing, with information on the corrective action being taken by the employer to reduce employee exposure to or below the 8-hour TWA or STEL and the schedule for completion of this action.

(h) Observation of monitoring.

(i) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to BD conducted in accordance with this section.

(ii) Observation procedures. When observation of the monitoring of employee exposure to BD requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer at no cost with protective clothing and equipment, and shall ensure that the observer uses this equipment and complies with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer shall establish a regulated area whenever occupational exposures to airborne concentrations of BD exceed or can reasonably be expected to exceed the permissible exposure limits, either the 8-hr TWA or the STEL.

(b) Access to regulated areas shall be limited to authorized persons.

(c) Regulated areas shall be demarcated from the rest of the workplace in any manner that minimizes the number of employees exposed to BD within the regulated area.

(d) An employer at a multiemployer worksite who establishes a regulated area shall communicate the access restrictions and locations of these areas to other employers with work operations at that worksite whose employees may have access to these areas.

(6) Methods of compliance.

(a) Engineering controls and work practices.

(i) The employer shall institute engineering controls and work practices to reduce and maintain employee exposure to or below the PELs, except to the extent that the employer can establish that these controls are not feasible or where subsection (8)(a)(i) of this section applies.

(ii) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the 8-hour TWA or STEL, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection that complies with the requirements of subsection (8) of this section.

(b) Compliance plan.

(i) Where any exposures are over the PELs, the employer shall establish and implement a written plan to reduce employee exposure to or below the PELs primarily by means of engineering and work practice controls, as required by (a) of this subsection, and by the use of respiratory protection where required or permitted under this section. No compliance plan is required if all exposures are under the PELs.

(ii) The written compliance plan shall include a schedule for the development and implementation of the engineering controls and work practice controls including periodic leak detection surveys.

(iii) Copies of the compliance plan required in (b) of this subsection shall be furnished upon request for examination and copying to the director, affected employees and designated employee representatives. Such plans shall be reviewed at least every 12 months, and shall be updated as necessary to reflect significant changes in the status of the employer's compliance program.

(iv) The employer shall not implement a schedule of employee rotation as a means of compliance with the PELs.

(7) Exposure goal program.

(a) For those operations and job classifications where employee exposures are greater than the action level, in addition to compliance with the PELs, the employer shall have an exposure goal program that is intended to limit employee exposures to below the action level during normal operations.

(b) Written plans for the exposure goal program shall be furnished upon request for examination and copying to the director, affected employees and designated employee representatives.

(c) Such plans shall be updated as necessary to reflect significant changes in the status of the exposure goal program.

(d) Respirator use is not required in the exposure goal program.

(e) The exposure goal program shall include the following items unless the employer can demonstrate that the item is not feasible, will have no significant effect in reducing employee exposures, or is not necessary to achieve exposures below the action level:

(i) A leak prevention, detection, and repair program.

(ii) A program for maintaining the effectiveness of local exhaust ventilation systems.

(iii) The use of pump exposure control technology such as, but not limited to, mechanical double-sealed or seal-less pumps.

(iv) Gauging devices designed to limit employee exposure, such as magnetic gauges on rail cars.

(v) Unloading devices designed to limit employee exposure, such as a vapor return system.

(vi) A program to maintain BD concentration below the action level in control rooms by use of engineering controls.

(8) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Nonroutine work operations that are performed infrequently and for which exposures are limited in duration;

(iii) Work operations for which feasible engineering controls and work-practice controls are not yet sufficient to reduce employee exposures to or below the PELs;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1), 296-62-07131 (4)(b)(i) and (ii), and 296-62-07150 through 296-62-07156).

(ii) If air-purifying respirators are used, the employer must replace the air-purifying filter elements according to the replacement schedule set for the class of respirators listed in Table 1 of this section, and at the beginning of each work shift.

(iii) Instead of using the replacement schedule listed in Table 1 of this section, the employer may replace cartridges or canisters at 90% of their expiration service life, provided the employer:

(A) Demonstrates that employees will be adequately protected by this procedure;

(B) Uses BD breakthrough data for this purpose that have been derived from tests conducted under worst-case conditions of humidity, temperature, and air-flow rate through the filter element, and the employer also describes the data supporting the cartridge- or canister-change schedule, as well as the basis for using the data in the employer's respirator program.

(iv) A label must be attached to each filter element to indicate the date and time it is first installed on the respirator.

(v) If NIOSH approves an end-of-service-life indicator (ESLI) for an air-purifying filter element, the element may be used until the ESLI shows no further useful service life or until the element is replaced at the beginning of the next work shift, whichever occurs first.

(vi) Regardless of the air-purifying element used, if an employee detects the odor of BD, the employer must replace the air-purifying element immediately.

(c) Respirator selection.

(i) The employer must select appropriate respirators from Table 1 of this section.

Table 1. - Minimum Requirements for Respiratory Protection for Airborne BD

Concentration of Airborne BD (ppm) or condition of use	Minimum required respirator
Less than or equal to 5 ppm (5 times PEL)	(a) Air-purifying half mask or full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 4 hours.
Less than or equal to 10 ppm (10 times PEL)	(a) Air-purifying half mask or full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 3 hours.
Less than or equal to 25 ppm (25 times PEL)	(a) Air-purifying full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 2 hours. (b) Any powered air-purifying respirator equipped with approved BD or organic vapor cartridges. PAPR cartridges shall be replaced every 2 hours. (c) Continuous flow supplied air respirator equipped with a hood or helmet.
Less than or equal to 50 ppm (50 times PEL)	(a) Air-purifying full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 1 hour. (b) Powered air purifying respirator equipped with a tight-fitting facepiece and an approved BD or organic vapor cartridges. PAPR cartridges shall be replaced every 1 hour.
Less than or equal to 1,000 ppm (1,000 times PEL)	(a) Supplied air respirator equipped with a half mask or full facepiece and operated in a pressure demand or other positive pressure mode.

Concentration of Airborne BD (ppm) or condition of use	Minimum required respirator
Greater than 1,000 ppm	<p>(a) Self-contained breathing unknown concentration, or apparatus equipped with a fire fighting full facepiece and operated in a pressure demand or other positive pressure mode.</p> <p>(b) Any supplied air respirator equipped with a full facepiece and operated in a pressure demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in a pressure demand or other positive pressure mode.</p>
Escape from IDLH Conditions	<p>(a) Any positive pressure self-contained breathing apparatus with an appropriate service life.</p> <p>(b) Any air-purifying full facepiece respirator equipped with a front or back mounted BD or organic vapor canister.</p>

Notes: Respirators approved for use in higher concentrations are permitted to be used in lower concentrations. Full facepiece is required when eye irritation is anticipated.

(ii) Air-purifying respirators must have filter elements certified by NIOSH for organic vapor or BD.

(iii) When an employee whose job requires the use of a respirator cannot use a negative-pressure respirator, the employer must provide the employee with a respirator that has less breathing resistance than the negative-pressure respirator, such as a powered air-purifying respirator or supplied-air respirator, when the employee is able to use it and if it provides the employee adequate protection.

(9) Protective clothing and equipment. Where appropriate to prevent eye contact and limit dermal exposure to BD, the employer shall provide protective clothing and equipment at no cost to the employee and shall ensure its use. Eye and face protection shall meet the requirements of WAC 296-800-160.

(10) Emergency situations. Written plan. A written plan for emergency situations shall be developed, or an existing plan shall be modified, to contain the applicable elements specified in WAC 296-24-567, Employee emergency plans and fire prevention plans, and in WAC 296-62-3112, hazardous waste operations and emergency responses, for each workplace where there is a possibility of an emergency.

(11) Medical screening and surveillance.

(a) Employees covered. The employer shall institute a medical screening and surveillance program as specified in this subsection for:

(i) Each employee with exposure to BD at concentrations at or above the action level on 30 or more days or for employ-

ees who have or may have exposure to BD at or above the PELs on 10 or more days a year;

(ii) Employers (including successor owners) shall continue to provide medical screening and surveillance for employees, even after transfer to a non-BD exposed job and regardless of when the employee is transferred, whose work histories suggest exposure to BD:

(A) At or above the PELs on 30 or more days a year for 10 or more years;

(B) At or above the action level on 60 or more days a year for 10 or more years; or

(C) Above 10 ppm on 30 or more days in any past year; and

(iii) Each employee exposed to BD following an emergency situation.

(b) Program administration.

(i) The employer shall ensure that the health questionnaire, physical examination and medical procedures are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(ii) Physical examinations, health questionnaires, and medical procedures shall be performed or administered by a physician or other licensed health care professional.

(iii) Laboratory tests shall be conducted by an accredited laboratory.

(c) Frequency of medical screening activities. The employer shall make medical screening available on the following schedule:

(i) For each employee covered under (a)(i) and (ii) of this subsection, a health questionnaire and complete blood count (CBC) with differential and platelet count every year, and a physical examination as specified below:

(A) An initial physical examination that meets the requirements of this rule, if twelve months or more have elapsed since the last physical examination conducted as part of a medical screening program for BD exposure;

(B) Before assumption of duties by the employee in a job with BD exposure;

(C) Every 3 years after the initial physical examination;

(D) At the discretion of the physician or other licensed health care professional reviewing the annual health questionnaire and CBC;

(E) At the time of employee reassignment to an area where exposure to BD is below the action level, if the employee's past exposure history does not meet the criteria of (a)(ii) of this subsection for continued coverage in the screening and surveillance program, and if twelve months or more have elapsed since the last physical examination; and

(F) At termination of employment if twelve months or more have elapsed since the last physical examination.

(ii) Following an emergency situation, medical screening shall be conducted as quickly as possible, but not later than 48 hours after the exposure.

(iii) For each employee who must wear a respirator, physical ability to perform the work and use the respirator must be determined as required by WAC 296-62-071.

(d) Content of medical screening.

(i) Medical screening for employees covered by (a)(i) and (ii) of this subsection shall include:

(A) A baseline health questionnaire that includes a comprehensive occupational and health history and is updated annually. Particular emphasis shall be placed on the hematopoietic and reticuloendothelial systems, including exposure to chemicals, in addition to BD, that may have an adverse effect on these systems, the presence of signs and symptoms that might be related to disorders of these systems, and any other information determined by the examining physician or other licensed health care professional to be necessary to evaluate whether the employee is at increased risk of material impairment of health from BD exposure. Health questionnaires shall consist of the sample forms in Appendix C to this section, or be equivalent to those samples;

(B) A complete physical examination, with special emphasis on the liver, spleen, lymph nodes, and skin;

(C) A CBC; and

(D) Any other test which the examining physician or other licensed health care professional deems necessary to evaluate whether the employee may be at increased risk from exposure to BD.

(ii) Medical screening for employees exposed to BD in an emergency situation shall focus on the acute effects of BD exposure and at a minimum include: A CBC within 48 hours of the exposure and then monthly for three months; and a physical examination if the employee reports irritation of the eyes, nose, throat, lungs, or skin, blurred vision, coughing, drowsiness, nausea, or headache. Continued employee participation in the medical screening and surveillance program, beyond these minimum requirements, shall be at the discretion of the physician or other licensed health care professional.

(e) Additional medical evaluations and referrals.

(i) Where the results of medical screening indicate abnormalities of the hematopoietic or reticuloendothelial systems, for which a nonoccupational cause is not readily apparent, the examining physician or other licensed health care professional shall refer the employee to an appropriate specialist for further evaluation and shall make available to the specialist the results of the medical screening.

(ii) The specialist to whom the employee is referred under this subsection shall determine the appropriate content for the medical evaluation, e.g., examinations, diagnostic tests and procedures, etc.

(f) Information provided to the physician or other licensed health care professional. The employer shall provide the following information to the examining physician or other licensed health care professional involved in the evaluation:

(i) A copy of this section including its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's BD exposure;

(iii) The employee's actual or representative BD exposure level during employment tenure, including exposure incurred in an emergency situation;

(iv) A description of pertinent personal protective equipment used or to be used; and

(v) Information, when available, from previous employment-related medical evaluations of the affected employee which is not otherwise available to the physician or other licensed health care professional or the specialist.

(g) The written medical opinion.

(i) For each medical evaluation required by this section, the employer shall ensure that the physician or other licensed health care professional produces a written opinion and provides a copy to the employer and the employee within 15 business days of the evaluation. The written opinion shall be limited to the following information:

(A) The occupationally pertinent results of the medical evaluation;

(B) A medical opinion concerning whether the employee has any detected medical conditions which would place the employee's health at increased risk of material impairment from exposure to BD;

(C) Any recommended limitations upon the employee's exposure to BD; and

(D) A statement that the employee has been informed of the results of the medical evaluation and any medical conditions resulting from BD exposure that require further explanation or treatment.

(ii) The written medical opinion provided to the employer shall not reveal specific records, findings, and diagnoses that have no bearing on the employee's ability to work with BD.

Note: This provision does not negate the ethical obligation of the physician or other licensed health care professional to transmit any other adverse findings directly to the employee.

(h) Medical surveillance.

(i) The employer shall ensure that information obtained from the medical screening program activities is aggregated (with all personal identifiers removed) and periodically reviewed, to ascertain whether the health of the employee population of that employer is adversely affected by exposure to BD.

(ii) Information learned from medical surveillance activities must be disseminated to covered employees, as defined in (a) of this subsection, in a manner that ensures the confidentiality of individual medical information.

(12) Communication of BD hazards to employees.

(a) Hazard communication. The employer shall communicate the hazards associated with BD exposure in accordance with the requirements of the chemical hazard communication standard, WAC 296-800-170.

(b) Employee information and training.

(i) The employer shall provide all employees exposed to BD with information and training in accordance with the requirements of the chemical hazard communication standard, WAC 296-800-170.

(ii) The employer shall institute a training program for all employees who are potentially exposed to BD at or above the action level or the STEL, ensure employee participation in the program and maintain a record of the contents of such program.

(iii) Training shall be provided prior to or at the time of initial assignment to a job potentially involving exposure to BD at or above the action level or STEL and at least annually thereafter.

(iv) The training program shall be conducted in a manner that the employee is able to understand. The employer shall ensure that each employee exposed to BD over the action level or STEL is informed of the following:

(A) The health hazards associated with BD exposure, and the purpose and a description of the medical screening and surveillance program required by this section;

(B) The quantity, location, manner of use, release, and storage of BD and the specific operations that could result in exposure to BD, especially exposures above the PEL or STEL;

(C) The engineering controls and work practices associated with the employee's job assignment, and emergency procedures and personal protective equipment;

(D) The measures employees can take to protect themselves from exposure to BD;

(E) The contents of this standard and its appendices; and

(F) The right of each employee exposed to BD at or above the action level or STEL to obtain:

(I) Medical examinations as required by subsection (10) of this section at no cost to the employee;

(II) The employee's medical records required to be maintained by subsection (13)(c) of this section; and

(III) All air monitoring results representing the employee's exposure to BD and required to be kept by subsection (13)(b) of this section.

(c) Access to information and training materials.

(i) The employer shall make a copy of this standard and its appendices readily available without cost to all affected employees and their designated representatives and shall provide a copy if requested.

(ii) The employer shall provide to the director, or the designated employee representatives, upon request, all materials relating to the employee information and the training program.

(13) Recordkeeping.

(a) Objective data for exemption from initial monitoring.

(i) Where the processing, use, or handling of products or streams made from or containing BD are exempted from other requirements of this section under subsection (1)(b) of this section, or where objective data have been relied on in lieu of initial monitoring under subsection (4)(b)(ii) of this section, the employer shall establish and maintain a record of the objective data reasonably relied upon in support of the exemption.

(ii) This record shall include at least the following information:

(A) The product or activity qualifying for exemption;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and analysis of the material for the release of BD;

(D) A description of the operation exempted and how the data support the exemption; and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure measurements.

(i) The employer shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to BD as prescribed in subsection (4) of this section.

(ii) The record shall include at least the following information:

(A) The date of measurement;

(B) The operation involving exposure to BD which is being monitored;

(C) Sampling and analytical methods used and evidence of their accuracy;

(D) Number, duration, and results of samples taken;

(E) Type of protective devices worn, if any;

(F) Name, Social Security number and exposure of the employees whose exposures are represented; and

(G) The written corrective action and the schedule for completion of this action required by subsection (4)(g)(ii) of this section.

(iii) The employer shall maintain this record for at least 30 years in accordance with WAC 296-62-052.

(c) Medical screening and surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical screening and surveillance under this section.

(ii) The record shall include at least the following information:

(A) The name and Social Security number of the employee;

(B) Physician's or other licensed health care professional's written opinions as described in subsection (11) (e) of this section;

(C) A copy of the information provided to the physician or other licensed health care professional as required by subsection (11)(e) of this section.

(iii) Medical screening and surveillance records shall be maintained for each employee for the duration of employment plus 30 years, in accordance with WAC 296-62-052.

(d) Availability.

(i) The employer, upon written request, shall make all records required to be maintained by this section available for examination and copying to the director.

(ii) Access to records required to be maintained by (a) and (b) of this subsection shall be granted in accordance with WAC 296-62-05209.

(e) Transfer of records.

(i) Whenever the employer ceases to do business, the employer shall transfer records required by this section to the successor employer. The successor employer shall receive and maintain these records. If there is no successor employer, the employer shall notify the director, at least three months prior to disposal, and transmit them to the director if requested by the director within that period.

(ii) The employer shall transfer medical and exposure records as set forth in WAC 296-62-05215.

(14) Dates.

(a) Effective date. This section shall become effective (day, month), 1997.

(b) Start-up dates.

(i) The initial monitoring required under subsection (4)(b) of this section shall be completed immediately or within sixty days of the introduction of BD into the workplace.

(ii) The requirements of subsections (3) through (13) of this section, including feasible work practice controls but not including engineering controls specified in subsection (6)(a) of this section, shall be complied with immediately.

(iii) Engineering controls specified by subsection (6)(a) of this section shall be implemented by February 4, 1999, and the exposure goal program specified in subsection (7) of this section shall be implemented by February 4, 2000.

(15) Appendices.

Appendices A, B, C, D, and F to this section are informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

Appendix A. Substance Safety Data Sheet For 1,3-Butadiene (Nonmandatory)

(1) Substance Identification.

(a) Substance: 1,3-Butadiene ($\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$).

(b) Synonyms: 1,3-Butadiene (BD); butadiene; biethylene; bi-vinyl; divinyl; butadiene-1,3; buta-1,3-diene; erythrene; NCI-C50602; CAS-106-99-0.

(c) BD can be found as a gas or liquid.

(d) BD is used in production of styrene-butadiene rubber and polybutadiene rubber for the tire industry. Other uses include copolymer latexes for carpet backing and paper coating, as well as resins and polymers for pipes and automobile and appliance parts. It is also used as an intermediate in the production of such chemicals as fungicides.

(e) Appearance and odor: BD is a colorless, noncorrosive, flammable gas with a mild aromatic odor at standard ambient temperature and pressure.

(f) Permissible exposure: Exposure may not exceed 1 part BD per million parts of air averaged over the 8-hour workday, nor may short-term exposure exceed 5 parts of BD per million parts of air averaged over any 15-minute period in the 8-hour workday.

(2) Health Hazard Data.

(a) BD can affect the body if the gas is inhaled or if the liquid form, which is very cold (cryogenic), comes in contact with the eyes or skin.

(b) Effects of overexposure: Breathing very high levels of BD for a short time can cause central nervous system effects, blurred vision, nausea, fatigue, headache, decreased blood pressure and pulse rate, and unconsciousness. There are no recorded cases of accidental exposures at high levels that have caused death in humans, but this could occur. Breathing lower levels of BD may cause irritation of the eyes, nose, and throat. Skin contact with liquefied BD can cause irritation and frostbite.

(c) Long-term (chronic) exposure: BD has been found to be a potent carcinogen in rodents, inducing neoplastic lesions at multiple target sites in mice and rats. A recent study of BD-exposed workers showed that exposed workers have an increased risk of developing leukemia. The risk of leukemia increases with increased exposure to BD. OSHA has concluded that there is strong evidence that workplace exposure to BD poses an increased risk of death from cancers of the lymphohematopoietic system.

(d) Reporting signs and symptoms: You should inform your supervisor if you develop any of these signs or symptoms and suspect that they are caused by exposure to BD.

(3) Emergency First Aid Procedures.

In the event of an emergency, follow the emergency plan and procedures designated for your work area. If you have

been trained in first aid procedures, provide the necessary first aid measures. If necessary, call for additional assistance from co-workers and emergency medical personnel.

(a) Eye and Skin Exposures: If there is a potential that liquefied BD can come in contact with eye or skin, face shields and skin protective equipment must be provided and used. If liquefied BD comes in contact with the eye, immediately flush the eyes with large amounts of water, occasionally lifting the lower and the upper lids. Flush repeatedly. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. In the event of skin contact, which can cause frostbite, remove any contaminated clothing and flush the affected area repeatedly with large amounts of tepid water.

(b) Breathing: If a person breathes in large amounts of BD, move the exposed person to fresh air at once. If breathing has stopped, begin cardiopulmonary resuscitation (CPR) if you have been trained in this procedure. Keep the affected person warm and at rest. Get medical attention immediately.

(c) Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, call for help and begin emergency rescue procedures. Use extreme caution so that you do not become a casualty. Understand the plant's emergency rescue procedures and know the locations of rescue equipment before the need arises.

(4) Respirators and Protective Clothing.

(a) Respirators: Good industrial hygiene practices recommend that engineering and work practice controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not technically feasible, when such controls are in the process of being installed, or when these controls fail and need to be supplemented or during brief, nonroutine, intermittent exposure. Respirators may also be used in situations involving nonroutine work operations which are performed infrequently and in which exposures are limited in duration, and in emergency situations. In some instances cartridge respirator use is allowed, but only with strict time constraints. For example, at exposure below 5 ppm BD, a cartridge (or canister) respirator, either full or half face, may be used, but the cartridge must be replaced at least every 4 hours, and it must be replaced every 3 hours when the exposure is between 5 and 10 ppm.

If the use of respirators is necessary, the only respirators permitted are those that have been approved by the National Institute for Occupational Safety and Health (NIOSH). In addition to respirator selection, a complete respiratory protection program must be instituted which includes regular training, maintenance, fit testing, inspection, cleaning, and evaluation of respirators. If you can smell BD while wearing a respirator, proceed immediately to fresh air, and change cartridge (or canister) before re-entering an area where there is BD exposure. If you experience difficulty in breathing while wearing a respirator, tell your supervisor.

(b) Protective Clothing: Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent the skin from becoming

frozen by contact with liquefied BD (or a vessel containing liquid BD).

Employees should be provided with and required to use splash-proof safety goggles where liquefied BD may contact the eyes.

(5) Precautions for Safe Use, Handling, and Storage.

(a) Fire and Explosion Hazards: BD is a flammable gas and can easily form explosive mixtures in air. It has a lower explosive limit of 2%, and an upper explosive limit of 11.5%. It has an autoignition temperature of 420 deg. C (788 deg. F). Its vapor is heavier than air (vapor density, 1.9) and may travel a considerable distance to a source of ignition and flash back. Usually it contains inhibitors to prevent self-polymerization (which is accompanied by evolution of heat) and to prevent formation of explosive peroxides. At elevated temperatures, such as in fire conditions, polymerization may take place. If the polymerization takes place in a container, there is a possibility of violent rupture of the container.

(b) Hazard: Slightly toxic. Slight respiratory irritant. Direct contact of liquefied BD on skin may cause freeze burns and frostbite.

(c) Storage: Protect against physical damage to BD containers. Outside or detached storage of BD containers is preferred. Inside storage should be in a cool, dry, well-ventilated, noncombustible location, away from all possible sources of ignition. Store cylinders vertically and do not stack. Do not store with oxidizing material.

(d) Usual Shipping Containers: Liquefied BD is contained in steel pressure apparatus.

(e) Electrical Equipment: Electrical installations in Class I hazardous locations, as defined in Article 500 of the National Electrical Code, should be in accordance with Article 501 of the Code. If explosion-proof electrical equipment is necessary, it shall be suitable for use in Group B. Group D equipment may be used if such equipment is isolated in accordance with Section 501-5(a) by sealing all conduit 1/2-inch size or larger. See Venting of Deflagrations (NFPA No. 68, 1994), National Electrical Code (NFPA No. 70, 1996), Static Electricity (NFPA No. 77, 1993), Lightning Protection Systems (NFPA No. 780, 1995), and Fire Hazard Properties of Flammable Liquids, Gases and Volatile Solids (NFPA No. 325, 1994).

(f) Fire Fighting: Stop flow of gas. Use water to keep fire-exposed containers cool. Fire extinguishers and quick drenching facilities must be readily available, and you should know where they are and how to operate them.

(g) Spill and Leak: Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until clean-up has been completed. If BD is spilled or leaked, the following steps should be taken:

- (i) Eliminate all ignition sources.
- (ii) Ventilate area of spill or leak.
- (iii) If in liquid form, for small quantities, allow to evaporate in a safe manner.
- (iv) Stop or control the leak if this can be done without risk. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place and repair the leak or allow the cylinder to empty.

(h) Disposal: This substance, when discarded or disposed of, is a hazardous waste according to Federal regula-

tions (40 CFR part 261). It is listed as hazardous waste number D001 due to its ignitability. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with 40 CFR parts 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulation of any additional requirements as these may be more restrictive than federal laws and regulation.

(i) You should not keep food, beverages, or smoking materials in areas where there is BD exposure, nor should you eat or drink in such areas.

(j) Ask your supervisor where BD is used in your work area and ask for any additional plant safety and health rules.

(6) Medical Requirements.

Your employer is required to offer you the opportunity to participate in a medical screening and surveillance program if you are exposed to BD at concentrations exceeding the action level (0.5 ppm BD as an 8-hour TWA) on 30 days or more a year, or at or above the 8-hr TWA (1 ppm) or STEL (5 ppm for 15 minutes) on 10 days or more a year. Exposure for any part of a day counts. If you have had exposure to BD in the past, but have been transferred to another job, you may still be eligible to participate in the medical screening and surveillance program.

The WISHA rule specifies the past exposures that would qualify you for participation in the program. These past exposure are work histories that suggest the following:

- (a) That you have been exposed at or above the PELs on 30 days a year for 10 or more years;
- (b) That you have been exposed at or above the action level on 60 days a year for 10 or more years; or
- (c) That you have been exposed above 10 ppm on 30 days in any past year.

Additionally, if you are exposed to BD in an emergency situation, you are eligible for a medical examination within 48 hours. The basic medical screening program includes a health questionnaire, physical examination, and blood test. These medical evaluations must be offered to you at a reasonable time and place, and without cost or loss of pay.

(7) Observation of Monitoring.

Your employer is required to perform measurements that are representative of your exposure to BD and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear, the protective clothing and equipment.

(8) Access to Information.

(a) Each year, your employer is required to inform you of the information contained in this appendix. In addition, your employer must instruct you in the proper work practices for using BD, emergency procedures, and the correct use of protective equipment.

(b) Your employer is required to determine whether you are being exposed to BD. You or your representative has the right to observe employee measurements and to record the results obtained. Your employer is required to inform you of

your exposure. If your employer determines that you are being overexposed, he or she is required to inform you of the actions which are being taken to reduce your exposure to within permissible exposure limits and of the schedule to implement these actions.

(c) Your employer is required to keep records of your exposures and medical examinations. These records must be kept by the employer for at least thirty (30) years.

(d) Your employer is required to release your exposure and medical records to you or your representative upon your request.

Appendix B. Substance Technical Guidelines for 1,3-Butadiene (Non-Mandatory)

(1) Physical and Chemical Data.

(a) Substance identification:

(i) Synonyms: 1,3-Butadiene (BD); butadiene; biethylene; bivinyl; divinyl; butadiene-1,3; buta-1,3-diene; erythrene; NCI-C50620; CAS-106-99-0.

(ii) Formula: $(CH_2)=CH-CH=CH(2)$.

(iii) Molecular weight: 54.1.

(b) Physical data:

(i) Boiling point (760 mm Hg): -4.7 deg. C (23.5 deg. F).

(ii) Specific gravity (water = 1): 0.62 at 20 deg. C (68 deg. F).

(iii) Vapor density (air = 1 at boiling point of BD): 1.87.

(iv) Vapor pressure at 20 deg. C (68 deg. F): 910 mm Hg.

(v) Solubility in water, g/100 g water at 20 deg. C (68 deg. F): 0.05.

(vi) Appearance and odor: Colorless, flammable gas with a mildly aromatic odor. Liquefied BD is a colorless liquid with a mildly aromatic odor.

(2) Fire, Explosion, and Reactivity Hazard Data.

(a) Fire:

(i) Flash point: -76 deg. C (-105 deg. F) for take out; liquefied BD; Not applicable to BD gas.

(ii) Stability: A stabilizer is added to the monomer to inhibit formation of polymer during storage. Forms explosive peroxides in air in absence of inhibitor.

(iii) Flammable limits in air, percent by volume: Lower: 2.0; Upper: 11.5.

(iv) Extinguishing media: Carbon dioxide for small fires, polymer or alcohol foams for large fires.

(v) Special fire fighting procedures: Fight fire from protected location or maximum possible distance. Stop flow of gas before extinguishing fire. Use water spray to keep fire-exposed cylinders cool.

(vi) Unusual fire and explosion hazards: BD vapors are heavier than air and may travel to a source of ignition and flash back. Closed containers may rupture violently when heated.

(vii) For purposes of compliance with the requirements of WAC 296-24-330, BD is classified as a flammable gas. For example, 7,500 ppm, approximately one-fourth of the lower flammable limit, would be considered to pose a potential fire and explosion hazard.

(viii) For purposes of compliance with WAC 296-24-585, BD is classified as a Class B fire hazard.

(ix) For purposes of compliance with WAC 296-24-956 and 296-800-280, locations classified as hazardous due to the presence of BD shall be Class I.

(b) Reactivity:

(i) Conditions contributing to instability: Heat. Peroxides are formed when inhibitor concentration is not maintained at proper level. At elevated temperatures, such as in fire conditions, polymerization may take place.

(ii) Incompatibilities: Contact with strong oxidizing agents may cause fires and explosions. The contacting of crude BD (not BD monomer) with copper and copper alloys may cause formations of explosive copper compounds.

(iii) Hazardous decomposition products: Toxic gases (such as carbon monoxide) may be released in a fire involving BD.

(iv) Special precautions: BD will attack some forms of plastics, rubber, and coatings. BD in storage should be checked for proper inhibitor content, for self-polymerization, and for formation of peroxides when in contact with air and iron. Piping carrying BD may become plugged by formation of rubbery polymer.

(c) Warning Properties:

(i) Odor Threshold: An odor threshold of 0.45 ppm has been reported in The American Industrial Hygiene Association (AIHA) Report, Odor Thresholds for Chemicals with Established Occupational Health Standards. (Ex. 32-28C).

(ii) Eye Irritation Level: Workers exposed to vapors of BD (concentration or purity unspecified) have complained of irritation of eyes, nasal passages, throat, and lungs. Dogs and rabbits exposed experimentally to as much as 6700 ppm for 7 1/2 hours a day for 8 months have developed no histologically demonstrable abnormality of the eyes.

(iii) Evaluation of Warning Properties: Since the mean odor threshold is about half of the 1 ppm PEL, and more than 10-fold below the 5 ppm STEL, most wearers of air purifying respirators should still be able to detect breakthrough before a significant overexposure to BD occurs.

(3) Spill, Leak, and Disposal Procedures.

(a) Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until cleanup has been completed. If BD is spilled or leaked, the following steps should be taken:

(i) Eliminate all ignition sources.

(ii) Ventilate areas of spill or leak.

(iii) If in liquid form, for small quantities, allow to evaporate in a safe manner.

(iv) Stop or control the leak if this can be done without risk. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place and repair the leak or allow the cylinder to empty.

(b) Disposal: This substance, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR part 261). It is listed by the EPA as hazardous waste number D001 due to its ignitability. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with 40 CFR parts 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements because these may be more restrictive than federal laws and regulations.

(4) Monitoring and Measurement Procedures.

(a) Exposure above the Permissible Exposure Limit (8-hr TWA) or Short-Term Exposure Limit (STEL):

(i) 8-hr TWA exposure evaluation: Measurements taken for the purpose of determining employee exposure under this standard are best taken with consecutive samples covering the full shift. Air samples must be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

(ii) STEL exposure evaluation: Measurements must represent 15 minute exposures associated with operations most likely to exceed the STEL in each job and on each shift.

(iii) Monitoring frequencies: Table 1 gives various exposure scenarios and their required monitoring frequencies, as required by the final standard for occupational exposure to butadiene.

Table 1. — Five Exposure Scenarios and Their Associated Monitoring Frequencies

Action Level	8-hr TWA	STEL	Required Monitoring Activity
—*	—	—	No 8-hr TWA or STEL monitoring required.
+*	—	—	No STEL monitoring required. Monitor 8-hr TWA annually.
+	—	—	No STEL monitoring required. Periodic monitoring 8-hr TWA, in accordance with (4)(c)(iii).**
+	+	+	Periodic monitoring 8-hr TWA, in accordance with (4)(c)(iii).** Periodic monitoring STEL in accordance with (4)(c)(iii).
+	—	+	Periodic monitoring STEL, in accordance with (4)(c)(iii). Monitor 8-hr TWA annually.

Footnote (*) Exposure Scenario, Limit Exceeded: + = Yes, - = No.

Footnote (**) The employer may decrease the frequency of exposure monitoring to annually when at least 2 consecutive measurements taken at least 7 days apart show exposures to be below the 8-hr TWA, but at or above the action level.

(iv) Monitoring techniques: Appendix D describes the validated method of sampling and analysis which has been tested by OSHA for use with BD. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his or her unique field conditions. The standard requires that the method of monitoring must be accurate, to a 95 percent confidence level, to plus or minus 25 percent for concentrations of BD at or above 1 ppm, and to plus or minus 35 percent for concentrations below 1 ppm.

(5) Personal Protective Equipment.

(a) Employees should be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent the skin from becoming frozen from contact with liquid BD.

(b) Any clothing which becomes wet with liquid BD should be removed immediately and not reworn until the butadiene has evaporated.

(c) Employees should be provided with and required to use splash proof safety goggles where liquid BD may contact the eyes.

(6) Housekeeping and Hygiene Facilities.

For purposes of complying with WAC 296-24-120, 296-800-220 and 296-800-230, the following items should be emphasized:

(a) The workplace should be kept clean, orderly, and in a sanitary condition.

(b) Adequate washing facilities with hot and cold water are to be provided and maintained in a sanitary condition.

(7) Additional Precautions.

(a) Store BD in tightly closed containers in a cool, well-ventilated area and take all necessary precautions to avoid any explosion hazard.

(b) Nonsparking tools must be used to open and close metal containers. These containers must be effectively grounded.

(c) Do not incinerate BD cartridges, tanks or other containers.

(d) Employers must advise employees of all areas and operations where exposure to BD might occur.

Appendix C. Medical Screening and Surveillance for 1,3-Butadiene (Nonmandatory)

(1) Basis for Medical Screening and Surveillance Requirements.

(a) Route of Entry Inhalation.

(b) Toxicology.

Inhalation of BD has been linked to an increased risk of cancer, damage to the reproductive organs, and fetotoxicity. Butadiene can be converted via oxidation to epoxybutene and diepoxybutane, two genotoxic metabolites that may play a role in the expression of BD's toxic effects. BD has been tested for carcinogenicity in mice and rats. Both species responded to BD exposure by developing cancer at multiple primary organ sites. Early deaths in mice were caused by malignant lymphomas, primarily lymphocytic type, originating in the thymus.

Mice exposed to BD have developed ovarian or testicular atrophy. Sperm head morphology tests also revealed abnormal sperm in mice exposed to BD; lethal mutations were found in a dominant lethal test. In light of these results in animals, the possibility that BD may adversely affect the reproductive systems of male and female workers must be considered.

Additionally, anemia has been observed in animals exposed to butadiene. In some cases, this anemia appeared to

be a primary response to exposure; in other cases, it may have been secondary to a neoplastic response.

(c) Epidemiology.

Epidemiologic evidence demonstrates that BD exposure poses an increased risk of leukemia. Mild alterations of hematologic parameters have also been observed in synthetic rubber workers exposed to BD.

(2) Potential Adverse Health Effects.

(a) Acute.

Skin contact with liquid BD causes characteristic burns or frostbite. BD in gaseous form can irritate the eyes, nasal passages, throat, and lungs. Blurred vision, coughing, and drowsiness may also occur. Effects are mild at 2,000 ppm and pronounced at 8,000 ppm for exposures occurring over the full workshift.

At very high concentrations in air, BD is an anesthetic, causing narcosis, respiratory paralysis, unconsciousness, and death. Such concentrations are unlikely, however, except in an extreme emergency because BD poses an explosion hazard at these levels.

(b) Chronic.

The principal adverse health effects of concern are BD-induced lymphoma, leukemia and potential reproductive toxicity. Anemia and other changes in the peripheral blood cells may be indicators of excessive exposure to BD.

(c) Reproductive.

Workers may be concerned about the possibility that their BD exposure may be affecting their ability to procreate a healthy child. For workers with high exposures to BD, especially those who have experienced difficulties in conceiving, miscarriages, or stillbirths, appropriate medical and laboratory evaluation of fertility may be necessary to determine if BD is having any adverse effect on the reproductive system or on the health of the fetus.

(3) Medical Screening Components At-A-Glance.

(a) Health Questionnaire.

The most important goal of the health questionnaire is to elicit information from the worker regarding potential signs or symptoms generally related to leukemia or other blood abnormalities. Therefore, physicians or other licensed health care professionals should be aware of the presenting symptoms and signs of lymphohematopoietic disorders and cancers, as well as the procedures necessary to confirm or exclude such diagnoses. Additionally, the health questionnaire will assist with the identification of workers at greatest risk of developing leukemia or adverse reproductive effects from their exposures to BD.

Workers with a history of reproductive difficulties or a personal or family history of immune deficiency syndromes, blood dyscrasias, lymphoma, or leukemia, and those who are or have been exposed to medicinal drugs or chemicals known to affect the hematopoietic or lymphatic systems may be at higher risk from their exposure to BD. After the initial administration, the health questionnaire must be updated annually.

(b) Complete Blood Count (CBC).

The medical screening and surveillance program requires an annual CBC, with differential and platelet count, to be provided for each employee with BD exposure. This test is to be performed on a blood sample obtained by phle-

botomy of the venous system or, if technically feasible, from a fingerstick sample of capillary blood. The sample is to be analyzed by an accredited laboratory.

Abnormalities in a CBC may be due to a number of different etiologies. The concern for workers exposed to BD includes, but is not limited to, timely identification of lymphohematopoietic cancers, such as leukemia and non-Hodgkin's lymphoma. Abnormalities of portions of the CBC are identified by comparing an individual's results to those of an established range of normal values for males and females. A substantial change in any individual employee's CBC may also be viewed as "abnormal" for that individual even if all measurements fall within the population-based range of normal values. It is suggested that a flowsheet for laboratory values be included in each employee's medical record so that comparisons and trends in annual CBCs can be easily made.

A determination of the clinical significance of an abnormal CBC shall be the responsibility of the examining physician, other licensed health care professional, or medical specialist to whom the employee is referred. Ideally, an abnormal CBC should be compared to previous CBC measurements for the same employee, when available. Clinical common sense may dictate that a CBC value that is very slightly outside the normal range does not warrant medical concern. A CBC abnormality may also be the result of a temporary physical stressor, such as a transient viral illness, blood donation, or menorrhagia, or laboratory error. In these cases, the CBC should be repeated in a timely fashion, i.e., within 6 weeks, to verify that return to the normal range has occurred. A clinically significant abnormal CBC should result in removal of the employee from further exposure to BD. Transfer of the employee to other work duties in a BD-free environment would be the preferred recommendation.

(c) Physical Examination.

The medical screening and surveillance program requires an initial physical examination for workers exposed to BD; this examination is repeated once every three years. The initial physical examination should assess each worker's baseline general health and rule out clinical signs of medical conditions that may be caused by or aggravated by occupational BD exposure. The physical examination should be directed at identification of signs of lymphohematopoietic disorders, including lymph node enlargement, splenomegaly, and hepatomegaly.

Repeated physical examinations should update objective clinical findings that could be indicative of interim development of a lymphohematopoietic disorder, such as lymphoma, leukemia, or other blood abnormality. Physical examinations may also be provided on an as needed basis in order to follow up on a positive answer on the health questionnaire, or in response to an abnormal CBC. Physical examination of workers who will no longer be working in jobs with BD exposure are intended to rule out lymphohematopoietic disorders.

The need for physical examinations for workers concerned about adverse reproductive effects from their exposure to BD should be identified by the physician or other licensed health care professional and provided accordingly. For these workers, such consultations and examinations may relate to developmental toxicity and reproductive capacity.

Physical examination of workers acutely exposed to significant levels of BD should be especially directed at the respiratory system, eyes, sinuses, skin, nervous system, and any region associated with particular complaints. If the worker has received a severe acute exposure, hospitalization may be required to assure proper medical management. Since this type of exposure may place workers at greater risk of blood abnormalities, a CBC must be obtained within 48 hours and repeated at one, two, and three months.

Appendix D: Sampling and Analytical Method for 1,3-Butadiene (Nonmandatory)

OSHA Method No.: 56.

Matrix: Air.

Target concentration: 1 ppm (2.21 mg/m(3)).

Procedure: Air samples are collected by drawing known volumes of air through sampling tubes containing charcoal adsorbent which has been coated with 4-tert-butylcatechol. The samples are desorbed with carbon disulfide and then analyzed by gas chromatography using a flame ionization detector.

Recommended sampling rate and air volume: 0.05 L/min and 3 L.

Detection limit of the overall procedure: 90 ppb (200 ug/m(3)) (based on 3 L air volume).

Reliable quantitation limit: 155 ppb (343 ug/m(3)) (based on 3 L air volume).

Standard error of estimate at the target concentration: 6.5%.

Special requirements: The sampling tubes must be coated with 4-tert-butylcatechol. Collected samples should be stored in a freezer.

Status of method: A sampling and analytical method has been subjected to the established evaluation procedures of the Organic Methods Evaluation Branch, OSHA Analytical Laboratory, Salt Lake City, Utah 84165.

(1) Background.

This work was undertaken to develop a sampling and analytical procedure for BD at 1 ppm. The current method recommended by OSHA for collecting BD uses activated coconut shell charcoal as the sampling medium (Ref. 5.2). This method was found to be inadequate for use at low BD levels because of sample instability.

The stability of samples has been significantly improved through the use of a specially cleaned charcoal which is coated with 4-tert-butylcatechol (TBC). TBC is a polymerization inhibitor for BD (Ref. 5.3).

(a) Toxic effects.

Symptoms of human exposure to BD include irritation of the eyes, nose and throat. It can also cause coughing, drowsiness and fatigue. Dermatitis and frostbite can result from skin exposure to liquid BD. (Ref. 5.1)

NIOSH recommends that BD be handled in the workplace as a potential occupational carcinogen. This recommendation is based on two inhalation studies that resulted in cancers at multiple sites in rats and in mice. BD has also demonstrated mutagenic activity in the presence of a liver microsomal activating system. It has also been reported to have adverse reproductive effects. (Ref. 5.1)

(b) Potential workplace exposure.

About 90% of the annual production of BD is used to manufacture styrene-butadiene rubber and Polybutadiene rubber. Other uses include: Polychloroprene rubber, acrylonitrile butadiene-styrene resins, nylon intermediates, styrene-butadiene latexes, butadiene polymers, thermoplastic elastomers, nitrile resins, methyl methacrylate-butadiene styrene resins and chemical intermediates. (Ref. 5.1)

(c) Physical properties (Ref. 5.1).

CAS No.: 106-99-0

Molecular weight: 54.1

Appearance: Colorless gas

Boiling point: -4.41 deg. C (760 mm Hg)

Freezing point: -108.9 deg. C

Vapor pressure: 2 atm (a) 15.3 deg. C; 5 atm (a) 47 deg. C

Explosive limits: 2 to 11.5% (by volume in air)

Odor threshold: 0.45 ppm

Structural formula: $H(2)C:CHCH:CH(2)$

Synonyms: BD; biethylene; bivinyl; butadiene; divinyl; buta-1,3-diene; alpha-gamma-butadiene; erythrene; NCI-C50602; pyrrolylene; vinyl ethylene.

(d) Limit defining parameters.

The analyte air concentrations listed throughout this method are based on an air volume of 3 L and a desorption volume of 1 mL. Air concentrations listed in ppm are referenced to 25 deg. C and 760 mm Hg.

(e) Detection limit of the analytical procedure.

The detection limit of the analytical procedure was 304 pg per injection. This was the amount of BD which gave a response relative to the interferences present in a standard.

(f) Detection limit of the overall procedure.

The detection limit of the overall procedure was 0.60 ug per sample (90 ppb or 200 ug/m(3)). This amount was determined graphically. It was the amount of analyte which, when spiked on the sampling device, would allow recovery approximately equal to the detection limit of the analytical procedure.

(g) Reliable quantitation limit.

The reliable quantitation limit was 1.03 ug per sample (155 ppb or 343 ug/m(3)). This was the smallest amount of analyte which could be quantitated within the limits of a recovery of at least 75% and a precision (+/- 1.96 SD) of +/- 25% or better.

(h) Sensitivity.(1)

Footnote (1)

The reliable quantitation limit and detection limits reported in the method are based upon optimization of the instrument for the smallest possible amount of analyte. When the target concentration of an analyte is exceptionally higher than these limits, they may not be attainable at the routine operation parameters.

The sensitivity of the analytical procedure over a concentration range representing 0.6 to 2 times the target concentration, based on the recommended air volume, was 387 area units per ug/mL. This value was determined from the slope of the calibration curve. The sensitivity may vary with the particular instrument used in the analysis.

(i) Recovery.

The recovery of BD from samples used in storage tests remained above 77% when the samples were stored at ambient temperature and above 94% when the samples were stored at refrigerated temperature. These values were deter-

mined from regression lines which were calculated from the storage data. The recovery of the analyte from the collection device must be at least 75% following storage.

(j) Precision (analytical method only).

The pooled coefficient of variation obtained from replicate determinations of analytical standards over the range of 0.6 to 2 times the target concentration was 0.011.

(k) Precision (overall procedure).

The precision at the 95% confidence level for the refrigerated temperature storage test was $\pm 12.7\%$. This value includes an additional $\pm 5\%$ for sampling error. The overall procedure must provide results at the target concentrations that are $\pm 25\%$ at the 95% confidence level.

(l) Reproducibility.

Samples collected from a controlled test atmosphere and a draft copy of this procedure were given to a chemist unassociated with this evaluation. The average recovery was 97.2% and the standard deviation was 6.2%.

(2) Sampling procedure.

(a) Apparatus. Samples are collected by use of a personal sampling pump that can be calibrated to within $\pm 5\%$ of the recommended 0.05 L/min sampling rate with the sampling tube in line.

(b) Samples are collected with laboratory prepared sampling tubes. The sampling tube is constructed of silane-treated glass and is about 5-cm long. The ID is 4 mm and the OD is 6 mm. One end of the tube is tapered so that a glass wool end plug will hold the contents of the tube in place during sampling. The opening in the tapered end of the sampling tube is at least one-half the ID of the tube (2 mm). The other end of the sampling tube is open to its full 4-mm ID to facilitate packing of the tube. Both ends of the tube are fire-polished for safety. The tube is packed with 2 sections of pre-treated charcoal which has been coated with TBC. The tube is packed with a 50-mg backup section, located nearest the tapered end, and with a 100-mg sampling section of charcoal. The two sections of coated adsorbent are separated and retained with small plugs of silanized glass wool. Following packing, the sampling tubes are sealed with two 7/32 inch OD plastic end caps. Instructions for the pretreatment and coating of the charcoal are presented in Section 4.1 of this method.

(c) Reagents.

None required.

(d) Technique.

(i) Properly label the sampling tube before sampling and then remove the plastic end caps.

(ii) Attach the sampling tube to the pump using a section of flexible plastic tubing such that the larger front section of the sampling tube is exposed directly to the atmosphere. Do not place any tubing ahead of the sampling tube. The sampling tube should be attached in the worker's breathing zone in a vertical manner such that it does not impede work performance.

(iii) After sampling for the appropriate time, remove the sampling tube from the pump and then seal the tube with plastic end caps. Wrap the tube lengthwise.

(iv) Include at least one blank for each sampling set. The blank should be handled in the same manner as the samples with the exception that air is not drawn through it.

(v) List any potential interferences on the sample data sheet.

(vi) The samples require no special shipping precautions under normal conditions. The samples should be refrigerated if they are to be exposed to higher than normal ambient temperatures. If the samples are to be stored before they are shipped to the laboratory, they should be kept in a freezer. The samples should be placed in a freezer upon receipt at the laboratory.

(e) Breakthrough.

(Breakthrough was defined as the relative amount of analyte found on the backup section of the tube in relation to the total amount of analyte collected on the sampling tube. Five-percent breakthrough occurred after sampling a test atmosphere containing 2.0 ppm BD for 90 min. at 0.05 L/min. At the end of this time 4.5 L of air had been sampled and 20.1 μg of the analyte was collected. The relative humidity of the sampled air was 80% at 23 deg. C.)

Breakthrough studies have shown that the recommended sampling procedure can be used at air concentrations higher than the target concentration. The sampling time, however, should be reduced to 45 min. if both the expected BD level and the relative humidity of the sampled air are high.

(f) Desorption efficiency.

The average desorption efficiency for BD from TBC coated charcoal over the range from 0.6 to 2 times the target concentration was 96.4%. The efficiency was essentially constant over the range studied.

(g) Recommended air volume and sampling rate.

(h) The recommended air volume is 3 L.

(i) The recommended sampling rate is 0.05 L/min. for 1 hour.

(j) Interferences.

There are no known interferences to the sampling method.

(k) Safety precautions.

(i) Attach the sampling equipment to the worker in such a manner that it will not interfere with work performance or safety.

(ii) Follow all safety practices that apply to the work area being sampled.

(3) Analytical procedure.

(a) Apparatus.

(i) A gas chromatograph (GC), equipped with a flame ionization detector (FID).(2)

Footnote (2)

A Hewlett-Packard Model 5840A GC was used for this evaluation. Injections were performed using a Hewlett-Packard Model 7671A automatic sampler.

(ii) A GC column capable of resolving the analytes from any interference.(3)

Footnote (3)

A 20-ft x 1/8-inch OD stainless steel GC column containing 20% FFAP on 80/100 mesh Chromabsorb W-AW-DMCS was used for this evaluation.

(iii) Vials, glass 2-mL with Teflon-lined caps.

(iv) Disposable Pasteur-type pipets, volumetric flasks, pipets and syringes for preparing samples and standards, making dilutions and performing injections.

(b) Reagents.

(i) Carbon disulfide.(4)

Footnote (4) Fisher Scientific Company A.C.S. Reagent Grade solvent was used in this evaluation.

The benzene contaminant that was present in the carbon disulfide was used as an internal standard (ISTD) in this evaluation.

- (ii) Nitrogen, hydrogen and air, GC grade.
- (iii) BD of known high purity.(5)

Footnote (5) Matheson Gas Products, CP Grade 1,3-butadiene was used in this study.

(c) Standard preparation.

(i) Prepare standards by diluting known volumes of BD gas with carbon disulfide. This can be accomplished by injecting the appropriate volume of BD into the headspace above the 1-mL of carbon disulfide contained in sealed 2-mL vial. Shake the vial after the needle is removed from the septum.(6)

Footnote (6) A standard containing 7.71 ug/mL (at ambient temperature and pressure) was prepared by diluting 4 uL of the gas with 1-mL of carbon disulfide.

(ii) The mass of BD gas used to prepare standards can be determined by use of the following equations:

$$MV = (760/BP)(273+t)/(273)(22.41)$$

Where:

MV = ambient molar volume

BP = ambient barometric pressure

T = ambient temperature

$$\text{ug/uL} = 54.09/MV$$

ug/standard = (ug/uL)(uL) BD used to prepare the standard

(d) Sample preparation.

(i) Transfer the 100-mg section of the sampling tube to a 2-mL vial. Place the 50-mg section in a separate vial. If the glass wool plugs contain a significant amount of charcoal, place them with the appropriate sampling tube section.

(ii) Add 1-mL of carbon disulfide to each vial.

(iii) Seal the vials with Teflon-lined caps and then allow them to desorb for one hour. Shake the vials by hand vigorously several times during the desorption period.

(iv) If it is not possible to analyze the samples within 4 hours, separate the carbon disulfide from the charcoal, using a disposable Pasteur-type pipet, following the one hour. This separation will improve the stability of desorbed samples.

(v) Save the used sampling tubes to be cleaned and repacked with fresh adsorbent.

(e) Analysis.

(i) GC Conditions.

Column temperature: 95 deg. C

Injector temperature: 180 deg. C

Detector temperature: 275 deg. C

Carrier gas flow rate: 30 mL/min.

Injection volume: 0.80 uL

GC column: 20-ft x 1/8-in OD stainless steel GC column containing 20%

FFAP on 80/100 Chromabsorb W-AW-DMCS.

(ii) Chromatogram. See Section 4.2.

(iii) Use a suitable method, such as electronic or peak heights, to measure detector response.

(iv) Prepare a calibration curve using several standard solutions of different concentrations. Prepare the calibration

curve daily. Program the integrator to report the results in ug/mL.

(v) Bracket sample concentrations with standards.

(f) Interferences (analytical).

(i) Any compound with the same general retention time as the analyte and which also gives a detector response is a potential interference. Possible interferences should be reported by the industrial hygienist to the laboratory with submitted samples.

(ii) GC parameters (temperature, column, etc.) may be changed to circumvent interferences.

(iii) A useful means of structure designation is GC/MS. It is recommended that this procedure be used to confirm samples whenever possible.

(g) Calculations.

(i) Results are obtained by use of calibration curves. Calibration curves are prepared by plotting detector response against concentration for each standard. The best line through the data points is determined by curve fitting.

(ii) The concentration, in ug/mL, for a particular sample is determined by comparing its detector response to the calibration curve. If any analyte is found on the backup section, this amount is added to the amount found on the front section. Blank corrections should be performed before adding the results together.

(iii) The BD air concentration can be expressed using the following equation:

$$\text{mg/m}^3 = (A)(B)/(C)(D)$$

Where:

A = ug/mL from Section 3.7.2

B = volume

C = L of air sampled

D = efficiency

(iv) The following equation can be used to convert results in mg/m(3) to ppm:

$$\text{ppm} = (\text{mg/m}^3)(24.46)/54.09$$

Where:

mg/m(3) = result from Section 3.7.3.

24.46 = molar volume of an ideal gas at 760 mm Hg and 25 deg. C.

(h) Safety precautions (analytical).

(i) Avoid skin contact and inhalation of all chemicals.

(ii) Restrict the use of all chemicals to a fume hood whenever possible.

(iii) Wear safety glasses and a lab coat in all laboratory areas.

(4) Additional Information.

(a) A procedure to prepare specially cleaned charcoal coated with TBC.

(i) Apparatus.

(A) Magnetic stirrer and stir bar.

(B) Tube furnace capable of maintaining a temperature of 700 deg. C and equipped with a quartz tube that can hold 30 g of charcoal.(8)

Footnote (8) A Lindberg Type 55035 Tube furnace was used in this evaluation.

(C) A means to purge nitrogen gas through the charcoal inside the quartz tube.

(D) Water bath capable of maintaining a temperature of 60 deg. C.

(E) Miscellaneous laboratory equipment: One-liter vacuum flask, 1-L Erlenmeyer flask, 350-Ml Buchner funnel with a coarse fitted disc, 4-oz brown bottle, rubber stopper, Teflon tape etc.

(ii) Reagents.

(A) Phosphoric acid, 10% by weight, in water.(9)

Footnote (9) Baker Analyzed Reagent grade was diluted with water for use in this evaluation.

(B) 4-tert-Butylcatechol (TBC).(10)

Footnote (10) The Aldrich Chemical Company 99% grade was used in this evaluation.

(C) Specially cleaned coconut shell charcoal, 20/40 mesh.(11)

Footnote (11) Specially cleaned charcoal was obtained from Supelco, Inc. for use in this evaluation. The cleaning process used by Supelco is proprietary.

(D) Nitrogen gas, GC grade.

(iii) Procedure.

Weigh 30g of charcoal into a 500-mL Erlenmeyer flask. Add about 250 mL of 10% phosphoric acid to the flask and then swirl the mixture. Stir the mixture for 1 hour using a magnetic stirrer. Filter the mixture using a fitted Buchner funnel. Wash the charcoal several times with 250-mL portions of deionized water to remove all traces of the acid. Transfer the washed charcoal to the tube furnace quartz tube. Place the quartz tube in the furnace and then connect the nitrogen gas purge to the tube. Fire the charcoal to 700 deg. C. Maintain that temperature for at least 1 hour. After the charcoal has cooled to room temperature, transfer it to a tared beaker. Determine the weight of the charcoal and then add an amount of TBC which is 10% of the charcoal, by weight.

CAUTION-TBC is toxic and should only be handled in a fume hood while wearing gloves.

Carefully mix the contents of the beaker and then transfer the mixture to a 4-oz bottle. Stopper the bottle with a clean rubber stopper which has been wrapped with Teflon tape. Clamp the bottle in a water bath so that the water level is above the charcoal level. Gently heat the bath to 60 deg. C and then maintain that temperature for 1 hour. Cool the charcoal to room temperature and then transfer the coated charcoal to a suitable container.

The coated charcoal is now ready to be packed into sampling tubes. The sampling tubes should be stored in a sealed container to prevent contamination. Sampling tubes should be stored in the dark at room temperature. The sampling tubes should be segregated by coated adsorbent lot number.

(b) Chromatograms.

The chromatograms were obtained using the recommended analytical method. The chart speed was set at 1 cm/min. for the first three min. and then at 0.2 cm/min. for the time remaining in the analysis.

The peak which elutes just before BD is a reaction product between an impurity on the charcoal and TBC. This peak is always present, but it is easily resolved from the analyte. The peak which elutes immediately before benzene is an oxidation product of TBC.

(5) References.

(a) "Current Intelligence Bulletin 41, 1,3-Butadiene", U.S. Dept. of Health and Human Services, Public Health Service, Center for Disease Control, NIOSH.

(b) "NIOSH Manual of Analytical Methods", 2nd ed.; U.S. Dept. of Health Education and Welfare, National Institute for Occupational Safety and Health: Cincinnati, OH. 1977, Vol. 2, Method No. S91 DHEW (NIOSH) Publ. (U.S.), No. 77-157-B.

(c) Hawley, G.C., Ed. "The Condensed Chemical Dictionary", 8th ed.; Van Nostrand Reinhold Company: New York, 1971; 139.5.4. Chem. Eng. News (June 10, 1985), (63), 22-66.

Appendix E: Reserved.

APPENDIX F, MEDICAL QUESTIONNAIRES, (Non-mandatory)

1,3-Butadiene (BD) Initial Health Questionnaire

DIRECTIONS:

You have been asked to answer the questions on this form because you work with BD (butadiene). These questions are about your work, medical history, and health concerns. Please do your best to answer all of the questions. If you need help, please tell the doctor or health care professional who reviews this form.

This form is a confidential medical record. Only information directly related to your health and safety on the job may be given to your employer. Personal health information will not be given to anyone without your consent.

Date: _____
Name: _____ SSN ____/____/____
Last First MI

Job Title: _____

Company's Name: _____

Supervisor's Name: _____

Supervisor's Phone No.: () ____-____

Work History

1. Please list all jobs you have had in the past, starting with the job you have now and moving back in time to your first job. (For more space, write on the back of this page.)

Main Job Duty

Year

Company Name

City, State

Chemicals

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

2. Please describe what you do during a typical work day. Be sure to tell about your work with BD.

3. Please check any of these chemicals that you work with now or have worked with in the past:

benzene _____
 glues _____
 toluene _____
 inks, dyes _____
 other solvents, grease cutters _____
 insecticides (like DDT, lindane, etc.) _____
 paints, varnishes, thinners, strippers _____
 dusts _____
 carbon tetrachloride ("carbon tet") _____
 arsine _____
 carbon disulfide _____
 lead _____
 cement _____
 petroleum products _____
 nitrites _____

4. Please check the protective clothing or equipment you use at the job you have now:

gloves _____
 coveralls _____
 respirator _____
 dust mask _____
 safety glasses, goggles _____

Please circle your answer.

5. Does your protective clothing or equipment fit you properly? yes no

6. Have you ever made changes in your protective clothing or equipment to make it fit better? yes no

7. Have you been exposed to BD when you were not wearing protective clothing or equipment? yes no

8. Where do you eat, drink and/or smoke when you are at work? (Please check all that apply.)

Cafeteria/restaurant/snack bar _____
 Break room/employee lounge _____
 Smoking lounge _____
 At my work station _____

Please circle your answer.

9. Have you been exposed to radiation (like x-rays or nuclear material) at the job you have now or at past jobs? yes no

10. Do you have any hobbies that expose you to dusts or chemicals (including paints, glues, etc.)? yes no

11. Do you have any second or side jobs? yes no
 If yes, what are your duties there? _____

12. Were you in the military? yes no

If yes, what did you do in the military? _____

Family Health History

1. In the FAMILY MEMBER column, across from the disease name, write which family member, if any, had the disease.

DISEASE	FAMILY MEMBER
Cancer	
Lymphoma	
Sickle Cell Disease or Trait	
Immune Disease	
Leukemia	
Anemia	

2. Please fill in the following information about family health

Relative _____
 Alive? _____
 Age at Death? _____
 Cause of Death? _____
 Father _____
 Mother _____
 Brother/Sister _____
 Brother/Sister _____
 Brother/Sister _____

Personal Health History

Birth Date _/_/_ Age _ Sex _ Height _ Weight _

Please circle your answer.

1. Do you smoke any tobacco products? yes no

2. Have you ever had any kind of surgery or operation?
 yes no

If yes, what type of surgery: _____

3. Have you ever been in the hospital for any other reasons? yes no

If yes, please describe the reason _____

4. Do you have any on-going or current medical problems or conditions? yes no

If yes, please describe: _____

5. Do you now have or have you ever had any of the following? Please check all that apply to you.

unexplained fever _____
 anemia ("low blood") _____
 HIV/AIDS _____
 weakness _____
 sickle cell _____
 miscarriage _____
 skin rash _____
 bloody stools _____

Please circle your answer.

If yes, please describe:

If yes, please describe:

If yes, please list:

If yes, please list:

If yes, please explain:

Signature

DIRECTIONS:

This form is a confidential medical record. Only information directly related to your health and safety on the job may be given to your employer. Personal health information will not be given to anyone without your consent.

Supervisor's Phone No.: () _____

2. Please describe any additional job duties you have:

If yes, please list what they are: _____

If yes, please list what they are: _____

8. Since your last BD health evaluation, have you started working any new second or side jobs? yes no

If yes, what are your duties there? _____

Personal Health History

1. What is your current weight? _____ pounds

2. Have you been diagnosed with any new medical conditions or illness since your last evaluation?
yesno

If yes, please tell what they are: _____

3. Since your last evaluation, have you been in the hospital for any illnesses, injuries, or surgery? yes no

If yes, please describe: _____

4. Do you have any of the following? Please place a check for all that apply to you.

unexplained fever _____
anemia ("low blood") _____

HIV/AIDS _____

weakness _____

sickle cell _____

miscarriage _____

skin rash _____

bloody stools _____

leukemia/lymphoma _____

neck mass/swelling _____

wheezing _____

yellowing of skin _____

bruising easily _____

lupus _____

weight loss _____

kidney problems _____

enlarged lymph nodes _____

liver disease _____

cancer _____

infertility _____

drinking problems _____

thyroid problems _____

night sweats _____

chest pain _____

still birth _____

eye redness _____

lumps you can feel _____

child with birth defect _____

autoimmune disease _____

overly tired _____

lung problems _____

rheumatoid arthritis _____

mononucleosis ("mono") _____

nagging cough _____

Please circle your answer.

5. Do you have any symptoms or health problems that you think may be related to your work with BD? yes no

If yes, please describe: _____

6. Have any of your co-workers had similar symptoms or problems? yes no don't know

If yes, please describe: _____

7. Do you notice any irritation of your eyes, nose, throat, lungs, or skin when working with BD? yes no

8. Do you notice any blurred vision, coughing, drowsiness, nausea, or headache when working with BD? yes no

9. Have you been taking any NEW medications (including birth control or over-the-counter)? yes no

If yes, please list: _____

10. Have you developed any new allergies to medications, foods, or chemicals? yes no

If yes, please list: _____

11. Do you have any health conditions not covered by this questionnaire that you think are affected by your work with BD? yes no

If yes, please explain: _____

12. Do you understand all the questions? yes no

Signature

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07460, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07460, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-19-014, § 296-62-07460, filed 9/5/97, effective 11/5/97.]

WAC 296-62-07470 Methylene chloride. This occupational health standard establishes requirements for employers to control occupational exposure to methylene chloride (MC). Employees exposed to MC are at increased risk of developing cancer, adverse effects on the heart, central nervous system and liver, and skin or eye irritation. Exposure may occur through inhalation, by absorption through the skin, or through contact with the skin. MC is a solvent which is used in many different types of work activities, such as paint stripping, polyurethane foam manufacturing, and cleaning and degreasing. Under the requirements of subsection (4) of this section, each covered employer must make an initial determination of each employee's exposure to MC. If the employer determines that employees are exposed below the action level, the only other provisions of this section that apply are that a record must be made of the determination, the employees must receive information and training under sub-

section (12) of this section and, where appropriate, employees must be protected from contact with liquid MC under subsection (8) of this section.

The provisions of the MC standard are as follows:

(1) Scope and application. This section applies to all occupational exposures to methylene chloride (MC), Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment.

(2) Definitions. For the purposes of this section, the following definitions shall apply:

"Action level" means a concentration of airborne MC of 12.5 parts per million (ppm) calculated as an eight (8)-hour time-weighted average (TWA).

"Authorized person" means any person specifically authorized by the employer and required by work duties to be present in regulated areas, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under subsection (4) of this section, or any other person authorized by the WISH Act or regulations issued under the act.

"Director" means the director of the department of labor and industries, or designee.

"Emergency" means any occurrence, such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which results, or is likely to result in an uncontrolled release of MC. If an incidental release of MC can be controlled by employees such as maintenance personnel at the time of release and in accordance with the leak/spill provisions required by subsection (6) of this section, it is not considered an emergency as defined by this standard.

"Employee exposure" means exposure to airborne MC which occurs or would occur if the employee were not using respiratory protection.

"Methylene chloride (MC)" means an organic compound with chemical formula, CH_2Cl_2 . Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole.

"Physician or other licensed health care professional" is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the health care services required by subsection (10) of this section.

"Regulated area" means an area, demarcated by the employer, where an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed either the 8-hour TWA PEL or the STEL.

"Symptom" means central nervous system effects such as headaches, disorientation, dizziness, fatigue, and decreased attention span; skin effects such as chapping, erythema, cracked skin, or skin burns; and cardiac effects such as chest pain or shortness of breath.

"This section" means this methylene chloride standard.

(3) Permissible exposure limits (PELs).

(a) Eight-hour time-weighted average (TWA) PEL. The employer shall ensure that no employee is exposed to an airborne concentration of MC in excess of twenty-five parts of MC per million parts of air (25 ppm) as an 8-hour TWA.

(b) Short-term exposure limit (STEL). The employer shall ensure that no employee is exposed to an airborne concentration of MC in excess of one hundred and twenty-five parts of MC per million parts of air (125 ppm) as determined over a sampling period of fifteen minutes.

(4) Exposure monitoring.

(a) Characterization of employee exposure.

(i) Where MC is present in the workplace, the employer shall determine each employee's exposure by either:

(A) Taking a personal breathing zone air sample of each employee's exposure; or

(B) Taking personal breathing zone air samples that are representative of each employee's exposure.

(ii) Representative samples. The employer may consider personal breathing zone air samples to be representative of employee exposures when they are taken as follows:

(A) 8-hour TWA PEL. The employer has taken one or more personal breathing zone air samples for at least one employee in each job classification in a work area during every work shift, and the employee sampled is expected to have the highest MC exposure.

(B) Short-term exposure limits. The employer has taken one or more personal breathing zone air samples which indicate the highest likely 15-minute exposures during such operations for at least one employee in each job classification in the work area during every work shift, and the employee sampled is expected to have the highest MC exposure.

(C) Exception. Personal breathing zone air samples taken during one work shift may be used to represent employee exposures on other work shifts where the employer can document that the tasks performed and conditions in the workplace are similar across shifts.

(iii) Accuracy of monitoring. The employer shall ensure that the methods used to perform exposure monitoring produce results that are accurate to a confidence level of 95 percent, and are:

(A) Within plus or minus 25 percent for airborne concentrations of MC above the 8-hour TWA PEL or the STEL; or

(B) Within plus or minus 35 percent for airborne concentrations of MC at or above the action level but at or below the 8-hour TWA PEL.

(b) Initial determination. Each employer whose employees are exposed to MC shall perform initial exposure monitoring to determine each affected employee's exposure, except under the following conditions:

(i) Where objective data demonstrate that MC cannot be released in the workplace in airborne concentrations at or above the action level or above the STEL. The objective data shall represent the highest MC exposures likely to occur under reasonably foreseeable conditions of processing, use, or handling. The employer shall document the objective data exemption as specified in subsection (13) of this section;

(ii) Where the employer has performed exposure monitoring within 12 months prior to December 1, and that exposure monitoring meets all other requirements of this section, and was conducted under conditions substantially equivalent to existing conditions; or

(iii) Where employees are exposed to MC on fewer than 30 days per year (e.g., on a construction site), and the employer has measurements by direct reading instruments

which give immediate results (such as a detector tube) and which provide sufficient information regarding employee exposures to determine what control measures are necessary to reduce exposures to acceptable levels.

(c) Periodic monitoring. Where the initial determination shows employee exposures at or above the action level or above the STEL, the employer shall establish an exposure monitoring program for periodic monitoring of employee exposure to MC in accordance with Table 1:

Table 1

Six Initial Determination Exposure Scenarios and Their Associated Monitoring Frequencies

Exposure scenario	Required monitoring activity
Below the action level and at or below the STEL.	No 8-hour TWA or STEL monitoring required.
Below the action level and above the STEL.	No 8-hour TWA monitoring required; monitor STEL exposures every three months.
At or above the action level, at or below the TWA, and at or below the STEL.	Monitor 8-hour TWA exposures every six months.
At or above the action level, at or below the TWA, and above the STEL.	Monitor 8-hour TWA exposures every six months and monitor STEL exposures every three months.
Above the TWA and at or below the STEL.	Monitor 8-hour TWA exposures every three months. In addition, without regard to the last sentence of the note to subsection (3) of this section, the following employers must monitor STEL exposures every three months until either the date by which they must achieve the 8-hour TWAs PEL under subsection (3) of this section or the date by which they in fact achieve the 8-hour TWA PEL, whichever comes first: <ul style="list-style-type: none"> • Employers engaged in polyurethane foam manufacturing; • Foam fabrication; • Furniture refinishing; • General aviation aircraft stripping; • Product formulation; • Use of MC-based adhesives for boat building and repair; • Recreational vehicle manufacture, van conversion, or upholstery; and use of MC in construction work for restoration and preservation of buildings, painting and paint removal, cabinet making, or floor refinishing and resurfacing.

Exposure scenario	Required monitoring activity
Above the TWA and above the STEL.	Monitor both 8-hour TWA exposures and STEL exposures every three months.

(Note to subsection (3)(c) of this section: The employer may decrease the frequency of exposure monitoring to every six months when at least 2 consecutive measurements taken at least 7 days apart show exposures to be at or below the 8-hour TWA PEL. The employer may discontinue the periodic 8-hour TWA monitoring for employees where at least two consecutive measurements taken at least 7 days apart are below the action level. The employer may discontinue the periodic STEL monitoring for employees where at least two consecutive measurements taken at least 7 days apart are at or below the STEL.)

(d) Additional monitoring.

(i) The employer shall perform exposure monitoring when a change in workplace conditions indicates that employee exposure may have increased. Examples of situations that may require additional monitoring include changes in production, process, control equipment, or work practices, or a leak, rupture, or other breakdown.

(ii) Where exposure monitoring is performed due to a spill, leak, rupture or equipment breakdown, the employer shall clean up the MC and perform the appropriate repairs before monitoring.

(e) Employee notification of monitoring results.

(i) The employer shall, within 15 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results in writing, either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) Whenever monitoring results indicate that employee exposure is above the 8-hour TWA PEL or the STEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the 8-hour TWA PEL or STEL and the schedule for completion of this action.

(f) Observation of monitoring.

(i) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to MC conducted in accordance with this section.

(ii) Observation procedures. When observation of the monitoring of employee exposure to MC requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide, at no cost to the observer(s), and the observer(s) shall be required to use such clothing and equipment and shall comply with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer shall establish a regulated area whenever an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed either the 8-hour TWA PEL or the STEL.

(b) The employer shall limit access to regulated areas to authorized persons.

(c) The employer shall supply a respirator, selected in accordance with subsection (7)(c) of this section, to each per-

son who enters a regulated area and shall require each affected employee to use that respirator whenever MC exposures are likely to exceed the 8-hour TWA PEL or STEL.

(Note to subsection (5)(c) of this section: An employer who has implemented all feasible engineering, work practice and administrative controls (as required in subsection (6) of this section), and who has established a regulated area (as required by subsection (5)(a) of this section) where MC exposure can be reliably predicted to exceed the 8-hour TWA PEL or the STEL only on certain days (for example, because of work or process schedule) would need to have affected employees use respirators in that regulated area only on those days.)

(d) The employer shall ensure that, within a regulated area, employees do not engage in nonwork activities which may increase dermal or oral MC exposure.

(e) The employer shall ensure that while employees are wearing respirators, they do not engage in activities (such as taking medication or chewing gum or tobacco) which interfere with respirator seal or performance.

(f) The employer shall demarcate regulated areas from the rest of the workplace in any manner that adequately establishes and alerts employees to the boundaries of the area and minimizes the number of authorized employees exposed to MC within the regulated area.

(g) An employer at a multi-employer worksite who establishes a regulated area shall communicate the access restrictions and locations of these areas to all other employers with work operations at that worksite.

(6) Methods of compliance.

(a) Engineering and work practice controls. The employer shall institute and maintain the effectiveness of engineering controls and work practices to reduce employee exposure to or below the PELs except to the extent that the employer can demonstrate that such controls are not feasible.

(b) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the 8-TWA PEL or STEL, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection that complies with the requirements of subsection (7) of this section.

(c) Prohibition of rotation. The employer shall not implement a schedule of employee rotation as a means of compliance with the PELs.

(d) Leak and spill detection.

(i) The employer shall implement procedures to detect leaks of MC in the workplace. In work areas where spills may occur, the employer shall make provisions to contain any spills and to safely dispose of any MC-contaminated waste materials.

(ii) The employer shall ensure that all incidental leaks are repaired and that incidental spills are cleaned promptly by employees who use the appropriate personal protective equipment and are trained in proper methods of cleanup.

(Note to subsection (6)(d)(ii) of this section: See Appendix A of this section for examples of procedures that satisfy this requirement. Employers covered by this standard may also be subject to the hazardous waste and emergency response provisions contained in WAC 296-62-3112.)

(7) Respiratory protection.

(a) General requirements. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods when an employee's exposure to MC exceeds or can reasonably be expected to exceed the 8-hour TWA PEL or the STEL (for example, when an employee is using MC in a regulated area);

(ii) Periods necessary to install or implement feasible engineering and work-practice controls;

(iii) In a few work operations, such as some maintenance operations and repair activities, for which the employer demonstrates that engineering and work practice controls are infeasible;

(iv) Work operations for which feasible engineering and work practice controls are not sufficient to reduce exposures to or below the PELs;

(v) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07131 (4)(b)(i) and (ii)).

(ii) Employers who provide employees with gas masks with organic-vapor canisters for the purpose of emergency escape must replace the canisters after any emergency use and before the gas masks are returned to service.

(c) Respirator selection. The employer must select appropriate atmosphere-supplying respirators from Table 2 of this section.

Table 2.—Minimum Requirements for Respiratory Protection for Airborne Methylene Chloride

Methylene chloride airborne concentration (ppm) or condition of use	Minimum respirator required ¹
Up to 625 ppm (25 X PEL)	(1) Continuous flow supplied-air respirator, hood or helmet.
Up to 1250 ppm (50 X 8 hr TWA PEL)	(1) Full facepiece supplied-air respirator operated in negative pressure (demand) mode. (2) Full facepiece self-contained breathing apparatus (SCBA) operated in negative pressure (demand) mode.
Up to 5000 ppm (200 X 8-TWA PEL)	(1) Continuous flow supplied-air respirator, full facepiece. (2) Pressure demand supplied-air respirator, full facepiece. (3) Positive pressure full facepiece SCBA.
Unknown concentration, or above 5000 ppm (Greater than 200 X 8-TWA PEL)	(1) Positive pressure full facepiece SCBA. (2) Full facepiece pressure demand supplied-air respirator with an auxiliary self-contained air supply.
Fire fighting	Positive pressure full facepiece SCBA.

Methylene chloride air-borne concentration (ppm) or condition of use	Minimum respirator required ¹
Emergency escape	(1) Any continuous flow or pressure demand SCBA. (2) Gas mask with organic vapor canister.

¹ Respirators assigned for higher airborne concentrations may be used at lower concentrations.

(d) Medical evaluation. Before having an employee use a supplied-air respirator in the negative-pressure mode, or a gas mask with an organic-vapor canister for emergency escape, the employer must:

(i) Have a physician or other licensed health care professional (PLHCP) evaluate the employee's ability to use such respiratory protection;

(ii) Ensure that the PLHCP provides their findings in a written opinion to the employee and the employer.

Note: See WAC 296-62-07150 through 296-62-07156 for medical evaluation requirements for employees using respirators.

(8) Protective work clothing and equipment.

(a) Where needed to prevent MC-induced skin or eye irritation, the employer shall provide clean protective clothing and equipment which is resistant to MC, at no cost to the employee, and shall ensure that each affected employee uses it. Eye and face protection shall meet the requirements of WAC 296-800-160, as applicable.

(b) The employer shall clean, launder, repair and replace all protective clothing and equipment required by this subsection as needed to maintain their effectiveness.

(c) The employer shall be responsible for the safe disposal of such clothing and equipment.

(Note to subsection (8)(c) of this section: See Appendix A for examples of disposal procedures that will satisfy this requirement.)

(9) Hygiene facilities.

(a) If it is reasonably foreseeable that employees' skin may contact solutions containing 0.1 percent or greater MC (for example, through splashes, spills or improper work practices), the employer shall provide conveniently located washing facilities capable of removing the MC, and shall ensure that affected employees use these facilities as needed.

(b) If it is reasonably foreseeable that an employee's eyes may contact solutions containing 0.1 percent or greater MC (for example through splashes, spills or improper work practices), the employer shall provide appropriate eyewash facilities within the immediate work area for emergency use, and shall ensure that affected employees use those facilities when necessary.

(10) Medical surveillance.

(a) Affected employees. The employer shall make medical surveillance available for employees who are or may be exposed to MC as follows:

(i) At or above the action level on 30 or more days per year, or above the 8-hour TWA PEL or the STEL on 10 or more days per year;

(ii) Above the 8-TWA PEL or STEL for any time period where an employee has been identified by a physician or

other licensed health care professional as being at risk from cardiac disease or from some other serious MC-related health condition and such employee requests inclusion in the medical surveillance program;

(iii) During an emergency.

(b) Costs. The employer shall provide all required medical surveillance at no cost to affected employees, without loss of pay and at a reasonable time and place.

(c) Medical personnel. The employer shall ensure that all medical surveillance procedures are performed by a physician or other licensed health care professional, as defined in subsection (2) of this section.

(d) Frequency of medical surveillance. The employer shall make medical surveillance available to each affected employee as follows:

(i) Initial surveillance. The employer shall provide initial medical surveillance under the schedule provided by subsection (14)(b)(iii) of this section, or before the time of initial assignment of the employee, whichever is later. The employer need not provide the initial surveillance if medical records show that an affected employee has been provided with medical surveillance that complies with this section within 12 months before December 1.

(ii) Periodic medical surveillance. The employer shall update the medical and work history for each affected employee annually. The employer shall provide periodic physical examinations, including appropriate laboratory surveillance, as follows:

(A) For employees 45 years of age or older, within 12 months of the initial surveillance or any subsequent medical surveillance; and

(B) For employees younger than 45 years of age, within 36 months of the initial surveillance or any subsequent medical surveillance.

(iii) Termination of employment or reassignment. When an employee leaves the employer's workplace, or is reassigned to an area where exposure to MC is consistently at or below the action level and STEL, medical surveillance shall be made available if six months or more have elapsed since the last medical surveillance.

(iv) Additional surveillance. The employer shall provide additional medical surveillance at frequencies other than those listed above when recommended in the written medical opinion. (For example, the physician or other licensed health care professional may determine an examination is warranted in less than 36 months for employees younger than 45 years of age based upon evaluation of the results of the annual medical and work history.)

(e) Content of medical surveillance.

(i) Medical and work history. The comprehensive medical and work history shall emphasize neurological symptoms, skin conditions, history of hematologic or liver disease, signs or symptoms suggestive of heart disease (angina, coronary artery disease), risk factors for cardiac disease, MC exposures, and work practices and personal protective equipment used during such exposures.

(Note to subsection (10)(e)(i) of this section: See Appendix B of this section for an example of a medical and work history format that would satisfy this requirement.)

(ii) Physical examination. Where physical examinations are provided as required above, the physician or other licensed health care professional shall accord particular attention to the lungs, cardiovascular system (including blood pressure and pulse), liver, nervous system, and skin. The physician or other licensed health care professional shall determine the extent and nature of the physical examination based on the health status of the employee and analysis of the medical and work history.

(iii) Laboratory surveillance. The physician or other licensed health care professional shall determine the extent of any required laboratory surveillance based on the employee's observed health status and the medical and work history.

(Note to subsection (10)(e)(iii) of this section: See Appendix B of this section for information regarding medical tests. Laboratory surveillance may include before-and-after-shift carboxyhemoglobin determinations, resting ECG, hematocrit, liver function tests and cholesterol levels.)

(iv) Other information or reports. The medical surveillance shall also include any other information or reports the physician or other licensed health care professional determines are necessary to assess the employee's health in relation to MC exposure.

(f) Content of emergency medical surveillance. The employer shall ensure that medical surveillance made available when an employee has been exposed to MC in emergency situations includes, at a minimum:

(i) Appropriate emergency treatment and decontamination of the exposed employee;

(ii) Comprehensive physical examination with special emphasis on the nervous system, cardiovascular system, lungs, liver and skin, including blood pressure and pulse;

(iii) Updated medical and work history, as appropriate for the medical condition of the employee; and

(iv) Laboratory surveillance, as indicated by the employee's health status.

(Note to subsection (10)(f)(iv) of this section: See Appendix B for examples of tests which may be appropriate.)

(g) Additional examinations and referrals. Where the physician or other licensed health care professional determines it is necessary, the scope of the medical examination shall be expanded and the appropriate additional medical surveillance, such as referrals for consultation or examination, shall be provided.

(h) Information provided to the physician or other licensed health care professional. The employer shall provide the following information to a physician or other licensed health care professional who is involved in the diagnosis of MC-induced health effects:

(i) A copy of this section including its applicable appendices;

(ii) A description of the affected employee's past, current and anticipated future duties as they relate to the employee's MC exposure;

(iii) The employee's former or current exposure levels or, for employees not yet occupationally exposed to MC, the employee's anticipated exposure levels and the frequency and exposure levels anticipated to be associated with emergencies;

(iv) A description of any personal protective equipment, such as respirators, used or to be used; and

(v) Information from previous employment-related medical surveillance of the affected employee which is not otherwise available to the physician or other licensed health care professional.

(i) Written medical opinions.

(i) For each physical examination required by this section, the employer shall ensure that the physician or other licensed health care professional provides to the employer and to the affected employee a written opinion regarding the results of that examination within 15 days of completion of the evaluation of medical and laboratory findings, but not more than 30 days after the examination. The written medical opinion shall be limited to the following information:

(A) The physician's or other licensed health care professional's opinion concerning whether exposure to MC may contribute to or aggravate the employee's existing cardiac, hepatic, neurological (including stroke) or dermal disease or whether the employee has any other medical condition(s) that would place the employee's health at increased risk of material impairment from exposure to MC;

(B) Any recommended limitations upon the employee's exposure to MC, removal from MC exposure, or upon the employee's use of protective clothing or equipment and respirators;

(C) A statement that the employee has been informed by the physician or other licensed health care professional that MC is a potential occupational carcinogen, of risk factors for heart disease, and the potential for exacerbation of underlying heart disease by exposure to MC through its metabolism to carbon monoxide; and

(D) A statement that the employee has been informed by the physician or other licensed health care professional of the results of the medical examination and any medical conditions resulting from MC exposure which require further explanation or treatment.

(ii) The employer shall instruct the physician or other licensed health care professional not to reveal to the employer, orally or in the written opinion, any specific records, findings, and diagnoses that have no bearing on occupational exposure to MC.

(Note to subsection (10)(h)(ii) of this section: The written medical opinion may also include information and opinions generated to comply with other OSHA health standards.)

(j) Medical presumption. For purposes of this subsection (10), the physician or other licensed health care professional shall presume, unless medical evidence indicates to the contrary, that a medical condition is unlikely to require medical removal from MC exposure if the employee is not exposed to MC above the 8-hour TWA PEL. If the physician or other licensed health care professional recommends removal for an employee exposed below the 8-hour TWA PEL, the physician or other licensed health care professional shall cite specific medical evidence, sufficient to rebut the presumption that exposure below the 8-hour TWA PEL is unlikely to require removal, to support the recommendation. If such evidence is cited by the physician or other licensed health care professional, the employer must remove the employee. If such evidence is not cited by the physician or other licensed

health care professional, the employer is not required to remove the employee.

(k) Medical removal protection (MRP).

(i) Temporary medical removal and return of an employee.

(A) Except as provided in (j) of this subsection, when a medical determination recommends removal because the employee's exposure to MC may contribute to or aggravate the employee's existing cardiac, hepatic, neurological (including stroke), or skin disease, the employer must provide medical removal protection benefits to the employee and either:

(I) Transfer the employee to comparable work where methylene chloride exposure is below the action level; or

(II) Remove the employee from MC exposure.

(B) If comparable work is not available and the employer is able to demonstrate that removal and the costs of extending MRP benefits to an additional employee, considering feasibility in relation to the size of the employer's business and the other requirements of this standard, make further reliance on MRP an inappropriate remedy, the employer may retain the additional employee in the existing job until transfer or removal becomes appropriate, provided:

(I) The employer ensures that the employee receives additional medical surveillance, including a physical examination at least every 60 days until transfer or removal occurs; and

(II) The employer or PLHCP informs the employee of the risk to the employee's health from continued MC exposure.

(C) The employer shall maintain in effect any job-related protective measures or limitations, other than removal, for as long as a medical determination recommends them to be necessary.

(ii) End of MRP benefits and return of the employee to former job status.

(A) The employer may cease providing MRP benefits at the earliest of the following:

(I) Six months;

(II) Return of the employee to the employee's former job status following receipt of a medical determination concluding that the employee's exposure to MC no longer will aggravate any cardiac, hepatic, neurological (including stroke), or dermal disease;

(III) Receipt of a medical determination concluding that the employee can never return to MC exposure.

(B) For the purposes of this subsection (10), the requirement that an employer return an employee to the employee's former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(l) Medical removal protection benefits.

(i) For purposes of this subsection (10), the term medical removal protection benefits means that, for each removal, an employer must maintain for up to six months the earnings, seniority, and other employment rights and benefits of the employee as though the employee had not been removed from MC exposure or transferred to a comparable job.

(ii) During the period of time that an employee is removed from exposure to MC, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iii) If a removed employee files a workers' compensation claim for a MC-related disability, the employer shall continue the MRP benefits required by this section until either the claim is resolved or the 6-month period for payment of MRP benefits has passed, whichever occurs first. To the extent the employee is entitled to indemnity payments for earnings lost during the period of removal, the employer's obligation to provide medical removal protection benefits to the employee shall be reduced by the amount of such indemnity payments.

(iv) The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal from either a publicly or an employer-funded compensation program, or receives income from employment with another employer made possible by virtue of the employee's removal.

(m) Voluntary removal or restriction of an employee. Where an employer, although not required by this section to do so, removes an employee from exposure to MC or otherwise places any limitation on an employee due to the effects of MC exposure on the employee's medical condition, the employer shall provide medical removal protection benefits to the employee equal to those required by (l) of this subsection.

(n) Multiple health care professional review mechanism.

(i) If the employer selects the initial physician or licensed health care professional (PLHCP) to conduct any medical examination or consultation provided to an employee under (k) of this subsection, the employer shall notify the employee of the right to seek a second medical opinion each time the employer provides the employee with a copy of the written opinion of that PLHCP.

(ii) If the employee does not agree with the opinion of the employer-selected PLHCP, notifies the employer of that fact, and takes steps to make an appointment with a second PLHCP within 15 days of receiving a copy of the written opinion of the initial PLHCP, the employer shall pay for the PLHCP chosen by the employee to perform at least the following:

(A) Review any findings, determinations or recommendations of the initial PLHCP; and

(B) Conduct such examinations, consultations, and laboratory tests as the PLHCP deems necessary to facilitate this review.

(iii) If the findings, determinations or recommendations of the second PLHCP differ from those of the initial PLHCP, then the employer and the employee shall instruct the two health care professionals to resolve the disagreement.

(iv) If the two health care professionals are unable to resolve their disagreement within 15 days, then those two health care professionals shall jointly designate a PLHCP who is a specialist in the field at issue. The employer shall pay for the specialist to perform at least the following:

(A) Review the findings, determinations, and recommendations of the first two PLHCPs; and

(B) Conduct such examinations, consultations, laboratory tests and discussions with the prior PLHCPs as the specialist deems necessary to resolve the disagreements of the prior health care professionals.

(v) The written opinion of the specialist shall be the definitive medical determination. The employer shall act consistent with the definitive medical determination, unless the employer and employee agree that the written opinion of one of the other two PLHCPs shall be the definitive medical determination.

(vi) The employer and the employee or authorized employee representative may agree upon the use of any expeditious alternate health care professional determination mechanism in lieu of the multiple health care professional review mechanism provided by this section so long as the alternate mechanism otherwise satisfies the requirements contained in this section.

(11) Hazard communication. The employer shall communicate the following hazards associated with MC on labels and in material safety data sheets in accordance with the requirements of the chemical hazard communication standard, WAC 296-800-170: Cancer, cardiac effects (including elevation of carboxyhemoglobin), central nervous system effects, liver effects, and skin and eye irritation.

(12) Employee information and training.

(a) The employer shall provide information and training for each affected employee prior to or at the time of initial assignment to a job involving potential exposure to MC.

(b) The employer shall ensure that information and training is presented in a manner that is understandable to the employees.

(c) In addition to the information required under the chemical hazard communication standard at WAC 296-800-170:

(i) The employer shall inform each affected employee of the requirements of this section and information available in its appendices, as well as how to access or obtain a copy of it in the workplace;

(ii) Wherever an employee's exposure to airborne concentrations of MC exceeds or can reasonably be expected to exceed the action level, the employer shall inform each affected employee of the quantity, location, manner of use, release, and storage of MC and the specific operations in the workplace that could result in exposure to MC, particularly noting where exposures may be above the 8-hour TWA PEL or STEL;

(d) The employer shall train each affected employee as required under the chemical hazard communication standard at WAC 296-800-170, as appropriate.

(e) The employer shall re-train each affected employee as necessary to ensure that each employee exposed above the action level or the STEL maintains the requisite understanding of the principles of safe use and handling of MC in the workplace.

(f) Whenever there are workplace changes, such as modifications of tasks or procedures or the institution of new tasks or procedures, which increase employee exposure, and where those exposures exceed or can reasonably be expected

to exceed the action level, the employer shall update the training as necessary to ensure that each affected employee has the requisite proficiency.

(g) An employer whose employees are exposed to MC at a multi-employer worksite shall notify the other employers with work operations at that site in accordance with the requirements of the chemical hazard communication standard, WAC 296-800-170, as appropriate.

(h) The employer shall provide to the director, upon request, all available materials relating to employee information and training.

(13) Recordkeeping.

(a) Objective data.

(i) Where an employer seeks to demonstrate that initial monitoring is unnecessary through reasonable reliance on objective data showing that any materials in the workplace containing MC will not release MC at levels which exceed the action level or the STEL under foreseeable conditions of exposure, the employer shall establish and maintain an accurate record of the objective data relied upon in support of the exemption.

(ii) This record shall include at least the following information:

(A) The MC-containing material in question;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and/or analysis of the material for the release of MC;

(D) A description of the operation exempted under subsection (4)(b)(i) of this section and how the data support the exemption; and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(b) Exposure measurements.

(i) The employer shall establish and keep an accurate record of all measurements taken to monitor employee exposure to MC as prescribed in subsection (4) of this section.

(ii) Where the employer has 20 or more employees, this record shall include at least the following information:

(A) The date of measurement for each sample taken;

(B) The operation involving exposure to MC which is being monitored;

(C) Sampling and analytical methods used and evidence of their accuracy;

(D) Number, duration, and results of samples taken;

(E) Type of personal protective equipment, such as respiratory protective devices, worn, if any; and

(F) Name, Social Security number, job classification and exposure of all of the employees represented by monitoring, indicating which employees were actually monitored.

(iii) Where the employer has fewer than 20 employees, the record shall include at least the following information:

(A) The date of measurement for each sample taken;

(B) Number, duration, and results of samples taken; and

(C) Name, Social Security number, job classification and exposure of all of the employees represented by monitoring, indicating which employees were actually monitored.

(iv) The employer shall maintain this record for at least thirty (30) years, in accordance with WAC 296-62-052.

(c) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance under subsection (10) of this section.

(ii) The record shall include at least the following information:

(A) The name, Social Security number and description of the duties of the employee;

(B) Written medical opinions; and

(C) Any employee medical conditions related to exposure to MC.

(iii) The employer shall ensure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with WAC 296-62-052.

(d) Availability.

(i) The employer, upon written request, shall make all records required to be maintained by this section available to the director for examination and copying in accordance with WAC 296-62-052.

(Note to subsection (13)(d)(i) of this section: All records required to be maintained by this section may be kept in the most administratively convenient form (for example, electronic or computer records would satisfy this requirement).)

(ii) The employer, upon request, shall make any employee exposure and objective data records required by this section available for examination and copying by affected employees, former employees, and designated representatives in accordance with WAC 296-62-052.

(iii) The employer, upon request, shall make employee medical records required to be kept by this section available for examination and copying by the subject employee and by anyone having the specific written consent of the subject employee in accordance with WAC 296-62-052.

(e) Transfer of records. The employer shall comply with the requirements concerning transfer of records set forth in WAC 296-62-05215.

(14) Dates.

(a) Engineering controls required under subsection (6)(a) of this section shall be implemented according to the following schedule:

(i) For employers with fewer than 20 employees, no later than April 10, 2000.

(ii) For employers with fewer than 150 employees engaged in foam fabrication; for employers with fewer than 50 employees engaged in furniture refinishing, general aviation aircraft stripping, and product formulation; for employers with fewer than 50 employees using MC-based adhesives for boat building and repair, recreational vehicle manufacture, van conversion, and upholstery; for employers with fewer than 50 employees using MC in construction work for restoration and preservation of buildings, painting and paint removal, cabinet making and/or floor refinishing and resurfacing, no later than April 10, 2000.

(iii) For employers engaged in polyurethane foam manufacturing with 20 or more employees, no later than October 10, 1999.

(b) Use of respiratory protection whenever an employee's exposure to MC exceeds or can reasonably be expected to exceed the 8-hour TWA PEL, in accordance with

subsection (3)(a), (5)(c), (6)(a) and (7)(a) of this section, shall be implemented according to the following schedule:

(i) For employers with fewer than 150 employees engaged in foam fabrication; for employers with fewer than 50 employees engaged in furniture refinishing, general aviation aircraft stripping, and product formulation; for employers with fewer than 50 employees using MC-based adhesives for boat building and repair, recreational vehicle manufacture, van conversion, and upholstery; for employers with fewer than 50 employees using MC in construction work for restoration and preservation of buildings, painting and paint removal, cabinet making and/or floor refinishing and resurfacing, no later than April 10, 2000.

(ii) For employers engaged in polyurethane foam manufacturing with 20 or more employees, no later than October 10, 1999.

(c) Notification of corrective action under subsection (4)(e)(ii) of this section, no later than 90 days before the compliance date applicable to such corrective action.

(d) Transitional dates. The exposure limits for MC specified in WAC 296-62-07515 Table 1, shall remain in effect until the start-up dates for the exposure limits specified in subsection (14) of this section, or if the exposure limits in this section are stayed or vacated.

(e) Unless otherwise specified in this subsection (14), all other requirements of this section shall be complied with immediately.

(15) Appendices. The information contained in the appendices does not, by itself, create any additional obligations not otherwise imposed or detract from any existing obligation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07470, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07470, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-18-062, § 296-62-07470, filed 9/2/97, effective 12/1/97.]

WAC 296-62-07473 Appendix A. Substance Safety Data Sheet and Technical Guidelines for Methylene Chloride

I. Substance Identification

A. Substance: Methylene chloride (CH₂Cl₂).

B. Synonyms: MC, Dichloromethane (DCM); Methylene dichloride; Methylene bichloride; Methane dichloride; CAS: 75-09-2; NCI-C50102.

C. Physical data:

1. Molecular weight: 84.9.

2. Boiling point (760 mm Hg): 39.8 deg.C (104 deg.F).

3. Specific gravity (water = 1): 1.3.

4. Vapor density (air = 1 at boiling point): 2.9.

5. Vapor pressure at 20 deg. C (68 deg. F): 350 mm Hg.

6. Solubility in water, g/100 g water at 20 deg. C (68 deg. F) = 1.32.

7. Appearance and odor: colorless liquid with a chloroform-like odor.

D. Uses: MC is used as a solvent, especially where high volatility is required. It is a good solvent for oils, fats, waxes, resins, bitumen, rubber and cellulose acetate and is a useful paint stripper and degreaser. It is used in paint removers, in propellant mixtures for aerosol containers, as a solvent for plastics, as a degreasing agent, as an extracting agent in the

pharmaceutical industry and as a blowing agent in polyurethane foams. Its solvent property is sometimes increased by mixing with methanol, petroleum naphtha or tetrachloroethylene.

E. Appearance and odor: MC is a clear colorless liquid with a chloroform-like odor. It is slightly soluble in water and completely miscible with most organic solvents.

F. Permissible exposure: Exposure may not exceed 25 parts MC per million parts of air (25 ppm) as an eight-hour time-weighted average (8-hour TWA PEL) or 125 parts of MC per million parts of air (125 ppm) averaged over a 15-minute period (STEL).

II. Health Hazard Data

A. MC can affect the body if it is inhaled or if the liquid comes in contact with the eyes or skin. It can also affect the body if it is swallowed.

B. Effects of overexposure:

1. Short-term Exposure: MC is an anesthetic. Inhaling the vapor may cause mental confusion, light-headedness, nausea, vomiting, and headache. Continued exposure may cause increased light-headedness, staggering, unconsciousness, and even death. High vapor concentrations may also cause irritation of the eyes and respiratory tract. Exposure to MC may make the symptoms of angina (chest pains) worse. Skin exposure to liquid MC may cause irritation. If liquid MC remains on the skin, it may cause skin burns. Splashes of the liquid into the eyes may cause irritation.

2. Long-term (chronic) exposure: The best evidence that MC causes cancer is from laboratory studies in which rats, mice and hamsters inhaled MC 6 hours per day, 5 days per week for 2 years. MC exposure produced lung and liver tumors in mice and mammary tumors in rats. No carcinogenic effects of MC were found in hamsters. There are also some human epidemiological studies which show an association between occupational exposure to MC and increases in biliary (bile duct) cancer and a type of brain cancer. Other epidemiological studies have not observed a relationship between MC exposure and cancer. WISHA interprets these results to mean that there is suggestive (but not absolute) evidence that MC is a human carcinogen.

C. Reporting signs and symptoms: You should inform your employer if you develop any signs or symptoms and suspect that they are caused by exposure to MC.

D. Warning Properties:

1. Odor Threshold: Different authors have reported varying odor thresholds for MC. Kirk-Othmer and Sax both reported 25 to 50 ppm; Summer and May both reported 150 ppm; Spector reports 320 ppm. Patty, however, states that since one can become adapted to the odor, MC should not be considered to have adequate warning properties.

2. Eye Irritation Level: Kirk-Othmer reports that "MC vapor is seriously damaging to the eyes." Sax agrees with Kirk-Othmer's statement. The ACGIH Documentation of TLVs states that irritation of the eyes has been observed in workers exposed to concentrations up to 5000 ppm.

3. Evaluation of Warning Properties: Since a wide range of MC odor thresholds are reported (25-320 ppm), and human adaptation to the odor occurs, MC is considered to be a material with poor warning properties.

III. Emergency First Aid Procedures

In the event of emergency, institute first aid procedures and send for first aid or medical assistance.

A. Eye and Skin Exposures: If there is a potential for liquid MC to come in contact with eye or skin, face shields and skin protective equipment must be provided and used. If liquid MC comes in contact with the eye, get medical attention. Contact lenses should not be worn when working with this chemical.

B. Breathing: If a person breathes in large amounts of MC, move the exposed person to fresh air at once. If breathing has stopped, perform cardiopulmonary resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible.

C. Rescue: Move the affected person from the hazardous exposure immediately. If the exposed person has been overcome, notify someone else and put into effect the established emergency rescue procedures. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises. Do not become a casualty yourself.

IV. Respirators, Protective Clothing, and Eye Protection

A. Respirators: Good industrial hygiene practices recommend that engineering controls be used to reduce environmental concentrations to the permissible exposure level. However, there are some exceptions where respirators may be used to control exposure. Respirators may be used when engineering and work practice controls are not feasible, when such controls are in the process of being installed, or when these controls fail and need to be supplemented. Respirators may also be used for operations which require entry into tanks or closed vessels, and in emergency situations. If the use of respirators is necessary, the only respirators permitted are those that have been approved by the National Institute for Occupational Safety and Health (NIOSH). Supplied-air respirators are required because air-purifying respirators do not provide adequate respiratory protection against MC. In addition to respirator selection, a complete written respiratory protection program should be instituted which includes regular training, maintenance, inspection, cleaning, and evaluation. If you can smell MC while wearing a respirator, proceed immediately to fresh air. If you experience difficulty in breathing while wearing a respirator, tell your employer.

B. Protective Clothing: Employees must be provided with and required to use impervious clothing, gloves, face shields (eight-inch minimum), and other appropriate protective clothing necessary to prevent repeated or prolonged skin contact with liquid MC or contact with vessels containing liquid MC. Any clothing which becomes wet with liquid MC should be removed immediately and not reworn until the employer has ensured that the protective clothing is fit for reuse. Contaminated protective clothing should be placed in a regulated area designated by the employer for removal of MC before the clothing is laundered or disposed of. Clothing and equipment should remain in the regulated area until all of the MC contamination has evaporated; clothing and equipment should then be laundered or disposed of as appropriate.

C. Eye Protection: Employees should be provided with and required to use splash-proof safety goggles where liquid MC may contact the eyes.

V. Housekeeping and Hygiene Facilities

For purposes of complying with WAC 296-24-120, 296-800-220 and 296-800-230, the following items should be emphasized:

A. The workplace should be kept clean, orderly, and in a sanitary condition. The employer should institute a leak and spill detection program for operations involving liquid MC in order to detect sources of fugitive MC emissions.

B. Emergency drench showers and eyewash facilities are recommended. These should be maintained in a sanitary condition. Suitable cleansing agents should also be provided to assure the effective removal of MC from the skin.

C. Because of the hazardous nature of MC, contaminated protective clothing should be placed in a regulated area designated by the employer for removal of MC before the clothing is laundered or disposed of.

VI. Precautions for Safe Use, Handling, and Storage

A. Fire and Explosion Hazards: MC has no flash point in a conventional closed tester, but it forms flammable vapor-air mixtures at approximately 100 deg. C (212 deg. F), or higher. It has a lower explosion limit of 12%, and an upper explosion limit of 19% in air. It has an autoignition temperature of 556.1 deg. C (1033 deg. F), and a boiling point of 39.8 deg. C (104 deg. F). It is heavier than water with a specific gravity of 1.3. It is slightly soluble in water.

B. Reactivity Hazards: Conditions contributing to the instability of MC are heat and moisture. Contact with strong oxidizers, caustics, and chemically active metals such as aluminum or magnesium powder, sodium and potassium may cause fires and explosions. Special precautions: Liquid MC will attack some forms of plastics, rubber, and coatings.

C. Toxicity: Liquid MC is painful and irritating if splashed in the eyes or if confined on the skin by gloves, clothing, or shoes. Vapors in high concentrations may cause narcosis and death. Prolonged exposure to vapors may cause cancer or exacerbate cardiac disease.

D. Storage: Protect against physical damage. Because of its corrosive properties, and its high vapor pressure, MC should be stored in plain, galvanized or lead lined, mild steel containers in a cool, dry, well ventilated area away from direct sunlight, heat source and acute fire hazards.

E. Piping Material: All piping and valves at the loading or unloading station should be of material that is resistant to MC and should be carefully inspected prior to connection to the transport vehicle and periodically during the operation.

F. Usual Shipping Containers: Glass bottles, 5- and 55-gallon steel drums, tank cars, and tank trucks.

Note: This section addresses MC exposure in marine terminal and longshore employment only where leaking or broken packages allow MC exposure that is not addressed through compliance with WAC 296-56.

G. Electrical Equipment: Electrical installations in Class I hazardous locations as defined in Article 500 of the National Electrical Code, should be installed according to Article 501 of the code; and electrical equipment should be suitable for use in atmospheres containing MC vapors. See Flammable and Combustible Liquids Code (NFPA No. 325M), Chemical Safety Data Sheet SD-86 (Manufacturing Chemists' Association, Inc.).

H. Fire Fighting: When involved in fire, MC emits highly toxic and irritating fumes such as phosgene, hydrogen

chloride and carbon monoxide. Wear breathing apparatus and use water spray to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures. Extinguishing media are dry chemical, carbon dioxide, foam. For purposes of compliance with WAC 296-24-956, locations classified as hazardous due to the presence of MC shall be Class I.

I. Spills and Leaks: Persons not wearing protective equipment and clothing should be restricted from areas of spills or leaks until cleanup has been completed. If MC has spilled or leaked, the following steps should be taken:

1. Remove all ignition sources.

2. Ventilate area of spill or leak.

3. Collect for reclamation or absorb in vermiculite, dry sand, earth, or a similar material.

J. Methods of Waste Disposal: Small spills should be absorbed onto sand and taken to a safe area for atmospheric evaporation. Incineration is the preferred method for disposal of large quantities by mixing with a combustible solvent and spraying into an incinerator equipped with acid scrubbers to remove hydrogen chloride gases formed. Complete combustion will convert carbon monoxide to carbon dioxide. Care should be taken for the presence of phosgene.

K. You should not keep food, beverage, or smoking materials, or eat or smoke in regulated areas where MC concentrations are above the permissible exposure limits.

L. Portable heating units should not be used in confined areas where MC is used.

M. Ask your supervisor where MC is used in your work area and for any additional plant safety and health rules.

VII. Medical Requirements

Your employer is required to offer you the opportunity to participate in a medical surveillance program if you are exposed to MC at concentrations at or above the action level (12.5 ppm 8-hour TWA) for more than 30 days a year or at concentrations exceeding the PELs (25 ppm 8-hour TWA or 125 ppm 15-minute STEL) for more than 10 days a year. If you are exposed to MC at concentrations over either of the PELs, your employer will also be required to have a physician or other licensed health care professional ensure that you are able to wear the respirator that you are assigned. Your employer must provide all medical examinations relating to your MC exposure at a reasonable time and place and at no cost to you.

VIII. Monitoring and Measurement Procedures

A. Exposure above the Permissible Exposure Limit:

1. Eight-hour exposure evaluation: Measurements taken for the purpose of determining employee exposure under this section are best taken with consecutive samples covering the full shift. Air samples must be taken in the employee's breathing zone.

2. Monitoring techniques: The sampling and analysis under this section may be performed by collection of the MC vapor on two charcoal adsorption tubes in series or other composition adsorption tubes, with subsequent chemical analysis. Sampling and analysis may also be performed by instruments such as real-time continuous monitoring systems, portable direct reading instruments, or passive dosimeters as long as measurements taken using these methods accurately evaluate the concentration of MC in employees'

breathing zones. OSHA method 80 is an example of a validated method of sampling and analysis of MC. Copies of this method are available from OSHA or can be downloaded from the Internet at <http://www.osha.gov>. The employer has the obligation of selecting a monitoring method which meets the accuracy and precision requirements of the standard under his or her unique field conditions. The standard requires that the method of monitoring must be accurate, to a 95 percent confidence level, to plus or minus 25 percent for concentrations of MC at or above 25 ppm, and to plus or minus 35 percent for concentrations at or below 25 ppm. In addition to OSHA method 80, there are numerous other methods available for monitoring for MC in the workplace.

B. Since many of the duties relating to employee exposure are dependent on the results of measurement procedures, employers must assure that the evaluation of employee exposure is performed by a technically qualified person.

IX. Observation of Monitoring

Your employer is required to perform measurements that are representative of your exposure to MC and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representa-

tive must also be provided with, and must wear, protective clothing and equipment.

Access To Information

A. Your employer is required to inform you of the information contained in this Appendix. In addition, your employer must instruct you in the proper work practices for using MC, emergency procedures, and the correct use of protective equipment.

B. Your employer is required to determine whether you are being exposed to MC. You or your representative has the right to observe employee measurements and to record the results obtained. Your employer is required to inform you of your exposure. If your employer determines that you are being over exposed, he or she is required to inform you of the actions which are being taken to reduce your exposure to within permissible exposure limits.

C. Your employer is required to keep records of your exposures and medical examinations. These records must be kept by the employer for at least thirty (30) years.

D. Your employer is required to release your exposure and medical records to you or your representative upon your request.

E. Your employer is required to provide labels and material safety data sheets (MSDS) for all materials, mixtures or solutions composed of greater than 0.1 percent MC. An example of a label that would satisfy these requirements would be:

Danger Contains Methylene Chloride Potential Cancer Hazard

May worsen heart disease because methylene chloride is converted to carbon monoxide in the body.

May cause dizziness, headache, irritation of the throat and lungs, loss of consciousness and death at high concentrations (for example, if used in a poorly ventilated room).

Avoid Skin Contact. Contact with liquid causes skin and eye irritation.

X. Common Operations and Controls

The following list includes some common operations in which exposure to MC may occur and control methods which may be effective in each case:

Operations	Controls
Use as solvent in paint and varnish removers cold cleaning and ultrasonic cleaning, and as a solvent in furniture stripping.	General dilution ventilation; local; manufacture of aerosols; cold cleaning exhaust ventilation; personal protective equipment; substitution.
Use as solvent in vapor degreasing.	Process enclosure; local exhaust ventilation; chilling coils; substitution.
Use as a secondary refrigerant in air scientific testing.	General dilution ventilation; local conditioning and exhaust ventilation; personal protective equipment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07473, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-18-062, § 296-62-07473, filed 9/2/97, effective 12/1/97.]

WAC 296-62-07519 Thiram. (1) Scope and application. This section applies to occupational exposure to thiram (tetramethylthiuram disulfide), in addition to those requirements listed in WAC 296-62-07515. Nothing in this section shall preclude the application of other appropriate standards and regulations to minimize worker exposure to thiram.

(2) Definitions. The following definitions are applicable to this section:

(a) Clean - the absence of dirt or materials which may be harmful to a worker's health.

(b) Large seedlings - those seedlings of such size, either by length or breadth, that it is difficult to avoid contact of the thiram treated plant with the mouth or face during planting operations.

(3) General requirements.

(a) Workers should not be allowed to work more than five days in any seven day period with or around the application of thiram or thiram treated seedlings.

(b) Washing and worker hygiene.

(i) Workers shall wash their hands prior to eating or smoking at the close of work.

(ii) Warm (at least 85°F, 29.4°C) wash water and single use hand wiping materials shall be provided for washing.

(iii) The warm water and hand wiping materials shall be at fixed work locations or at the planting unit.

(iv) Where warm water is not available within 15 minutes travel time, nonalcoholic based waterless hand cleaner shall be provided.

(v) Every planter or nursery worker shall be advised to bathe or shower daily.

(vi) The inside of worker carrying vehicles shall be washed or vacuumed and wiped down at least weekly during the period of thiram use.

(c) Personal protective measures.

(i) Clothing shall be worn by workers to reduce skin contact with thiram to the legs, arms and torso.

(ii) For those workers who have thiram skin irritations, exposed areas of the body shall be protected by a suitable barrier cream.

(iii) Clothing worn by workers shall be washed or changed at least every other day.

(iv) Only impervious gloves may be worn by workers.

(v) Workers hands should be clean of thiram before placing them into gloves.

(vi) Thiram applicators shall be provided with and use respiratory protection in accordance with WAC 296-62-071, disposable coveralls or rubber slickers or other impervious clothing, rubberized boots, head covers and rubberized gloves.

(vii) Nursery workers, other than applicators, who are likely to be exposed to thiram shall be provided with and use disposable coveralls or rubber slickers or other impervious clothing, impervious footwear and gloves, and head covers in accordance with WAC 296-800-160, unless showers have been provided and are used.

(viii) Eye protection according to WAC 296-800-160, shall be provided and worn by workers who may be exposed to splashes of thiram during spraying, plug bundling, belt line grading and plugging or other operations.

(ix) Item (viii) of this subdivision need not be complied with where pressurized emergency eye wash fountains are within 10 seconds travel time of the work location. (Approved respirator - see WAC 296-62-071.)

(x) A dust mask shall be worn, when planting large seedlings, to avoid mouth and face contact with the thiram treated plant unless equally effective measures or planting practices have been established.

(d) Food handling.

(i) Food snacks, beverages, smoking materials, or any other item which is consumed shall not be stored or consumed in the packing area of the nursery.

(ii) Worker carrying vehicles shall have a clean area for carrying lunches.

(iii) The clean area of the vehicle shall be elevated from the floor and not used to carry other than food or other consumable items.

(iv) The carrying of lunches, food or other consumable items in tree planting bags is prohibited.

(v) Care shall be taken to insure that worker exposure to thiram spray, including downwind driftings, is minimized or eliminated.

(vi) When bags that contained thiram or thiram treated seedlings are burned, prevent worker exposure to the smoke.

(e) Thiram use and handling.

(i) Thiram treated seedlings shall be allowed to dry or stabilize prior to packing.

(ii) Seedlings shall be kept moist during packing and whenever possible during planting operations.

(iii) Floors, where thiram is used, shall not be dry swept but instead vacuumed, washed or otherwise cleaned at least daily.

(iv) Silica chips used to cover thiram treated seedling plugs shall be removed at the nursery.

(f) Training.

(i) Each worker engaged in operations where exposure to thiram may occur shall be provided training on the hazards of thiram, as well as the necessary precautions for its safe use and handling.

(ii) The training shall include instruction in:

(A) The nature of the health hazard(s) from exposure to thiram including specifically the potential for alcohol intolerance, drug interaction, and skin irritation;

(B) The specific nature of operations which could result in exposure to thiram and the necessary protective steps;

(C) The purpose for, proper use, and limitations of protective devices including respirators and clothing;

(D) The necessity for and requirements of good personal hygiene; and

(E) A review of the thiram rules at the worker's first training and indoctrination, and annually thereafter.

(4) Effective date. This standard shall become effective 30 days after being filed with the code reviser.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07519, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-16-016 (Order 81-19), § 296-62-07519, filed 7/27/81.]

WAC 296-62-07521 Lead. (1) Scope and application.

(a) This section applies to all occupational exposure to lead, except as provided in subdivision (1)(b).

(b) This section does not apply to the construction industry or to agricultural operations covered by chapter 296-306 WAC.

(2) Definitions as applicable to this part.

(a) "Action level" - employee exposure, without regard to the use of respirators, to an airborne concentration of lead of thirty micrograms per cubic meter of air (30 µg/m³) averaged over an eight-hour period.

(b) "Director" - the director of the department of labor and industries.

(c) "Lead" - metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

(3) General requirements.

(a) Employers will assess the hazards of lead in the work place and provide information to the employees about the hazards of the lead exposures to which they may be exposed.

(b) Information provided shall include:

(i) Exposure monitoring (including employee notification);

(ii) Written compliance programs;

- (iii) Respiratory protection programs;
- (iv) Personnel protective equipment and housekeeping;
- (v) Medical surveillance and examinations;
- (vi) Training requirements;
- (vii) Recordkeeping requirements.
- (4) Permissible exposure limit (PEL).

(a) The employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air ($50 \mu\text{g}/\text{m}^3$) averaged over an eight-hour period.

(b) If an employee is exposed to lead for more than eight hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

$$\text{Maximum permissible limit (in } \mu\text{g}/\text{m}^3) = 400 \div \text{hours worked in the day.}$$

(c) When respirators are used to supplement engineering and work practice controls to comply with the PEL and all the requirements of subsection (7) have been met, employee exposure, for the purpose of determining whether the employer has complied with the PEL, may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

(5) Exposure monitoring.

(a) General.

(i) For the purposes of subsection (5), employee exposure is that exposure which would occur if the employee were not using a respirator.

(ii) With the exception of monitoring under subdivision (5)(c), the employer shall collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

(iii) Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

(b) Initial determination. Each employer who has a workplace or work operation covered by this standard shall determine if any employee may be exposed to lead at or above the action level.

(c) Basis of initial determination.

(i) The employer shall monitor employee exposures and shall base initial determinations on the employee exposure monitoring results and any of the following, relevant considerations:

(A) Any information, observations, or calculations which would indicate employee exposure to lead;

(B) Any previous measurements of airborne lead; and

(C) Any employee complaints of symptoms which may be attributable to exposure to lead.

(ii) Monitoring for the initial determination may be limited to a representative sample of the exposed employees who the employer reasonably believes are exposed to the greatest airborne concentrations of lead in the workplace.

(iii) Measurements of airborne lead made in the preceding twelve months may be used to satisfy the requirement to monitor under item (5)(c)(i) if the sampling and analytical

methods used meet the accuracy and confidence levels of subdivision (5)(i) of this section.

(d) Positive initial determination and initial monitoring.

(i) Where a determination conducted under subdivision (5)(b) and (5)(c) of this section shows the possibility of any employee exposure at or above the action level, the employer shall conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

(ii) Measurements of airborne lead made in the preceding twelve months may be used to satisfy this requirement if the sampling and analytical methods used meet the accuracy and confidence levels of subdivision (5)(i) of this section.

(e) Negative initial determination. Where a determination, conducted under subdivisions (5)(b) and (5)(c) of this section is made that no employee is exposed to airborne concentrations of lead at or above the action level, the employer shall make a written record of such determination. The record shall include at least the information specified in subdivision (5)(c) of this section and shall also include the date of determination, location within the worksite, and the name and social security number of each employee monitored.

(f) Frequency.

(i) If the initial monitoring reveals employee exposure to be below the action level the measurements need not be repeated except as otherwise provided in subdivision (5)(g) of this section.

(ii) If the initial determination or subsequent monitoring reveals employee exposure to be at or above the action level but below the permissible exposure limit the employer shall repeat monitoring in accordance with this subsection at least every six months. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in subdivision (5)(g) of this section.

(iii) If the initial monitoring reveals that employee exposure is above the permissible exposure limit the employer shall repeat monitoring quarterly. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the PEL but at or above the action level at which time the employer shall repeat monitoring for that employee at the frequency specified in item (5)(f)(ii), except as otherwise provided in subdivision (5)(g) of this section.

(g) Additional monitoring. Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to lead, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to lead, additional monitoring in accordance with this subsection shall be conducted.

(h) Employee notification.

(i) Within five working days after the receipt of monitoring results, the employer shall notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, the employer shall include in

the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

(i) Accuracy of measurement. The employer shall use a method of monitoring and analysis which has an accuracy (to a confidence level of ninety-five percent) of not less than plus or minus twenty percent for airborne concentrations of lead equal to or greater than $30 \mu\text{g}/\text{m}^3$.

(6) Methods of compliance.

(a) Engineering and work practice controls.

(i) Where any employee is exposed to lead above the permissible exposure limit for more than thirty days per year, the employer shall implement engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead in accordance with the implementation schedule in Table I below, except to the extent that the employer can demonstrate that such controls are not feasible. Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit, the employer shall nonetheless use them to reduce exposures to the lowest feasible level and shall supplement them by the use of respiratory protection which complies with the requirements of subsection (7) of this section.

(ii) Where any employee is exposed to lead above the permissible exposure limit, but for thirty days or less per year, the employer shall implement engineering controls to reduce exposures to $200 \mu\text{g}/\text{m}^3$, but thereafter may implement any combination of engineering, work practice (including administrative controls), and respiratory controls to reduce and maintain employee exposure to lead to or below $50 \mu\text{g}/\text{m}^3$.

TABLE I

Industry	Compliance dates: ¹ ($50 \mu\text{g}/\text{m}^3$)
Lead chemicals, secondary copper smelting.	July 19, 1996
Nonferrous foundries	July 19, 1996. ²
Brass and bronze ingot manufacture.	6 years. ³

¹ Calculated by counting from the date the stay on implementation of subsection (6)(a) was lifted by the U.S. Court of Appeals for the District of Columbia, the number of years specified in the 1978 lead standard and subsequent amendments for compliance with the PEL of $50 \mu\text{g}/\text{m}^3$ for exposure to airborne concentrations of lead levels for the particular industry.

² Large nonferrous foundries (20 or more employees) are required to achieve the PEL of $50 \mu\text{g}/\text{m}^3$ by means of engineering and work practice controls. Small nonferrous foundries (fewer than 20 employees) are required to achieve an 8-hour TWA of $75 \mu\text{g}/\text{m}^3$ by such controls.

³ Expressed as the number of years from the date on which the Court lifts the stay on the implementation of subsection (6)(a) for this industry for employers to achieve a lead in air concentration of $75 \mu\text{g}/\text{m}^3$. Compliance with subsection (6) in this industry is determined by a compliance directive that incorporates elements from the settlement agreement between OSHA and representatives of the industry.

(b) Respiratory protection. Where engineering and work practice controls do not reduce employee exposure to or below the $50 \mu\text{g}/\text{m}^3$ permissible exposure limit, the employer shall supplement these controls with respirators in accordance with subsection (7).

(c) Compliance program.

(i) Each employer shall establish and implement a written compliance program to reduce exposures to or below the permissible exposure limit, and interim levels if applicable, solely by means of engineering and work practice controls in accordance with the implementation schedule in subdivision (6)(a).

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each operation in which lead is emitted; e.g., machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices;

(B) A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Air monitoring data which documents the source of lead emissions;

(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;

(F) A work practice program which includes items required under subsections (8), (9) and (10) of this regulation;

(G) An administrative control schedule required by subdivision (6)(f), if applicable; and

(H) Other relevant information.

(iii) Written programs shall be submitted upon request to the director, and shall be available at the worksite for examination and copying by the director, any affected employee or authorized employee representatives.

(iv) Written programs shall be revised and updated at least every six months to reflect the current status of the program.

(d) Mechanical ventilation.

(i) When ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure shall be made at least every three months. Measurements of the system's effectiveness in controlling exposure shall be made within five days of any change in production, process, or control which might result in a change in employee exposure to lead.

(ii) Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the employer shall assure that (A) the system has a high efficiency filter with reliable back-up filter; and (B) controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails are installed, operating, and maintained.

(e) Administrative controls. If administrative controls are used as a means of reducing employees TWA exposure to lead, the employer shall establish and implement a job rotation schedule which includes:

(i) Name or identification number of each affected employee;

(ii) Duration and exposure levels at each job or work station where each affected employee is located; and

(iii) Any other information which may be useful in assessing the reliability of administrative controls to reduce exposure to lead.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Period necessary to install or implement engineering or work-practice controls;

(ii) Work operations for which engineering and work-practice controls are not sufficient to reduce exposures to or below the permissible exposure limit;

(iii) Periods when an employee requests a respirator.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07150 through 296-62-07156).

(ii) If an employee has breathing difficulty during fit testing or respirator use, the employer must provide the employee with a medical examination as required by subsection (11)(c)(ii)(C) of this section to determine whether or not the employee can use a respirator while performing the required duty.

(c) Respirator selection.

(i) The employer must select the appropriate respirator or combination of respirators from Table II of this section.

(ii) The employer must provide a powered air-purifying respirator instead of the respirator specified in Table II of this section when an employee chooses to use this type of respirator and that such a respirator provides adequate protection to the employee.

TABLE II
RESPIRATORY PROTECTION FOR LEAD AEROSOLS

Airborne Concentration of Lead or Condition of Use	Required Respirator ¹
Not in excess of 0.5 mg/m ³ (10X PEL).	Half-mask, air-purifying respirator equipped with high efficiency filters. ^{2,3}
Not in excess of 2.5 mg/m ³ (50X PEL).	Full facepiece, air-purifying respirator with high efficiency filters. ³
Not in excess of 50 mg/m ³ (1000X PEL).	(1) Any powered, air-purifying respirator with high efficiency filters ³ ; or (2) Half-mask supplied-air respirator operated in positive-pressure mode. ²
Not in excess of 100 mg/m ³ (2000X PEL).	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive pressure mode.
Greater than 100 mg/m ³ , unknown concentration or fire fighting.	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode.

Note: ¹ Respirators specified for high concentrations can be used at lower concentrations of lead.

² Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

³ A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

(8) Protective work clothing and equipment.

(a) Provision and use. If an employee is exposed to lead above the PEL, without regard to the use of respirators or where the possibility of skin or eye irritation exists, the employer shall provide at no cost to the employee and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, hats, and shoes or disposable shoe coverlets; and

(iii) Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-800-160.

(b) Cleaning and replacement.

(i) The employer shall provide the protective clothing required in subdivision (8)(a) of this section in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 µg/m³ of lead as an eight-hour TWA.

(ii) The employer shall provide for the cleaning, laundering, or disposal of protective clothing and equipment required by subdivision (8)(a) of this section.

(iii) The employer shall repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose as prescribed in subdivision (10)(b) of this section.

(v) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container.

(vi) The employer shall inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(vii) The employer shall assure that the containers of contaminated protective clothing and equipment required by subdivision (8)(b)(v) are labeled as follows:

CAUTION: CLOTHING CONTAMINATED WITH LEAD.
DO NOT REMOVE DUST BY BLOWING OR SHAKING.
DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

(viii) The employer shall prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

(9) Housekeeping.

(a) Surfaces. All surfaces shall be maintained as free as practicable of accumulations of lead.

(b) Cleaning floors.

(i) Floors and other surfaces where lead accumulates may not be cleaned by the use of compressed air.

(ii) Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and found not to be effective.

(c) Vacuuming. Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner which minimizes the reentry of lead into the workplace.

(10) Hygiene facilities and practices.

(a) The employer shall assure that in areas where employees are exposed to lead above the PEL, without regard to the use of respirators, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, except in change rooms, lunchrooms, and showers required under subdivision (10)(b) through (10)(d) of this section.

(b) Change rooms.

(i) The employer shall provide clean change rooms for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer shall assure that change rooms are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination.

(c) Showers.

(i) The employer shall assure that employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators, shower at the end of the work shift.

(ii) The employer shall provide shower facilities in accordance with WAC 296-24-12009.

(iii) The employer shall assure that employees who are required to shower pursuant to item (10)(c)(i) do not leave the workplace wearing any clothing or equipment worn during the work shift.

(d) Lunchrooms.

(i) The employer shall provide lunchroom facilities for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer shall assure that lunchroom facilities have a temperature controlled, positive pressure, filtered air supply, and are readily accessible to employees.

(iii) The employer shall assure that employees who work in areas where their airborne exposure to lead is above the PEL without regard to the use of a respirator wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

(iv) The employer shall assure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, downdraft booth, or other cleaning method.

(e) Lavatories. The employer shall provide an adequate number of lavatory facilities which comply with WAC 296-800-230.

(11) Medical surveillance.

(a) General.

(i) The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than thirty days per year.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

(iii) The employer shall provide the required medical surveillance including multiple physician review under item (11)(c)(iii) without cost to employees and at a reasonable time and place.

(b) Biological monitoring.

(i) Blood lead and ZPP level sampling and analysis. The employer shall make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee covered under item (11)(a)(i) of this section on the following schedule:

(A) At least every six months to each employee covered under item (11)(a)(i) of this section;

(B) At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/100 g of whole blood. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 µg/100 g of whole blood; and

(C) At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.

(ii) Follow-up blood sampling tests. Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal under item (12)(a)(i)(A), the employer shall provide a second (follow-up) blood sampling test within two weeks after the employer receives the results of the first blood sampling test.

(iii) Accuracy of blood lead level sampling and analysis. Blood lead level sampling and analysis provided pursuant to this section shall have an accuracy (to a confidence level of ninety-five percent) within plus or minus fifteen percent or 6 µg/100 ml, whichever is greater, and shall be conducted by a laboratory licensed by the Center for Disease Control (CDC), United States Department of Health, Education and Welfare or which has received a satisfactory grade in blood lead proficiency testing from CDC in the prior twelve months.

(iv) Employee notification. Within five working days after the receipt of biological monitoring results, the employer shall notify in writing each employee whose blood lead level exceeds 40 µg/100 g: (A) of that employee's blood lead level and (B) that the standard requires temporary medical removal with medical removal protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal under item (12)(a)(i) of this section.

(c) Medical examinations and consultations.

(i) Frequency. The employer shall make available medical examinations and consultations to each employee covered under item (11)(a)(i) of this section on the following schedule:

(A) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding twelve months indicated a blood lead level at or above 40 µg/100 g;

(B) Prior to assignment for each employee being assigned for the first time to an area in which airborne concentrations of lead are at or above the action level;

(C) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and

(D) As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.

(ii) Content. Medical examinations made available pursuant to subitems (11)(c)(i)(A) through (B) of this section shall include the following elements:

(A) A detailed work history and a medical history, with particular attention to past lead exposure (occupational and nonoccupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;

(B) A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;

(C) A blood pressure measurement;

(D) A blood sample and analysis which determines:

(I) Blood lead level;

(II) Hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology;

(III) Zinc protoporphyrin;

(IV) Blood urea nitrogen; and

(V) Serum creatinine;

(E) A routine urinalysis with microscopic examination; and

(F) Any laboratory or other test which the examining physician deems necessary by sound medical practice.

The content of medical examinations made available pursuant to subitems (11)(c)(i)(C) through (D) of this section shall be determined by an examining physician and, if requested by an employee, shall include pregnancy testing or laboratory evaluation of male fertility.

(iii) Multiple physician review mechanism.

(A) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under this section, the employee may designate a second physician:

(I) To review any findings, determinations or recommendations of the initial physician; and

(II) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(B) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(I) The employee informing the employer that he or she intends to seek a second medical opinion, and

(II) The employee initiating steps to make an appointment with a second physician.

(C) If the findings, determinations or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that

efforts are made for the two physicians to resolve any disagreement.

(D) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician:

(I) To review any findings, determinations or recommendations of the prior physicians; and

(II) To conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(E) The employer shall act consistent with the findings, determinations and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(iv) Information provided to examining and consulting physicians.

(A) The employer shall provide an initial physician conducting a medical examination or consultation under this section with the following information:

(I) A copy of this regulation for lead including all appendices;

(II) A description of the affected employee's duties as they relate to the employee's exposure;

(III) The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);

(IV) A description of any personal protective equipment used or to be used;

(V) Prior blood lead determinations; and

(VI) All prior written medical opinions concerning the employee in the employer's possession or control.

(B) The employer shall provide the foregoing information to a second or third physician conducting a medical examination or consultation under this section upon request either by the second or third physician, or by the employee.

(v) Written medical opinions.

(A) The employer shall obtain and furnish the employee with a copy of a written medical opinion from each examining or consulting physician which contains the following information:

(I) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at increased risk of material impairment of the employee's health from exposure to lead;

(II) Any recommended special protective measures to be provided to the employee, or limitations to be placed upon the employee's exposure to lead;

(III) Any recommended limitation upon the employee's use of respirators, including a determination of whether the employee can wear a powered air purifying respirator if a physician determines that the employee cannot wear a negative pressure respirator; and

(IV) The results of the blood lead determinations.

(B) The employer shall instruct each examining and consulting physician to:

(I) Not reveal either in the written opinion, or in any other means of communication with the employer, findings,

including laboratory results, or diagnoses unrelated to an employee's occupational exposure to lead; and

(II) Advise the employee of any medical condition, occupational or nonoccupational, which dictates further medical examination or treatment.

(vi) Alternate physician determination mechanisms. The employer and an employee or authorized employee representative may agree upon the use of any expeditious alternate physician determination mechanism in lieu of the multiple physician review mechanism provided by this subsection so long as the alternate mechanism otherwise satisfies the requirements contained in this subsection.

(d) Chelation.

(i) The employer shall assure that any person whom he retains, employs, supervises or controls does not engage in prophylactic chelation of any employee at any time.

(ii) If therapeutic or diagnostic chelation is to be performed by any person in item (11)(d)(i), the employer shall assure that it be done under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified in writing prior to its occurrence.

(12) Medical removal protection.

(a) Temporary medical removal and return of an employee.

(i) Temporary removal due to elevated blood lead levels.

(A) The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a periodic and a follow-up blood sampling test conducted pursuant to this section indicate that the employee's blood lead level is at or above 60 $\mu\text{g}/100\text{ g}$ of whole blood; and

(B) The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that the average of the last three blood sampling tests conducted pursuant to this section (or the average of all blood sampling tests conducted over the previous six months, whichever is longer) indicates that the employee's blood lead level is at or above 50 $\mu\text{g}/100\text{ g}$ of whole blood; provided, however, that an employee need not be removed if the last blood sampling test indicates a blood lead level at or below 40 $\mu\text{g}/100\text{ g}$ of whole blood.

(ii) Temporary removal due to a final medical determination.

(A) The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the phrase "final medical determination" shall mean the outcome of the multiple physician review mechanism or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section.

(C) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to lead, the

employer shall implement and act consistent with the recommendation.

(iii) Return of the employee to former job status.

(A) The employer shall return an employee to his or her former job status:

(I) For an employee removed due to a blood lead level at or above 60 $\mu\text{g}/100\text{ g}$, or due to an average blood lead level at or above 50 $\mu\text{g}/100\text{ g}$, when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 40 $\mu\text{g}/100\text{ g}$ of whole blood;

(II) For an employee removed due to a final medical determination, when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the requirement that an employer return an employee to his or her former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(iv) Removal of other employee special protective measure or limitations. The employer shall remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a final medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(v) Employer options pending a final medical determination. Where the multiple physician review mechanism, or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section, has not yet resulted in a final medical determination with respect to an employee, the employer shall act as follows:

(A) Removal. The employer may remove the employee from exposure to lead, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status.

(B) Return. The employer may return the employee to his or her former job status, end any special protective measures provided to the employee, and remove any limitations placed upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status, with two exceptions. If:

(I) The initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician; or

(II) The employee has been on removal status for the preceding eighteen months due to an elevated blood lead level, then the employer shall await a final medical determination.

(b) Medical removal protection benefits.

(i) Provision of medical removal protection benefits. The employer shall provide to an employee up to eighteen months of medical removal protection benefits on each occasion that

an employee is removed from exposure to lead or otherwise limited pursuant to this section.

(ii) Definition of medical removal protection benefits. For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer shall maintain the earnings, seniority and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to lead or otherwise limited.

(iii) Follow-up medical surveillance during the period of employee removal or limitation. During the period of time that an employee is removed from normal exposure to lead or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iv) Workers' compensation claims. If a removed employee files a claim for workers' compensation payments for a lead-related disability, then the employer shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the employee for treatment related expenses.

(v) Other credits. The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or receives income from employment with another employer made possible by virtue of the employee's removal.

(vi) Employees whose blood lead levels do not adequately decline within eighteen months of removal. The employer shall take the following measures with respect to any employee removed from exposure to lead due to an elevated blood lead level whose blood lead level has not declined within the past eighteen months of removal so that the employee has been returned to his or her former job status:

(A) The employer shall make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(B) The employer shall assure that the final medical determination obtained indicates whether or not the employee may be returned to his or her former job status, and if not, what steps should be taken to protect the employee's health;

(C) Where the final medical determination has not yet been obtained, or once obtained indicates that the employee may not yet be returned to his or her former job status, the employer shall continue to provide medical removal protection benefits to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to his or her former job status.

(D) Where the employer acts pursuant to a final medical determination which permits the return of the employee to his or her former job status despite what would otherwise be an

unacceptable blood lead level, later questions concerning removing the employee again shall be decided by a final medical determination. The employer need not automatically remove such an employee pursuant to the blood lead level removal criteria provided by this section.

(vii) Voluntary removal or restriction of an employee. Where an employer, although not required by this section to do so, removes an employee from exposure to lead or otherwise places limitations on an employee due to the effects of lead exposure on the employee's medical condition, the employer shall provide medical removal protection benefits to the employee equal to that required by item (12)(b)(i) of this section.

(13) Employee information and training.

(a) Training program.

(i) Each employer who has a workplace in which there is a potential exposure to airborne lead at any level shall inform employees of the content of Appendices A and B of this regulation.

(ii) The employer shall institute a training program for and assure the participation of all employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists.

(iii) The employer shall provide initial training by one hundred eighty days from the effective date for those employees covered by item (13)(a)(ii) on the standard's effective date and prior to the time of initial job assignment for those employees subsequently covered by this subsection.

(iv) The training program shall be repeated at least annually for each employee.

(v) The employer shall assure that each employee is informed of the following:

(A) The content of this standard and its appendices;

(B) The specific nature of the operations which could result in exposure to lead above the action level;

(C) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by chapter 296-62 WAC, Part E;

(D) The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females);

(E) The engineering controls and work practices associated with the employee's job assignment;

(F) The contents of any compliance plan in effect; and

(G) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

(b) Access to information and training materials.

(i) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to the director.

(iii) In addition to the information required by item (13)(a)(v), the employer shall include as part of the training

program, and shall distribute to employees, any materials pertaining to the Occupational Safety and Health Act, the regulations issued pursuant to the act, and this lead standard, which are made available to the employer by the director.

(14) Signs.

(a) General.

(i) The employer may use signs required by other statutes, regulations or ordinances in addition to, or in combination with, signs required by this subsection.

(ii) The employer shall assure that no statement appears on or near any sign required by this subsection which contradicts or detracts from the meaning of the required sign.

(b) Signs.

(i) The employer shall post the following warning signs in each work area where the PEL is exceeded:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

(ii) The employer shall assure that signs required by this subsection are illuminated and cleaned as necessary so that the legend is readily visible.

(15) Recordkeeping.

(a) Exposure monitoring.

(i) The employer shall establish and maintain an accurate record of all monitoring required in subsection (5) of this section.

(ii) This record shall include:

(A) The date(s), number, duration, location and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The type of respiratory protective devices worn, if any;

(D) Name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) The environmental variables that could affect the measurement of employee exposure.

(iii) The employer shall maintain these monitoring records for at least forty years or for the duration of employment plus twenty years, whichever is longer.

(b) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by subsection (11) of this section.

(ii) This record shall include:

(A) The name, social security number, and description of the duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to lead.

(iii) The employer shall keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under subsection (11) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information; and

(C) A copy of the results of biological monitoring.

(iv) The employer shall maintain or assure that the physician maintains those medical records for at least forty years, or for the duration of employment plus twenty years, whichever is longer.

(c) Medical removals.

(i) The employer shall establish and maintain an accurate record for each employee removed from current exposure to lead pursuant to subsection (12) of this section.

(ii) Each record shall include:

(A) The name and social security number of the employee;

(B) The date on each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status;

(C) A brief explanation of how each removal was or is being accomplished; and

(D) A statement with respect to each removal indicating whether or not the reason for the removal was an elevated blood lead level.

(iii) The employer shall maintain each medical removal record for at least the duration of an employee's employment.

(d) Availability.

(i) The employer shall make available upon request all records required to be maintained by subsection (15) of this section to the director for examination and copying.

(ii) Environmental monitoring, medical removal, and medical records required by this subsection 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. Medical removal records shall be provided in the same manner as environmental monitoring records.

(iii) Upon request, the employer shall make an employee's medical records required to be maintained by this section available to the affected employee or former employee or to a physician or other individual designated by such affected employee or former employees for examination and copying.

(e) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (15) of this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained by this section for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if requested within the period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(16) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to lead conducted pursuant to subsection (5) of this section.

(b) Observation procedures.

(i) Whenever observation of the monitoring of employee exposure to lead requires entry into an area where the use of respirators, protective clothing or equipment is required, the employer shall provide the observer with and assure the use of such respirators, clothing and such equipment, and shall require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of lead performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(17) Appendices. The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

(a) Appendix A. Substance Data Sheet for Occupational Exposure to Lead.

(i) Substance identification.

(A) Substance. Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

(B) Compounds covered by the standard. The word "lead" when used in this standard means elemental lead, all inorganic lead compounds (except those which are not biologically available due to either solubility or specific chemical interaction), and a class of organic lead compounds called lead soaps. This standard does not apply to other organic lead compounds.

(C) Uses. Exposure to lead occurs in at least 120 different occupations, including primary and secondary lead smelting, lead storage battery manufacturing, lead pigment manufacturing and use, solder manufacturing and use, shipbuilding and ship repairing, auto manufacturing, and printing.

(D) Permissible exposure. The Permissible Exposure Limit (PEL) set by the standard is 50 micrograms of lead per cubic meter of air ($50 \mu\text{g}/\text{m}^3$), averaged over an eight-hour work day.

(E) Action level. The standard establishes an action level of 30 micrograms per cubic meter of air ($30 \mu\text{g}/\text{m}^3$) time weighted average, based on an eight-hour work day. The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance, and training and education.

(ii) Health hazard data.

(A) Ways in which lead enters your body.

(I) When absorbed into your body in certain doses lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed.

(II) Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume or mist, it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion.

(III) A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood stream lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered out of your body and excreted, but some remains in your blood and other tissue. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

(B) Effects of overexposure to lead.

(I) Short-term (acute) overexposure. Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short-term dose of lead can lead to acute encephalopathy. Short-term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

(II) Long-term (chronic) overexposure.

a) Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain.

b) Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy.

c) Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression of kidney dialysis or death is possible.

d) Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders or die during the first year of childhood.

e) Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

(III) Health protection goals of the standard.

a) Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that worker blood lead (PbB) levels be maintained at or below forty micrograms per one hundred grams of whole blood (40 $\mu\text{g}/100\text{g}$). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 $\mu\text{g}/100\text{g}$ to minimize adverse reproductive health effects to the parents and to the developing fetus.

b) The measurement of your blood lead level is the most useful indicator of the amount of lead absorbed by your body. Blood lead levels (PbB) are most often reported in units of milligrams (mg) or micrograms (μg) of lead (1 mg = 1000 μg) per 100 grams (100g), 100 milliliters (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometimes PbB's are expressed in the form of mg% or $\mu\text{g}\%$. This is a shorthand notation for 100g, 100ml, or dl.

c) PbB measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. PbB measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead-related diseases, however, has focused heavily on associations between PbBs and various diseases. As a result, your PbB is an important indicator of the likelihood that you will gradually acquire a lead-related health impairment or disease.

d) Once your blood lead level climbs above 40 $\mu\text{g}/100\text{g}$, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular PbB in a given person will cause a particular effect. Studies have associated fatal encephalopathy with PbBs as low as 150 $\mu\text{g}/100\text{g}$. Other studies have shown other forms of disease in some workers with PbBs well below 80 $\mu\text{g}/100\text{g}$. Your PbB is a crucial indicator of the risks to your health, but one other factor is extremely important. This factor is the length of time you have had elevated PbBs. The longer you have an elevated PbB, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage.

e) The best way to prevent all forms of lead-related impairments and diseases—both short-term and long-term—is to maintain your PbB below 40 $\mu\text{g}/100\text{g}$. The provisions of the standard are designed with this end in mind. Your employer has prime responsibility to assure that the provisions of the standard are complied with both by the company and by individual workers. You as a worker, however, also have a responsibility to assist your employer in complying with the standard. You can play a key role in protecting your own health by learning about the lead hazards and their control, learning what the standard requires, following the standard where it governs your own action, and seeing that your employer complies with the provisions governing his actions.

(IV) Reporting signs and symptoms of health problems. You should immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you desire medical advice concerning the effects of current or past exposure to lead on your ability to have a healthy child. You should also notify your employer if you have difficulty breathing during a respirator fit test or while wearing a respirator. In each of these cases your employer must make available to you appropriate medical examinations or consultations. These must be provided at no cost to you and at a reasonable time and place.

(b) Appendix B. Employee Standard Summary. This appendix summarizes key provisions of the standard that you as a worker should become familiar with. The appendix discusses the entire standard.

(i) Permissible exposure limit (PEL). The standard sets a permissible exposure limit (PEL) of fifty micrograms of lead per cubic meter of air (50 $\mu\text{g}/\text{m}^3$), averaged over an eight-hour workday. This is the highest level of lead in air to which you may be permissibly exposed over an eight-hour workday. Since it is an eight-hour average it permits short exposures

above the PEL so long as for each eight-hour workday your average exposure does not exceed the PEL.

(ii) Exposure monitoring.

(A) If lead is present in the work place where you work in any quantity, your employer is required to make an initial determination of whether the action level is exceeded for any employee. The initial determination must include instrument monitoring of the air for the presence of lead and must cover the exposure of a representative number of employees who are reasonably believed to have the highest exposure levels. If your employer has conducted appropriate air sampling for lead in the past year he may use these results. If there have been any employee complaints of symptoms which may be attributable to exposure to lead or if there is any other information or observations which would indicate employee exposure to lead, this must also be considered as part of the initial determination. If this initial determination shows that a reasonable possibility exists that any employee may be exposed, without regard to respirators, over the action level ($30 \mu\text{g}/\text{m}^3$) your employer must set up an air monitoring program to determine the exposure level of every employee exposed to lead at your work place.

(B) In carrying out this air monitoring program, your employer is not required to monitor the exposure of every employee, but he or she must monitor a representative number of employees and job types. Enough sampling must be done to enable each employee's exposure level to be reasonably represented by at least one full shift (at least seven hours) air sample. In addition, these air samples must be taken under conditions which represent each employee's regular, daily exposure to lead.

(C) If you are exposed to lead and air sampling is performed, your employer is required to quickly notify you in writing of air monitoring results which represent your exposure. If the results indicate your exposure exceeds the PEL (without regard to your use of respirators), then your employer must also notify you of this in writing, and provide you with a description of the corrective action that will be taken to reduce your exposure.

(D) Your exposure must be rechecked by monitoring every six months if your exposure is over the action level but below the PEL. Air monitoring must be repeated every three months if you are exposed over the PEL. Your employer may discontinue monitoring for you if two consecutive measurements, taken at least two weeks apart, are below the action level. However, whenever there is a production, process, control, or personnel change at your work place which may result in new or additional exposure to lead, or whenever there is any other reason to suspect a change which may result in new or additional exposure to lead, your employer must perform additional monitoring.

(iii) Methods of compliance. Your employer is required to assure that no employee is exposed to lead in excess of the PEL. The standard establishes a priority of methods to be used to meet the PEL.

(iv) Respiratory protection.

(A) Your employer is required to provide and assure your use of respirators when your exposure to lead is not controlled below the PEL by other means. The employer must pay the cost of the respirator. Whenever you request one,

your employer is also required to provide you a respirator even if your air exposure level does not exceed the PEL. You might desire a respirator when, for example, you have received medical advice that your lead absorption should be decreased. Or, you may intend to have children in the near future, and want to reduce the level of lead in your body to minimize adverse reproductive effects. While respirators are the least satisfactory means of controlling your exposure, they are capable of providing significant protection if properly chosen, fitted, worn, cleaned, maintained, and replaced when they stop providing adequate protection.

(B) Your employer is required to select respirators from the seven types listed in Table II of the respiratory protection section of this standard (see subsection (7)(c) of this section). Any respirator chosen must be certified by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 42 CFR part 84. This respirator selection table will enable your employer to choose a type of respirator which will give you a proper amount of protection based on your airborne lead exposure. Your employer may select a type of respirator that provides greater protection than that required by the standard; that is, one recommended for a higher concentration of lead than is present in your work place. For example, a powered air purifying respirator (PAPR) is much more protective than a typical negative-pressure respirator, and may also be more comfortable to wear. A PAPR has a filter, cartridge or canister to clean the air, and a power source which continuously blows filtered air into your breathing zone. Your employer might make a PAPR available to you to ease the burden of having to wear a respirator for long periods of time. The standard provides that you can obtain a PAPR upon request.

(C) Your employer must also start a respiratory protection program. This program must include written procedures for the proper selection, use, cleaning, storage, and maintenance of respirators.

(D) Your employer must assure that your respirator facepiece fits properly. Proper fit of a respirator facepiece is critical to your protection against air borne lead. Obtaining a proper fit on each employee may require your employer to make available several different types of respirator masks. To ensure that your respirator fits properly and that facepiece leakage is minimal, your employer must give you either a qualitative or quantitative fit test as required in chapter 296-62 WAC, Part E.

(E) You must also receive from your employer proper training in the use of respirators. Your employer is required to teach you how to wear a respirator, to know why it is needed, and to understand its limitations.

(F) The standard provides that if your respirator uses filter elements, you must be given an opportunity to change the filter elements whenever an increase in breathing resistance is detected. You also must be permitted to periodically leave your work area to wash your face and respirator facepiece whenever necessary to prevent skin irritation. If you ever have difficulty breathing during a fit test or while using a respirator, your employer must make a medical examination available to you to determine whether you can safely wear a respirator. The result of this examination may be to give you

a positive pressure respirator (which reduces breathing resistance) or to provide alternative means of protection.

(v) Protective work clothing and equipment. If you are exposed to lead above the PEL, or if you are exposed to lead compounds such as lead arsenate or lead azide which can cause skin and eye irritation, your employer must provide you with protective work clothing and equipment appropriate for the hazard. If work clothing is provided, it must be provided in a clean and dry condition at least weekly, and daily if your airborne exposure to lead is greater than 200 $\mu\text{g}/\text{m}^3$. Appropriate protective work clothing and equipment can include coveralls or similar full-body work clothing, gloves, hats, shoes or disposable shoe coverlets, and face shields or vented goggles. Your employer is required to provide all such equipment at no cost to you. He or she is responsible for providing repairs and replacement as necessary and also is responsible for the cleaning, laundering or disposal of protective clothing and equipment. Contaminated work clothing or equipment must be removed in change rooms and not worn home or you will extend your exposure and expose your family since lead from your clothing can accumulate in your house, car, etc. Contaminated clothing which is to be cleaned, laundered or disposed of must be placed in closed containers in the change room. At no time may lead be removed from protective clothing or equipment by any means which disperses lead into the work room air.

(vi) Housekeeping. Your employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. Vacuuming is the preferred method of meeting this requirement, and the use of compressed air to clean floors and other surfaces is absolutely prohibited. Dry or wet sweeping, shoveling, or brushing may not be used except where vacuuming or other equally effective methods have been tried and do not work. Vacuums must be used and emptied in a manner which minimizes the reentry of lead into the work place.

(vii) Hygiene facilities and practices.

(A) The standard requires that change rooms, showers and filtered air lunchrooms be constructed and made available to workers exposed to lead above the PEL. When the PEL is exceeded, the employer must assure that food and beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, except in these facilities. Change rooms, showers and lunchrooms, must be used by workers exposed in excess of the PEL. After showering, no clothing or equipment worn during the shift may be worn home and this includes shoes and underwear. Your own clothing worn during the shift should be carried home and cleaned carefully so that it does not contaminate your home. Lunchrooms may not be entered with protective clothing or equipment unless surface dust has been removed by vacuuming, downdraft booth or other cleaning methods. Finally, workers exposed above the PEL must wash both their hands and faces prior to eating, drinking, smoking or applying cosmetics.

(B) All of the facilities and hygiene practices just discussed are essential to minimize additional sources of lead absorption from inhalation or ingestion of lead that may accumulate on you, your clothes or your possessions. Strict compliance with these provisions can virtually eliminate sev-

eral sources of lead exposure which significantly contribute to excessive lead absorption.

(viii) Medical surveillance.

(A) The medical surveillance program is part of the standard's comprehensive approach to the prevention of lead-related disease. Its purpose is to supplement the main thrust of the standard which is aimed at minimizing airborne concentrations of lead and sources of ingestion. Only medical surveillance can determine if the other provisions of the standard have effectively protected you as an individual. Compliance with the standard's provision will protect most workers from the adverse effects of lead exposure, but may not be satisfactory to protect individual workers (I) who have high body burdens of lead acquired over past years, (II) who have additional uncontrolled sources of nonoccupational lead exposure, (III) who exhibit unusual variations in lead absorption rates, or (IV) who have specific nonwork related medical conditions which could be aggravated by lead exposure (e.g., renal disease, anemia). In addition, control systems may fail, or hygiene and respirator programs may be inadequate. Periodic medical surveillance of individual workers will help detect those failures. Medical surveillance will also be important to protect your reproductive ability - regardless of whether you are a man or a woman.

(B) All medical surveillance required by the standard must be performed by or under the supervision of a licensed physician. The employer must provide required medical surveillance without cost to employees and at a reasonable time and place. The standard's medical surveillance program has two parts - periodic biological monitoring, and medical examinations.

(C) Your employer's obligation to offer medical surveillance is triggered by the results of the air monitoring program. Medical surveillance must be made available to all employees who are exposed in excess of the action level for more than 30 days a year. The initial phase of the medical surveillance program, which included blood lead level tests and medical examinations, must be completed for all covered employees no later than 180 days from the effective date of this standard. Priority within this first round of medical surveillance must be given to employees whom the employer believes to be at greatest risk from continued exposure (for example, those with the longest prior exposure to lead, or those with the highest current exposure). Thereafter, the employer must periodically make medical surveillance - both biological monitoring and medical examinations - available to all covered employees.

(D) Biological monitoring under the standard consists of blood lead level (PbB) and zinc protoporphyrin tests at least every six months after the initial PbB test. A zinc protoporphyrin (ZPP) test is a very useful blood test which measures an effect of lead on your body. If a worker's PbB exceeds 40 $\mu\text{g}/100\text{g}$, the monitoring frequency must be increased from every six months to at least every two months and not reduced until two consecutive PbBs indicate a blood lead level below 40 $\mu\text{g}/100\text{g}$. Each time your PbB is determined to be over 40 $\mu\text{g}/100\text{g}$, your employer must notify you of this in writing within five working days of the receipt of the test results. The employer must also inform you that the standard requires temporary medical removal with economic protec-

tion when your PbB exceeds certain criteria (see Discussion of Medical Removal Protection - subsection (12)). During the first year of the standard, this removal criterion is 80 $\mu\text{g}/100\text{g}$. Anytime your PbB exceeds 80 $\mu\text{g}/100\text{g}$ your employer must make available to you a prompt follow-up PbB test to ascertain your PbB. If the two tests both exceed 80 $\mu\text{g}/100\text{g}$ and you are temporarily removed, then your employer must make successive PbB tests available to you on a monthly basis during the period of your removal.

(E) Medical examinations beyond the initial one must be made available on an annual basis if your blood lead levels exceeds 40 $\mu\text{g}/100\text{g}$ at any time during the preceding year. The initial examination will provide information to establish a baseline to which subsequent data can be compared. An initial medical examination must also be made available (prior to assignment) for each employee being assigned for the first time to an area where the airborne concentration of lead equals or exceeds the action level. In addition, a medical examination or consultation must be made available as soon as possible if you notify your employer that you are experiencing signs or symptoms commonly associated with lead poisoning or that you have difficulty breathing while wearing a respirator or during a respirator fit test. You must also be provided a medical examination or consultation if you notify your employer that you desire medical advice concerning the effects of current or past exposure to lead on your ability to procreate a healthy child.

(F) Finally, appropriate follow-up medical examinations or consultations may also be provided for employees who have been temporarily removed from exposure under the medical removal protection provisions of the standard (see item (ix) below).

(G) The standard specifies the minimum content of pre-assignment and annual medical examinations. The content of other types of medical examinations and consultations is left up to the sound discretion of the examining physician. Pre-assignment and annual medical examinations must include (I) a detailed work history and medical history, (II) a thorough physical examination, and (III) a series of laboratory tests designed to check your blood chemistry and your kidney function. In addition, at any time upon your request, a laboratory evaluation of male fertility will be made (microscopic examination of a sperm sample), or a pregnancy test will be given.

(H) The standard does not require that you participate in any of the medical procedures, tests, etc., which your employer is required to make available to you. Medical surveillance can, however, play a very important role in protecting your health. You are strongly encouraged, therefore, to participate in a meaningful fashion. Generally, your employer will choose the physician who conducts medical surveillance under the lead standard - unless you and your employer can agree on the choice of a physician or physicians. Some companies and unions have agreed in advance, for example, to use certain independent medical laboratories or panels of physicians. Any of these arrangements are acceptable so long as required medical surveillance is made available to workers.

(I) The standard requires your employer to provide certain information to a physician to aid in his or her examina-

tion of you. This information includes (I) the standard and its appendices, (II) a description of your duties as they relate to lead exposure, (III) your exposure level, (IV) a description of personal protective equipment you wear, (V) prior blood level results, and (VI) prior written medical opinions concerning you that the employer has. After a medical examination or consultation the physician must prepare a written report which must contain (I) the physician's opinion as to whether you have any medical conditions which places you at increased risk of material impairment to health from exposure to lead, (II) any recommended special protective measures to be provided to you, (III) any blood lead level determinations, and (IV) any recommended limitation on your use of respirators. This last element must include a determination of whether you can wear a powered air purifying respirator (PAPR) if you are found unable to wear a negative pressure respirator.

(J) The medical surveillance program of the lead standard may at some point in time serve to notify certain workers that they have acquired a disease or other adverse medical condition as a result of occupational lead exposure. If this is true these workers might have legal rights to compensation from public agencies, their employers, firms that supply hazardous products to their employers, or other persons. Some states have laws, including worker compensation laws, that disallow a worker to learn of a job-related health impairment to sue, unless the worker sues within a short period of time after learning of the impairment. (This period of time may be a matter of months or years.) An attorney can be consulted about these possibilities. It should be stressed that WISHA is in no way trying to either encourage or discourage claims or lawsuits. However, since results of the standard's medical surveillance program can significantly affect the legal remedies of a worker who has acquired a job-related disease or impairment, it is proper for WISHA to make you aware of this.

(K) The medical surveillance section of the standard also contains provisions dealing with chelation. Chelation is the use of certain drugs (administered in pill form or injected into the body) to reduce the amount of lead absorbed in body tissues. Experience accumulated by the medical and scientific communities has largely confirmed the effectiveness of this type of therapy for the treatment of very severe lead poisoning. On the other hand it has also been established that there can be a long list of extremely harmful side effects associated with the use of chelating agents. The medical community has balanced the advantages and disadvantages resulting from the use of chelating agents in various circumstances and has established when the use of these agents is acceptable. The standard includes these accepted limitations due to a history of abuse of chelation therapy by some lead companies. The most widely used chelating agents are calcium disodium EDTA, ($\text{Ca Na}_2\text{EDTA}$), Calcium Disodium Versenate (Versenate), and d-penicillamine (penicillamine or Cupramine).

(L) The standard prohibits "prophylactic chelation" of any employee by any person the employer retains, supervises or controls. "Prophylactic chelation" is the routine use of chelating or similarly acting drugs to prevent elevated blood levels in workers who are occupationally exposed to lead, or

the use of these drugs to routinely lower blood lead levels to predesignated concentrations believed to be safe. It should be emphasized that where an employer takes a worker who has no symptoms of lead poisoning and has chelation carried out by a physician (either inside or outside of a hospital) solely to reduce the worker's blood lead level, that will generally be considered prophylactic chelation. The use of a hospital and a physician does not mean that prophylactic chelation is not being performed. Routine chelation to prevent increased or reduce current blood lead levels is unacceptable whatever the setting.

(M) The standard allows the use of "therapeutic" or "diagnostic" chelation if administered under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring. Therapeutic chelation responds to severe lead poisoning where there are marked symptoms. Diagnostic chelation, involves giving a patient a dose of the drug then collecting all urine excreted for some period of time as an aid to the diagnosis of lead poisoning.

(N) In cases where the examining physician determines that chelation is appropriate, you must be notified in writing of this fact before such treatment. This will inform you of a potentially harmful treatment, and allow you to obtain a second opinion.

(ix) Medical removal protection.

(A) Excessive lead absorption subjects you to increased risk of disease. Medical removal protection (MRP) is a means of protecting you when for whatever reasons, other methods, such as engineering controls, work practices, and respirators, have failed to provide the protection you need. MRP involves the temporary removal of a worker from his or her regular job to a place of significantly lower exposure without any loss of earnings, seniority, or other employment rights or benefits. The purpose of this program is to cease further lead absorption and allow your body to naturally excrete lead which has previously been absorbed. Temporary medical removal can result from an elevated blood lead level, or a medical opinion. Up to eighteen months of protection is provided as a result of either form of removal. The vast majority of removed workers, however, will return to their former jobs long before this eighteen month period expires. The standard contains special provisions to deal with the extraordinary but possible case where a long-term worker's blood lead level does not adequately decline during eighteen months of removal.

(B) During the first year of the standard, if your blood lead level is 80 $\mu\text{g}/100\text{g}$ or above you must be removed from any exposure where your air lead level without a respirator would be 100 $\mu\text{g}/\text{m}^3$ or above. If you are removed from your normal job you may not be returned until your blood lead level declines to at least 60 $\mu\text{g}/100\text{g}$. These criteria for removal and return will change according to the following schedule:

TABLE 1

Effective Date	Removal Blood Level ($\mu\text{g}/100\text{g}$)	Air Lead ($\mu\text{g}/\text{m}^3$)	Return Blood Lead ($\mu\text{g}/100\text{g}$)
9/6/81	At or above 70	50 or above	At or below 50
9/6/82	At or above 60	30 or above	At or below 40
9/6/84	At or above 50	30 or above	At or below 40
	averaged over six months		

(C) You may also be removed from exposure even if your blood lead levels are below these criteria if a final medical determination indicates that you temporarily need reduced lead exposure for medical reasons. If the physician who is implementing your employer's medical program makes a final written opinion recommending your removal or other special protective measures, your employer must implement the physician's recommendation. If you are removed in this manner, you may only be returned when the physician indicates it is safe for you to do so.

(D) The standard does not give specific instructions dealing with what an employer must do with a removed worker. Your job assignment upon removal is a matter for you, your employer and your union (if any) to work out consistent with existing procedures for job assignments. Each removal must be accomplished in a manner consistent with existing collective bargaining relationships. Your employer is given broad discretion to implement temporary removals so long as no attempt is made to override existing agreements. Similarly, a removed worker is provided no right to veto an employer's choice which satisfies the standard.

(E) In most cases, employers will likely transfer removed employees to other jobs with sufficiently low lead exposure. Alternatively, a worker's hours may be reduced so that the time weighted average exposure is reduced, or he or she may be temporarily laid off if no other alternative is feasible.

(F) In all of these situations, MRP benefits must be provided during the period of removal - i.e., you continue to receive the same earnings, seniority, and other rights and benefits you would have had if you had not been removed. Earnings include more than just your base wage; it includes overtime, shift differentials, incentives, and other compensation you would have earned if you had not been removed. During the period of removal you must also be provided with appropriate follow-up medical surveillance. If you were removed because your blood lead level was too high, you must be provided with a monthly blood test. If a medical opinion caused your removal, you must be provided medical tests or examinations that the physician believes to be appropriate. If you do not participate in this follow-up medical surveillance, you may lose your eligibility for MRP benefits.

(G) When you are medically eligible to return to your former job, your employer must return you to your "former job status." This means that you are entitled to the position, wages, benefits, etc., you would have had if you had not been removed. If you would still be in your old job if no removal had occurred, that is where you go back. If not, you are returned consistent with whatever job assignment discretion your employer would have had if no removal had occurred. MRP only seeks to maintain your rights, not expand them or diminish them.

(H) If you are removed under MRP and you are also eligible for worker compensation or other compensation for lost wages, your employer's MRP benefits obligation is reduced by the amount that you actually receive from these other sources. This is also true if you obtain other employment during the time you are laid off with MRP benefits.

(I) The standard also covers situations where an employer voluntarily removes a worker from exposure to

lead due to the effects of lead on the employee's medical condition, even though the standard does not require removal. In these situations MRP benefits must still be provided as though the standard required removal. Finally, it is important to note that in all cases where removal is required, respirators cannot be used as a substitute. Respirators may be used before removal becomes necessary, but not as an alternative to a transfer to a low exposure job, or to a lay-off with MRP benefits.

(x) Employee information and training.

(A) Your employer is required to provide an information and training program for all employees exposed to lead above the action level or who may suffer skin or eye irritation from lead. This program must inform these employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. In addition, your employer must make readily available to all employees, including those exposed below the action level, a copy of the standard and its appendices and must distribute to all employees any materials provided to the employer under the Washington Industrial Safety and Health Act (WISHA).

(B) Your employer is required to complete this training for all employees by March 4, 1981. After this date, all new employees must be trained prior to initial assignment to areas where there is possibility of exposure over the action level. This training program must also be provided at least annually thereafter.

(xi) Signs. The standard requires that the following warning sign be posted in work areas where the exposure to lead exceeds the PEL:

WARNING
LEAD WORK AREA
NO SMOKING OR EATING

(xii) Recordkeeping.

(A) Your employer is required to keep all records of exposure monitoring for airborne lead. These records must include the name and job classification of employees measured, details of the sampling and analytic techniques, the results of this sampling and the type of respiratory protection being worn by the person sampled. Your employer is also required to keep all records of biological monitoring and medical examination results. These must include the names of the employees, the physician's written opinion and a copy of the results of the examination. All of the above kinds of records must be kept for 40 years, or for at least 20 years after your termination of employment, whichever is longer.

(B) Recordkeeping is also required if you are temporarily removed from your job under the MRP program. This record must include your name and social security number, the date of your removal and return, how the removal was or is being accomplished, and whether or not the reason for the removal was an elevated blood lead level. Your employer is required to keep each medical removal record only for as long as the duration of an employee's employment.

(C) The standard requires that if you request to see or copy environmental monitoring, blood lead level monitoring, or medical removal records, they must be made available to

you or to a representative that you authorize. Your union also has access to these records. Medical records other than PbBs must also be provided to you upon request, to your physician or to any other person whom you may specifically designate. Your union does not have access to your personal medical records unless you authorize their access.

(xiii) Observations of monitoring. When air monitoring for lead is performed at your work place as required by this standard, your employer must allow you or someone you designate to act as an observer of the monitoring. Observers are entitled to an explanation of the measurement procedure, and to record the results obtained. Since results will not normally be available at the time of the monitoring, observers are entitled to record or receive the results of the monitoring when returned by the laboratory. Your employer is required to provide the observer with any personal protective devices required to be worn by employees working in the areas that is being monitored. The employer must require the observer to wear all such equipment and to comply with all other applicable safety and health procedures.

(xiv) Effective date. The standard's effective date is September 6, 1980, and the employer's obligation under the standard begin to come into effect as of that date. The standard was originally adopted as WAC 296-62-07349 and later recodified to WAC 296-62-07521.

(c) Appendix C. Medical Surveillance Guidelines.

(i) Introduction.

(A) The primary purpose of the Washington Industrial Safety and Health Act of 1973 is to assure, so far as possible, safe and healthful working conditions for every working man and woman. The occupational health standard for inorganic lead* was promulgated to protect workers exposed to inorganic lead including metallic lead, all inorganic lead compounds and organic lead soaps.

*The term inorganic lead used throughout the medical surveillance appendices is meant to be synonymous with the definition of lead set forth in the standard.

(B) Under this final standard in effect as of September 6, 1980, occupational exposure to inorganic lead is to be limited to 50 µg/m³ (micrograms per cubic meter) based on an eight-hour time-weighted average (TWA). This level of exposure eventually must be achieved through a combination of engineering, work practice and other administrative controls. Periods of time ranging from one to ten years are provided for different industries to implement these controls which are based on individual industry considerations. Until these controls are in place, respirators must be used to meet the 50 µg/m³ exposure limit.

(C) The standard also provides for a program of biological monitoring and medical surveillance for all employees exposed to levels of inorganic lead above the action level of 30 µg/m³ for more than thirty days per year.

(D) The purpose of this document is to outline the medical surveillance provisions of the standard for inorganic lead, and to provide further information to the physician regarding the examination and evaluation of workers exposed to inorganic lead.

(E) Item (ii) provides a detailed description of the monitoring procedure including the required frequency of blood testing for exposed workers, provisions for medical removal

protection (MRP), the recommended right of the employee to a second medical opinion, and notification and recordkeeping requirements of the employer. A discussion of the requirements for respirator use and respirator monitoring and WISHA's position on prophylactic chelation therapy are also included in this section.

(F) Item (iii) discusses the toxic effects and clinical manifestations of lead poisoning and effects of lead intoxication on enzymatic pathways in heme synthesis. The adverse effects on both male and female reproductive capacity and on the fetus are also discussed.

(G) Item (iv) outlines the recommended medical evaluation of the worker exposed to inorganic lead including details of the medical history, physical examination, and recommended laboratory tests, which are based on the toxic effects of lead as discussed in item (ii).

(H) Item (v) provides detailed information concerning the laboratory tests available for the monitoring of exposed workers. Included also is a discussion of the relative value of each test and the limitations and precautions which are necessary in the interpretation of the laboratory results.

(I) Airborne levels to be achieved without reliance on respirator protection through a combination of engineering and work practice or other administrative controls are illustrated in the following table:

Industry	Permissible Lead Level/Compliance Date		
	200µg/m ³	100µg/m ³	50µg/m ³
Primary Lead Production	1973	06/29/84	06/29/91
Secondary Lead Production	1973	06/29/84	06/29/91
Lead Acid Battery Manufacturing	1973	06/29/83	06/29/91
Automobile Mfg./Solder, Grinding	1973	N/A	03/08/97
Electronics, Gray Iron Foundries, Ink Mfg., Paints and Coatings Mfg., Can Mfg., Wallpaper Mfg., and Printing.	1973	N/A	06/29/91
Lead Chemical Mfg., Non-ferrous Foundries, Leaded Steel Mfg., Battery Breaking in the Collection and Processing of Scrap (when not a part of secondary lead smelter) Secondary Copper Smelter, Brass and Bronze Ingot Production.	1973	N/A	N/A ^{1*}
All Other Industries	1973	N/A	09/08/92

* Feasibility of achieving the PEL by engineering and work practice controls for these industries has yet to be resolved in court, therefore no date has been scheduled.

(ii) Medical surveillance and monitoring requirements for workers exposed to inorganic lead.

(A) Under the occupational health standard for inorganic lead, a program of biological monitoring and medical surveillance is to be made available to all employees exposed to lead above the action level of 30 µg/m³ TWA for more than thirty days each year. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule which is defined by previous laboratory results, worker complaints or concerns, and the clinical assessment of the examining physician.

(B) Under this program, the blood lead level of all employees who are exposed to lead above the action level of 30 µg/m³ is to be determined at least every six months. The frequency is increased to every two months for employees whose last blood lead level was between 40µg/100g whole blood and the level requiring employee medical removal to be discussed below. For employees who are removed from exposure to lead due to an elevated blood lead, a new blood lead level must be measured monthly. Zinc protoporphyrin (ZPP) measurement is required on each occasion that a blood lead level measurement is made.

(C) An annual medical examination and consultation performed under the guidelines discussed in item (iv) is to be made available to each employee for whom a blood test conducted at any time during the preceding twelve months indicated a blood lead level at or above 40µg/100g. Also, an examination is to be given to all employees prior to their assignment to an area in which airborne lead concentrations reach or exceed the action level. In addition, a medical examination must be provided as soon as possible after notification by an employee that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice regarding lead exposure and the ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during respirator use. An examination is also to be made available to each employee removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited or specially protected pursuant to medical recommendations.

(D) Results of biological monitoring or the recommendations of an examining physician may necessitate removal of an employee from further lead exposure pursuant to the standard's medical removal program (MRP). The object of the MRP program is to provide temporary medical removals to workers either with substantially elevated blood lead levels or otherwise at risk of sustaining material health impairment from continued substantial exposure to lead. The following guidelines which are summarized in Table 10 were created under the standard for the temporary removal of an exposed employee and his or her subsequent return to work in an exposure area.

TABLE 10
EFFECTIVE DATE

		Sept. 6, 1980	Sept. 6, 1981	Sept. 6, 1982	Sept. 6, 1983	Sept. 6, 1984
A.	Blood lead level requiring employee medical removal (level must be confirmed with second follow-up blood lead level within two weeks of first report).	>80 µg/100g.	>70 µg/100g.	>60 µg/100g.	>60 µg/100g.	>60 µg/100g or average of last three blood samples or all blood samples over previous 6 months (whichever is over a longer time period) is 50 µg/100g. or greater unless last sample is 40 µg/100g or less.
B.	Frequency which employees exposed is action level of lead (30 µg/m ³ TWA) must have blood lead level checked. (ZPP is also required in each occasion that a blood test is obtained):					
	1. Last blood lead level less than 40 µg/100g	Every 6 months.	Every 6 months.	Every 6 months.	Every 6 months.	Every 6 months.
	2. Last blood lead level between 40 µg/100g and level requiring medical removal (see A above)	Every 2 months.	Every 2 months.	Every 2 months.	Every 2 months.	Every 2 months.
	3. Employees removed from exposure to lead because of an elevated blood lead level	Every 1 month.	Every 1 month.	Every 1 month.	Every 1 month.	Every 1 month.
C.	Permissible airborne exposure limit for workers removed from work due to an elevated blood lead level (without regard to respirator protection).	100 µg/m ³ 8 hr TWA	50 µg/m ³ 8 hr TWA	30 µg/m ³ 8 hr TWA	30 µg/m ³ 8 hr TWA	30 µg/m ³ 8 hr TWA
D.	Blood lead level confirmed with a second blood analysis, at which employee may return to work. Permissible exposure without regard to respirator protection is listed by industry in Table 1.	60 µg/100g	50 µg/100g	40 µg/100g	40 µg/100g	40 µg/100g

Note: Where medical opinion indicates that an employee is at risk of material impairment from exposure to lead, the physician can remove an employee from exposure exceeding the action level (or less) or recommend special protective measures as deemed appropriate and necessary. Medical monitoring during the medical removal period can be more stringent than noted in the table above if the physician so specifies. Return to work or removal of limitations and special protections is permitted when the physician indicates that the worker is no longer at risk of material impairment.

(E) Under the standard's ultimate worker removal criteria, a worker is to be removed from any work having any eight-hour TWA exposure to lead of 30 µg/m³ or more whenever either of the following circumstances apply. (I) a blood lead level of 60 µg/100g or greater is obtained and confirmed by a second follow-up blood lead level performed within two weeks after the employer receives the results of the first blood sample test, or (II) the average of the previous three blood lead determinations or the average of all blood lead determinations conducted during the previous six months, whichever encompasses the longest time period, equals or exceeds 50 µg/100g, unless the last blood sample indicates a blood lead level at or below 40 µg/100g, in which case the employee need not be removed. Medical removal is to continue until two consecutive blood lead levels are 40 µg/100g or less.

(F) During the first two years that the ultimate removal criteria are being phased in, the return criteria have been set to assure that a worker's blood lead level has substantially declined during the period of removal. From March 1, 1979, to March 1, 1980, the blood lead level requiring employee

medical removal is 80 µg/100g. Workers found to have a confirmed blood lead at this level or greater need only be removed from work having a daily eight hour TWA exposure to lead at or above 100 µg/m³. Workers so removed are to be returned to work when their blood lead levels are at or below 60 µg/100g of whole blood. From March 1, 1980, to March 1, 1981, the blood lead level requiring medical removal is 70 µg/100g. During this period workers need only be removed from jobs having a daily eight hour TWA exposure to lead at or above 50 µg/m³ and are to be returned to work when a level of 50 µg/100g is achieved. Beginning March 1, 1981, return depends on the worker's blood lead level declining to 40 µg/100g of whole blood.

(G) As part of the standard, the employer is required to notify in writing each employee whose whole blood lead level exceeds 40 µg/100g. In addition, each such employee is to be informed that the standard requires medical removal with MRP benefits, discussed below, when an employee's blood lead level exceeds the above defined limits.

(H) In addition to the above blood lead level criteria, temporary worker removal may also take place as a result of

medical determinations and recommendations. Written medical opinions must be prepared after each examination pursuant to the standard. If the examining physician includes medical finding, determination or opinion that the employee has a medical condition which places the employee at increased risk of material health impairment from exposure to lead, then the employee must be removed from exposure to lead at or above the action level. Alternatively, if the examining physician recommends special protective measures for an employee (e.g., use of a powered air purifying respirator) or recommends limitations on an employee's exposure to lead, then the employer must implement these recommendations. Recommendations may be more stringent than the specific provisions of the standard. The examining physician, therefore, is given broad flexibility to tailor special protective procedures to the needs of individual employees. This flexibility extends to the evaluation and management of pregnant workers and male and female workers who are planning to conceive children. Based on the history, physical examination, and laboratory studies, the physician might recommend special protective measures or medical removal for an employee who is pregnant or who is planning to conceive a child when, in the physician's judgment, continued exposure to lead at the current job would pose a significant risk. The return of the employee to his or her former job status, or the removal of special protections or limitations, depends upon the examining physician determining that the employee is no longer at increased risk of material impairment or that the special measures are no longer needed.

(I) During the period of any form of special protection or removal, the employer must maintain the worker's earnings, seniority, and other employment rights and benefits (as though the worker has not been removed) for a period of up to eighteen months. This economic protection will maximize meaningful worker participation in the medical surveillance program, and is appropriate as part of the employer's overall obligation to provide a safe and healthful work place. The provisions of MRP benefits during the employee's removal period may, however, be conditioned upon participation in medical surveillance.

(J) On rare occasions, an employee's blood lead level may not acceptably decline within eighteen months of removal. This situation will arise only in unusual circumstances, thus the standard relies on an individual medical examination to determine how to protect such an employee. This medical determination is to be based on both laboratory values, including lead levels, zinc protoporphyrin levels, blood counts, and other tests felt to be warranted, as well as the physician's judgment that any symptoms or findings on physical examination are a result of lead toxicity. The medical determination may be that the employee is incapable of ever safely returning to his or her former job status. The medical determination may provide additional removal time past eighteen months for some employees or specify special protective measures to be implemented.

(K) The lead standard provides for a multiple physician review in cases where the employee wishes a second opinion concerning potential lead poisoning or toxicity. If an employee wishes a second opinion, he or she can make an appointment with a physician of his or her choice. This sec-

ond physician will review the findings, recommendations or determinations of the first physician and conduct any examinations, consultations or tests deemed necessary in an attempt to make a final medical determination. If the first and second physicians do not agree in their assessment they must try to resolve their differences. If they cannot reach an agreement then they must designate a third physician to resolve the dispute.

(L) The employer must provide examining and consulting physicians with the following specific information: A copy of the lead regulations and all appendices, a description of the employee's duties as related to exposure, the exposure level to lead and any other toxic substances (if applicable), a description of personal protective equipment used, blood lead levels, and all prior written medical opinions regarding the employee in the employer's possession or control. The employer must also obtain from the physician and provide the employee with a written medical opinion containing blood lead levels, the physician's opinion as to whether the employee is at risk of material impairment to health, any recommended protective measures for the employee if further exposure is permitted, as well as any recommended limitations upon an employee's use of respirators.

(M) Employers must instruct each physician not to reveal to the employer in writing or in any other way his or her findings, laboratory results, or diagnoses which are felt to be unrelated to occupational lead exposure. They must also instruct each physician to advise the employee of any occupationally or nonoccupationally related medical condition requiring further treatment or evaluation.

(N) The standard provides for the use of respirators when engineering and other primary controls have not been fully implemented. However, the use of respirator protection shall not be used in lieu of temporary medical removal due to elevated blood lead levels or findings that an employee is at risk of material health impairment. This is based on the numerous inadequacies of respirators including skin rash where the facepiece makes contact with the skin, unacceptable stress to breathing in some workers with underlying cardiopulmonary impairment, difficulty in providing adequate fit, the tendency for respirators to create additional hazards by interfering with vision, hearing, and mobility, and the difficulties of assuring the maximum effectiveness of a complicated work practice program involving respirators. Respirators do, however, serve a useful function where engineering and work practice are inadequate by providing interim or short-term protection, provided they are properly selected for the environment in which the employee will be working, properly fitted to the employee, maintained and cleaned periodically, and worn by the employee when required.

(O) In its final standard on occupational exposure to inorganic lead, WISHA has prohibited prophylactic chelation. Diagnostic and therapeutic chelation are permitted only under the supervision of a licensed physician with appropriate medical monitoring in an acceptable clinical setting. The decision to initiate chelation therapy must be made on an individual basis and take into account the severity of symptoms felt to be a result of lead toxicity along with blood lead levels, ZPP levels and other laboratory tests as appropriate. EDTA and penicillamine, which are the primary chelating

agents used in the therapy of occupational lead poisoning, have significant potential side effects and their use must be justified on the basis of expected benefits to the worker.

(P) Unless frank and severe symptoms are present, therapeutic chelation is not recommended given the opportunity to remove a worker from exposure and allow the body to naturally excrete accumulated lead. As a diagnostic aid, the chelation mobilization test using CA-EDTA has limited applicability. According to some investigators, the tests can differentiate between lead-induced and other nephropathies. The test may also provide an estimation of the mobile fraction of the total body lead burden.

(Q) Employers are required to assure that accurate records are maintained on exposure monitoring, medical surveillance, and medical removal for each employee. Exposure monitoring and medical surveillance records must be kept for forty years or the duration of employment plus twenty years, whichever is longer, while medical removal records must be maintained for the duration of employment. All records required under the standard must be made available upon request to representatives of the director of the department of labor and industries. Employers must also make environmental and biological monitoring and medical removal records available to affected employees and to former employees or their authorized employee representatives. Employees or their specifically designated representatives have access to their entire medical surveillance records.

(R) In addition, the standard requires that the employer inform all workers exposed to lead at or above the action level of the provisions of the standard and all its appendices, the purpose and description of medical surveillance and provisions for medical removal protection if temporary removal is required. An understanding of the potential health effects of lead exposure by all exposed employees along with full understanding of their rights under the lead standard is essential for an effective monitoring program.

(iii) Adverse health effects of inorganic lead.

(A) Although the toxicity of lead has been known for 2,000 years, the knowledge of the complex relationship between lead exposure and human response is still being refined. Significant research into the toxic properties of lead continues throughout the world, and it should be anticipated that our understanding of thresholds of effects and margins of safety will be improved in future years. The provisions of the lead standard are founded on two prime medical judgments; first, the prevention of adverse health effects from exposure to lead throughout a working lifetime requires that worker blood lead levels be maintained at or below 40 $\mu\text{g}/100\text{g}$, and second, the blood lead levels of workers, male or female, who intend to parent in the near future should be maintained below 30 $\mu\text{g}/100\text{g}$ to minimize adverse reproduction health effects to the parent and developing fetus. The adverse effects of lead on reproduction are being actively researched and WISHA encourages the physician to remain abreast of recent developments in the area to best advise pregnant workers or workers planning to conceive children.

(B) The spectrum of health effects caused by lead exposure can be subdivided into five developmental states; normal, physiological changes of uncertain significance, pathophysiological changes, overt symptoms (morbidity), and

mortality. Within this process there are no sharp distinctions, but rather a continuum of effects. Boundaries between categories overlap due to the wide variation of individual responses and exposures in the working population. WISHA's development of the lead standard focused on pathophysiological changes as well as later stages of disease.

(I) Heme synthesis inhibition.

a) The earliest demonstrated effect of lead involves its ability to inhibit at least two enzymes of the heme synthesis pathway at very low blood levels. Inhibition of delta aminolevulinic acid dehydrase (ALA-D) which catalyzes the conversion of delta-aminolevulinic acid (ALA) to protoporphyrin is observed at a blood lead level below 20 $\mu\text{g}/100\text{g}$ whole blood. At a blood lead level of 40 $\mu\text{g}/100\text{g}$, more than twenty percent of the population would have seventy percent inhibition of ALA-D. There is an exponential increase in ALA excretion at blood lead levels greater than 40 $\mu\text{g}/100\text{g}$.

b) Another enzyme, ferrochelatase, is also inhibited at low blood lead levels. Inhibition of ferrochelatase leads to increased free erythrocyte protoporphyrin (FEP) in the blood which can then bind to zinc to yield zinc protoporphyrin. At a blood lead level of 50 $\mu\text{g}/100\text{g}$ or greater, nearly 100 percent of the population will have an increase FEP. There is also an exponential relationship between blood lead levels greater than 40 $\mu\text{g}/100\text{g}$ and the associated ZPP level, which has led to the development of the ZPP screening test for lead exposure.

c) While the significance of these effects is subject to debate, it is WISHA's position that these enzyme disturbances are early stages of a disease process which may eventually result in the clinical symptoms of lead poisoning. Whether or not the effects do progress to the later stages of clinical disease, disruption of these enzyme processes over a working lifetime is considered to be a material impairment of health.

d) One of the eventual results of lead-induced inhibition of enzymes in the heme synthesis pathway is anemia which can be asymptomatic if mild but associated with a wide array of symptoms including dizziness, fatigue, and tachycardia when more severe. Studies have indicated that lead levels as low as 50 $\mu\text{g}/100\text{g}$ can be associated with a definite decreased hemoglobin, although most cases of lead-induced anemia, as well as shortened red-cell survival times, occur at lead levels exceeding 80 $\mu\text{g}/100\text{g}$. Inhibited hemoglobin synthesis is more common in chronic cases whereas shortened erythrocyte life span is more common in acute cases.

e) In lead-induced anemias, there is usually a reticulocytosis along with the presence of basophilic stippling, and ringed sideroblasts, although none of the above are pathognomonic for lead-induced anemia.

(II) Neurological effects.

a) Inorganic lead had been found to have toxic effects on both the central and peripheral nervous systems. The earliest stage of lead-induced central nervous system effects first manifest themselves in the form of behavioral disturbances and central nervous system symptoms including irritability, restlessness, insomnia and other sleep disturbances, fatigue, vertigo, headache, poor memory, tremor, depression, and apathy. With more severe exposure, symptoms can progress

to drowsiness, stupor, hallucinations, delirium, convulsions and coma.

b) The most severe and acute form of lead poisoning which usually follows ingestion or inhalation of large amounts of lead is acute encephalopathy which may arise precipitously with the onset of intractable seizures, coma, cardiorespiratory arrest, and death within 48 hours.

c) While there is disagreement about what exposure levels are needed to produce the earliest symptoms, most experts agree that symptoms definitely can occur at blood lead levels of 60 $\mu\text{g}/100\text{g}$ whole blood and therefore recommend a 40 $\mu\text{g}/100\text{g}$ maximum. The central nervous system effects frequently are not reversible following discontinued exposure or chelation therapy and when improvement does occur, it is almost always only partial.

d) The peripheral neuropathy resulting from lead exposure characteristically involves only motor function with minimal sensory damage and has a marked predilection for the extensor muscles of the most active extremity. The peripheral neuropathy can occur with varying degrees of severity. The earliest and mildest form which can be detected in workers with blood lead levels as low as 50 $\mu\text{g}/100\text{g}$ is manifested by slowing or motor nerve conduction velocity often without clinical symptoms. With progression of the neuropathy there is development of painless extensor muscle weakness usually involving the extensor muscles of the fingers and hand in the most active upper extremity, followed in severe cases by wrist drop, much less commonly, foot drop.

e) In addition to slowing of nerve conduction, electromyographical studies in patients with blood lead levels greater than 50 $\mu\text{g}/100\text{g}$ have demonstrated a decrease in the number of acting motor unit potentials, an increase in the duration of motor unit potentials, and spontaneous pathological activity including fibrillations and fasciculation. Whether these effects occur at levels of 40 $\mu\text{g}/100\text{g}$ is undetermined.

f) While the peripheral neuropathies can occasionally be reversed with therapy, again such recovery is not assured particularly in the more severe neuropathies and often improvement is only partial. The lack of reversibility is felt to be due in part to segmental demyelination.

(III) Gastrointestinal. Lead may also effect the gastrointestinal system producing abdominal colic or diffuse abdominal pain, constipation, obstipation, diarrhea, anorexia, nausea and vomiting. Lead colic rarely develops at blood lead levels below 80 $\mu\text{g}/100\text{g}$.

(IV) Renal.

a) Renal toxicity represents one of the most serious health effects of lead poisoning. In the early stages of disease nuclear inclusion bodies can frequently be identified in proximal renal tubular cells. Renal functions remain normal and the changes in this stage are probably reversible. With more advanced disease there is progressive interstitial fibrosis and impaired renal function. Eventually extensive interstitial fibrosis ensues with sclerotic glomeruli and dilated and atrophied proximal tubules; all represent end stage kidney disease. Azotemia can be progressive, eventually resulting in frank uremia necessitating dialysis. There is occasionally associated hypertension and hyperuricemia with or without gout.

b) Early kidney disease is difficult to detect. The urinalysis is normal in early lead nephropathy and the blood urea nitrogen and serum creatinine increase only when two-thirds of kidney function is lost. Measurement of creatinine clearance can often detect earlier disease as can other methods of measurement of glomerular filtration rate. An abnormal Ca-EDTA mobilization test has been used to differentiate between lead-induced and other nephropathies, but this procedure is not widely accepted. A form of Fanconi syndrome with aminoaciduria, glycosuria, and hyperphosphaturia indicating severe injury to the proximal renal tubules is occasionally seen in children.

(V) Reproductive effects.

a) Exposure to lead can have serious effects on reproductive function in both males and females. In male workers exposed to lead there can be a decrease in sexual drive, impotence, decreased ability to produce healthy sperm, and sterility. Malformed sperm (teratospermia), decreased number of sperm (hypospermia), and sperm with decreased motility (asthenospermia) can occur. Teratospermia has been noted at mean blood lead levels of 53 $\mu\text{g}/100\text{g}$ and hypospermia and asthenospermia at 41 $\mu\text{g}/100\text{g}$. Furthermore, there appears to be a dose-response relationship for teratospermia in lead exposed workers.

b) Women exposed to lead may experience menstrual disturbances including dysmenorrhea, menorrhagia and amenorrhea. Following exposure to lead, women have a higher frequency of sterility, premature births, spontaneous miscarriages, and stillbirths.

c) Germ cells can be affected by lead and cause genetic damage in the egg or sperm cells before conception and result in failure to implant, miscarriage, stillbirth, or birth defects.

d) Infants of mothers with lead poisoning have a higher mortality during the first year and suffer from lowered birth weights, slower growth, and nervous system disorders.

e) Lead can pass through the placental barrier and lead levels in the mother's blood are comparable to concentrations of lead in the umbilical cord at birth. Transplacental passage becomes detectable at 12-14 weeks of gestation and increases until birth.

f) There is little direct data on damage to the fetus from exposure to lead but it is generally assumed that the fetus and newborn would be at least as susceptible to neurological damage as young children. Blood lead levels of 50-60 $\mu\text{g}/100\text{g}$ in children can cause significant neurobehavioral impairments, and there is evidence of hyperactivity at blood levels as low as 25 $\mu\text{g}/100\text{g}$. Given the overall body of literature concerning the adverse health effects of lead in children, WISHA feels that the blood lead level in children should be maintained below 30 $\mu\text{g}/100\text{g}$ with a population mean of 15 $\mu\text{g}/100\text{g}$. Blood lead levels in the fetus and newborn likewise should not exceed 30 $\mu\text{g}/100\text{g}$.

g) Because of lead's ability to pass through the placental barrier and also because of the demonstrated adverse effects of lead on reproductive function in both males and females as well as the risk of genetic damage of lead on both the ovum and sperm, WISHA recommends a 30 $\mu\text{g}/100\text{g}$ maximum permissible blood lead level in both males and females who wish to bear children.

(IV) Other toxic effects.

a) Debate and research continue on the effects of lead on the human body. Hypertension has frequently been noted in occupationally exposed individuals although it is difficult to assess whether this is due to lead's adverse effects on the kidneys or if some other mechanism is involved.

b) Vascular and electrocardiographic changes have been detected but have not been well characterized. Lead is thought to impair thyroid function and interfere with the pituitary-adrenal axis, but again these effects have not been well defined.

(iv) Medical evaluation.

(A) The most important principle in evaluating a worker for any occupational disease including lead poisoning is a high index of suspicion on the part of the examining physician. As discussed in Section (ii), lead can affect numerous organ systems and produce a wide array of signs and symptoms, most of which are nonspecific and subtle in nature at least in the early stages of disease. Unless serious concern for lead toxicity is present, many of the early clues to diagnosis may easily be overlooked.

(B) The crucial initial step in the medical evaluation is recognizing that a worker's employment can result in exposure to lead. The worker will frequently be able to define exposures to lead and lead-containing materials but often will not volunteer this information unless specifically asked. In other situations the worker may not know of any exposures to lead but the suspicion might be raised on the part of the physician because of the industry or occupation of the worker. Potential occupational exposure to lead and its compounds occur in at least 120 occupations, including lead smelting, the manufacture of lead storage batteries, the manufacture of lead pigments and products containing pigments, solder manufacture, shipbuilding and ship repair, auto manufacturing, construction, and painting.

(C) Once the possibility for lead exposure is raised, the focus can then be directed toward eliciting information from the medical history, physical exam, and finally from laboratory data to evaluate the worker for potential lead toxicity.

(D) A complete and detailed work history is important in the initial evaluation. A listing of all previous employment with information on work processes, exposure to fumes or dust, known exposures to lead or other toxic substances, respiratory protection used, and previous medical surveillance should all be included in the worker's record. Where exposure to lead is suspected, information concerning on-the-job personal hygiene, smoking or eating habits in work areas, laundry procedures, and use of any protective clothing or respiratory protection equipment should be noted. A complete work history is essential in the medical evaluation of a worker with suspected lead toxicity, especially when long-term effects such as neurotoxicity and nephrotoxicity are considered.

(E) The medical history is also of fundamental importance and should include a listing of all past and current medical conditions, current medications including proprietary drug intake, previous surgeries and hospitalizations, allergies, smoking history, alcohol consumption, and also nonoccupational lead exposures such as hobbies (hunting, riflery). Also known childhood exposures should be elicited. Any previous history of hematological, neurological, gastrointestinal,

renal, psychological, gynecological, genetic, or reproductive problems should be specifically noted.

(F) A careful and complete review of systems must be performed to assess both recognized complaints and subtle or slowly acquired symptoms which the worker might not appreciate as being significant. The review of symptoms should include the following:

General	- weight loss, fatigue, decreased appetite.
Head, Eyes, Ears, Nose, Throat (HEENT)	- headaches, visual disturbance or decreased visual acuity, hearing deficits or tinnitus, pigmentation of the oral mucosa, or metallic taste in mouth.
Cardiopulmonary	- shortness of breath, cough, chest pains, palpitations, or orthopnea.
Gastrointestinal	- nausea, vomiting, heartburn, abdominal pain, constipation or diarrhea.
Neurologic	- irritability, insomnia, weakness (fatigue), dizziness, loss of memory, confusion, hallucinations, incoordination, ataxia, decreased strength in hands or feet, disturbance in gait, difficulty in climbing stairs, or seizures.
Hematologic	- pallor, easy fatigability, abnormal blood loss, melena.
Reproductive (male or female and spouse where relevant)	- history of infertility, impotence, loss of libido, abnormal menstrual periods, history of miscarriages, stillbirths, or children with birth defects.
Musculoskeletal	- muscle and joint pains.

(G) The physical examination should emphasize the neurological, gastrointestinal, and cardiovascular systems. The worker's weight and blood pressure should be recorded and the oral mucosa checked for pigmentation characteristic of a possible Burtonian or lead line on the gingiva. It should be noted, however, that the lead line may not be present even in severe lead poisoning if good oral hygiene is practiced.

(H) The presence of pallor on skin examination may indicate an anemia, which if severe might also be associated with a tachycardia. If an anemia is suspected, an active search for blood loss should be undertaken including potential blood loss through the gastrointestinal tract.

(I) A complete neurological examination should include an adequate mental status evaluation including a search for behavioral and psychological disturbances, memory testing, evaluation for irritability, insomnia, hallucinations, and mental clouding. Gait and coordination should be examined along with close observation for tremor. A detailed evaluation of peripheral nerve function including careful sensory and motor function testing is warranted. Strength testing particu-

larly of extensor muscle groups of all extremities is of fundamental importance.

(J) Cranial nerve evaluation should also be included in the routine examination.

(K) The abdominal examination should include auscultation for bowel sounds and abnormal bruits and palpation for organomegaly, masses, and diffuse abdominal tenderness.

(L) Cardiovascular examination should evaluate possible early signs of congestive heart failure. Pulmonary status should be addressed particularly if respirator protection is contemplated.

(M) As part of the medical evaluation, the lead standard requires the following laboratory studies.

(I) Blood lead level.

(II) Hemoglobin and hematocrit determinations, red cell indices, and examination of the peripheral blood smear to evaluate red blood cell morphology.

(III) Blood urea nitrogen.

(IV) Serum creatinine.

(V) Routine urinalysis with microscopic examination.

(VI) A zinc protoporphyrin level.

(N) In addition to the above, the physician is authorized to order any further laboratory or other tests which he or she deems necessary in accordance with sound medical practice. The evaluation must also include pregnancy testing or laboratory evaluation of male fertility if requested by the employee.

(O) Additional tests which are probably not warranted on a routine basis but may be appropriate when blood lead and ZPP levels are equivocal include delta aminolevulinic acid and coproporphyrin concentrations in the urine, and dark-field illumination for detection of basophilic stippling in red blood cells.

(P) If an anemia is detected further studies including a careful examination of the peripheral smear, reticulocyte count, stool for occult blood, serum iron, total iron binding capacity, bilirubin, and, if appropriate vitamin B12 and folate may be of value in attempting to identify the cause of the anemia.

(Q) If a peripheral neuropathy is suspected, nerve conduction studies are warranted both for diagnosis and as a basis to monitor any therapy.

(R) If renal disease is questioned, a 24-hour urine collection for creatinine clearance, protein, and electrolytes may be indicated. Elevated uric acid levels may result from lead-induced renal disease and a serum uric acid level might be performed.

(S) An electrocardiogram and chest x-ray may be obtained as deemed appropriate.

(T) Sophisticated and highly specialized testing should not be done routinely and where indicated should be under the direction of a specialist.

(v) Laboratory evaluation.

(A) The blood level at present remains the single most important test to monitor lead exposure and is the test used in the medical surveillance program under the lead standard to guide employee medical removal. The ZPP has several advantages over the blood lead level. Because of its relatively recent development and the lack of extensive data concerning its interpretation, the ZPP currently remains an ancillary test.

(B) This section will discuss the blood lead level and ZPP in detail and will outline their relative advantages and disadvantages. Other blood tests currently available to evaluate lead exposure will also be reviewed.

(C) The blood lead level is a good index of current or recent lead absorption when there is no anemia present and when the worker has not taken any chelating agents. However, blood lead levels along with urinary lead levels do not necessarily indicate the total body burden of lead and are not adequate measures of past exposure. One reason for this is that lead has a high affinity for bone and up to 90 percent of the body's total lead is deposited there. A very important component of the total lead body burden is lead in soft tissue (liver, kidneys, and brain). This fraction of the lead body burden, the biologically active lead, is not entirely reflected by blood lead levels since it is a function of the dynamics of lead absorption, distribution, deposition in bone and excretion. Following discontinuation of exposure to lead, the excess body burden is only slowly mobilized from bone and other relatively stable stores and excreted. Consequently, a high blood lead level may only represent recent heavy exposure to lead without a significant total body excess and likewise a low blood lead level does not exclude an elevated total body burden of lead.

(D) Also due to its correlation with recent exposures, the blood lead level may vary considerably over short time intervals.

(E) To minimize laboratory error and erroneous results due to contamination, blood specimens must be carefully collected after thorough cleaning of the skin with appropriate methods using lead-free containers and analyzed by a reliable laboratory. Under the standard, samples must be analyzed in laboratories which are approved by the Center for Disease Control (CDC) or which have received satisfactory grades in proficiency testing by the CDC in the previous year. Analysis is to be made using atomic absorption spectrophotometry anodic stripping; voltammetry or any method which meets the accuracy requirements set forth by the standard.

(F) The determination of lead in urine is generally considered a less reliable monitoring technique than analysis of whole blood primarily due to individual variability in urinary excretion capacity as well as the technical difficulty of obtaining accurate 24 hour urine collections. In addition, workers with renal insufficiency, whether due to lead or some other cause, may have decreased lead clearance and consequently urine lead levels may underestimate the true lead burden. Therefore, urine lead levels should not be used as a routine test.

(G) The zinc protoporphyrin test, unlike the blood lead determination, measures an adverse metabolic effect of lead and as such is a better indicator of lead toxicity than the level of blood lead itself. The level of ZPP reflects lead absorption over the preceding three to four months, and therefore is a better indicator of lead body burden. The ZPP requires more time than the blood lead to read significantly elevated levels; the return to normal after discontinuing lead exposure is also slower. Furthermore, the ZPP test is simpler, faster, and less expensive to perform and no contamination is possible. Many investigators believe it is the most reliable means of monitoring chronic lead absorption.

(H) Zinc protoporphyrin results from the inhibition of the enzyme ferrochelatase which catalyzes the insertion of an iron molecule into the protoporphyrin molecule, which then becomes heme. If iron is not inserted into the molecule then zinc, having a greater affinity for protoporphyrin, takes place in the iron, forming ZPP.

(I) An elevation in the level of circulating ZPP may occur at blood lead levels as low as 20-30 $\mu\text{g}/100\text{g}$ in some workers. Once the blood lead level has reached 40 $\mu\text{g}/100\text{g}$ there is more marked rise in the ZPP value from its normal range of less than 100 $\mu\text{g}/100\text{ml}$. Increases in blood lead levels beyond 40 $\mu\text{g}/100\text{g}$ are associated with exponential increases in ZPP.

(J) Whereas blood lead levels fluctuate over short time spans, ZPP levels remain relatively stable. ZPP is measured directly in red blood cells and is present for the cell's entire 120 day lifespan. Therefore, the ZPP level in blood reflects the average ZPP production over the previous three to four months and consequently the average lead exposure during that time interval.

(K) It is recommended that a hematocrit be determined whenever a confirmed ZPP of 50 $\mu\text{g}/100\text{ml}$ whole blood is obtained to rule out a significant underlying anemia. If the ZPP is in excess of 100 $\mu\text{g}/100\text{ml}$ and not associated with abnormal elevations in blood lead levels, the laboratory should be checked to be sure the blood leads were determined using atomic absorption spectrophotometry, anodic stripping voltammetry or any method which meets the accuracy requirements set forth by the standard, by a CDC approved laboratory which is experienced in lead level determinations. Repeat periodic blood lead studies should be obtained in all individuals with elevated ZPP levels to be certain that an associated elevated blood lead level has not been missed due to transient fluctuations in blood leads.

(L) ZPP has characteristic fluorescence spectrum with a peak at 594nm which is detectable with a hematofluorimeter. The hematofluorimeter is accurate and portable and can provide on-site, instantaneous results for workers who can be frequently tested via a finger prick.

(M) However, careful attention must be given to calibration and quality control procedures. Limited data on blood lead - ZPP correlations and the ZPP levels which are associated with the adverse health effects discussed in item (ii) are the major limitations of the test. Also it is difficult to correlate ZPP levels with environmental exposure and there is some variation of response with age and sex. Nevertheless, the ZPP promises to be an important diagnostic test for the early detection of lead toxicity and its value will increase as more data is collected regarding its relationship to other manifestations of lead poisoning.

(N) Levels of delta-aminolevulinic acid (ALA) in the urine are also used as a measure of lead exposure. Increasing concentrations of ALA are believed to result from the inhibition of the enzyme delta-aminolevulinic acid dehydrase (ALA-D). Although the test is relatively easy to perform, inexpensive, and rapid, the disadvantages include variability in results, the necessity to collect a complete 24 hour urine sample which has a specific gravity greater than 1.010, and also the fact that ALA decomposes in the presence of light.

(O) The pattern of porphyrin excretion in the urine can also be helpful in identifying lead intoxication. With lead poisoning, the urine concentrations of coproporphyrins I and II, porphobilinogen and uroporphyrin I rise. The most important increase, however, is that of coproporphyrin III; levels may exceed 5,000 $\mu\text{g}/\text{l}$ in the urine in lead poisoned individuals, but its correlation with blood lead levels and ZPP are not as good as those of ALA. Increases in urinary porphyrins are not diagnostic of lead toxicity and may be seen in porphyria, some liver diseases, and in patients with high reticulocyte counts.

(vi) Summary.

(A) The WISHA standard for inorganic lead places significant emphasis on the medical surveillance of all workers exposed to levels of inorganic lead above the action level of 30 $\mu\text{g}/\text{m}^3$ TWA. The physician has a fundamental role in this surveillance program, and in the operation of the medical removal protection program.

(B) Even with adequate worker education on the adverse health effects of lead and appropriate training in work practices, personal hygiene and other control measures, the physician has a primary responsibility for evaluating potential lead toxicity in the worker. It is only through a careful and detailed medical and work history, a complete physical examination and appropriate laboratory testing that an accurate assessment can be made. Many of the adverse health effects of lead toxicity are either irreversible or only partially reversible and therefore early detection of disease is very important.

(C) This document outlines the medical monitoring program as defined by the occupational safety and health standard for inorganic lead. It reviews the adverse health effects of lead poisoning and describes the important elements of the history and physical examinations as they relate to these adverse effects.

(D) It is hoped that this review and discussion will give the physician a better understanding of the WISHA standard with the ultimate goal of protecting the health and well-being of the worker exposed to lead under his or her care.

(d) Appendix D. Recommendations to employers concerning high-risk tasks (nonmandatory).

The department advises employers that the following tasks have a high risk for lead overexposure (this list is not complete; other tasks also can result in lead over-exposure):

- Any open flame operation involving lead-containing solder in a manner producing molten solder, including the manufacture or repair of motor vehicle radiators;
- Sanding, cutting or grinding of lead-containing solder;
- Breaking, recycling or manufacture of lead-containing batteries;
- Casting objects using lead, brass, or lead-containing alloys;
- Where lead-containing coatings or paints are present:
 - abrasive blasting
 - welding
 - cutting
 - torch burning
 - manual demolition of structures
 - manual scraping
 - manual sanding
 - heat gun applications
 - power tool cleaning

- rivet busting
- clean-up activities where dry expendable abrasives are used
- abrasive blasting enclosure movement and removal;
- Spray-painting with lead-containing paint;
- Using lead-containing mortar;
- Lead burning;
- Operation or cleaning of shooting facilities where lead bullets are used;
- Formulation or processing of lead-containing pigments or paints;
- Cutting, burning, or melting of lead-containing materials.

The department recommends that annual blood lead testing be offered to all employees potentially overexposed to lead, including those performing the tasks listed above, regardless of air lead levels. Research has shown that air lead levels often do not accurately predict workers' lead overexposure. The blood lead testing will provide the most information if performed during a period of peak lead exposure.

Employers should be aware that the United States Public Health Service has set a goal of eliminating occupational exposures which result in whole blood lead levels of 25 µg/dl or greater. This goal should guide whether employees' blood lead levels indicate lead overexposure.

If blood lead levels are elevated in an employee performing a task associated with lead overexposure, employers should assess the maintenance and effectiveness of exposure controls, hygiene facilities, respiratory protection program, the employee's work practices and personal hygiene, and the employee's respirator use, if any. If a deficiency exists in any of these areas, the employer should correct the problem.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07521, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07521, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 96-09-030, § 296-62-07521, filed 4/10/96, effective 6/1/96; 95-04-078, § 296-62-07521, filed 1/30/95, effective 3/2/95; 91-24-017 (Order 91-07), § 296-62-07521, filed 11/22/91, effective 12/24/91; 90-17-051 (Order 90-10), § 296-62-07521, filed 8/13/90, effective 9/24/90; 90-03-029 (Order 89-20), § 296-62-07521, filed 1/11/90, effective 2/26/90; 88-14-108 (Order 88-11), § 296-62-07521, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-62-07521, filed 11/30/83; 82-13-045 (Order 82-22), § 296-62-07521, filed 6/11/82. Formerly WAC 296-62-07349.]

WAC 296-62-07523 Benzene. (1) Scope and application.

(a) This section applies to all occupational exposures to benzene. Chemical Abstracts Service Registry No. 71-43-2, except as provided in (b) and (c) of this subsection.

(b) This section does not apply to:

(i) The storage, transportation, distribution, dispensing, sale or use of gasoline, motor fuels, or other fuels containing benzene subsequent to its final discharge from bulk wholesale storage facilities, except that operations where gasoline or motor fuels are dispensed for more than four hours per day in an indoor location are covered by this section.

(ii) Loading and unloading operations at bulk wholesale storage facilities which use vapor control systems for all loading and unloading operations, except for the provisions of WAC 296-62-054 and 296-800-170 as incorporated into

this section and the emergency provisions of subsections (7) and (9)(d) of this section.

(iii) The storage, transportation, distribution, or sale of benzene or liquid mixtures containing more than 0.1 percent benzene in intact containers or in transportation pipelines while sealed in such a manner as to contain benzene vapors or liquid, except for the provisions of WAC 296-62-054 and 296-800-170 as incorporated into this section and the emergency provisions of subsections (7) and (9)(d) of this section.

(iv) Containers and pipelines carrying mixtures with less than 0.1 percent benzene and natural gas processing plants processing gas with less than 0.1 percent benzene.

(v) Work operations where the only exposure to benzene is from liquid mixtures containing 0.5 percent or less of benzene by volume, or the vapors released from such liquids until September 12, 1988; work operations where the only exposure to benzene is from liquid mixtures containing 0.3 percent or less of benzene by volume or the vapors released from such liquids from September 12, 1988, to September 12, 1989; and work operations where the only exposure to benzene is from liquid mixtures containing 0.1 percent or less of benzene by volume or the vapors released from such liquids after September 12, 1989; except that tire building machine operators using solvents with more than 0.1 percent benzene are covered by subsection (9) of this section.

(vi) Oil and gas drilling, production, and servicing operations.

(vii) Coke oven batteries.

(c) The cleaning and repair of barges and tankers which have contained benzene are excluded from subsection (6) of this section (Methods of compliance), subsection (5)(a) of this section (General), and subsection (5)(f) of this section (Accuracy of monitoring). Engineering and work practice controls shall be used to keep exposures below 10 ppm unless it is proven to be not feasible.

(2) Definitions.

(a) "Action level" means an airborne concentration of benzene of 0.5 ppm calculated as an 8-hour time-weighted average.

(b) "Authorized person" means any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under subsection (5) of this section, or any other person authorized by the Washington Industrial Safety and Health Act (WISHA) or regulations issued under WISHA.

(c) "Benzene" (C₆H₆) (CAS Registry No. 71-43-2) means liquefied or gaseous benzene. It includes benzene contained in liquid mixtures and the benzene vapors released by these liquids. It does not include trace amounts of unreacted benzene contained in solid materials.

(d) "Bulk wholesale storage facility" means a bulk terminal or bulk plant where fuel is stored prior to its delivery to wholesale customers.

(e) "Container" means any barrel, bottle, can, cylinder, drum, reaction vessel, storage tank, or the like, but does not include piping systems.

(f) "Day" means any part of a calendar day.

(g) "Director" means the director of the department of labor and industries, or his/her designated representative.

(h) "Emergency" means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which may or does result in an unexpected significant release of benzene.

(i) "Employee exposure" means exposure to airborne benzene which would occur if the employee were not using respiratory protective equipment.

(j) "Regulated area" means any area where airborne concentrations of benzene exceed or can reasonably be expected to exceed, the permissible exposure limits, either the 8-hour time-weighted average exposure of 1 ppm or the short-term exposure limit of 5 ppm for fifteen minutes.

(k) "Vapor control system" means any equipment used for containing the total vapors displaced during the loading of gasoline, motor fuel, or other fuel tank trucks and the displacing of these vapors through a vapor processing system or balancing the vapor with the storage tank. This equipment also includes systems containing the vapors displaced from the storage tank during the unloading of the tank truck which balance the vapors back to the tank truck.

(3) Permissible exposure limits (PELs).

(a) Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of one part of benzene per million parts of air (1 ppm) as an 8-hour time-weighted average.

(b) Short-term exposure limit (STEL). The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of 5 ppm as averaged over any fifteen minute period.

(4) Regulated areas.

(a) The employer shall establish a regulated area whenever the airborne concentration of benzene exceeds or can reasonably be expected to exceed the permissible exposure limits, either the 8-hour time-weighted average exposure of 1 ppm or the short-term exposure limit of 5 ppm for fifteen minutes.

(b) Access to regulated areas shall be limited to authorized persons.

(c) Regulated areas shall be determined from the rest of the workplace in any manner that minimizes the number of employees exposed to benzene within the regulated area.

(5) Exposure monitoring.

(a) General.

(i) Determinations of employee exposure shall be made from breathing zone air samples that are representative of each employee's average exposure to airborne benzene.

(ii) Representative 8-hour TWA employee exposures shall be determined on the basis of one sample or samples representing the full shift exposure for each job classification in each work area.

(iii) Determinations of compliance with the STEL shall be made from fifteen minute employee breathing zone samples measured at operations where there is reason to believe exposures are high, such as where tanks are opened, filled, unloaded, or gauged; where containers or process equipment are opened and where benzene is used for cleaning or as a solvent in an uncontrolled situation. The employer may use

objective data, such as measurements from brief period measuring devices, to determine where STEL monitoring is needed.

(iv) Except for initial monitoring as required under (b) of this subsection, where the employer can document that one shift will consistently have higher employee exposures for an operation, the employer shall only be required to determine representative employee exposure for that operation during the shift on which the highest exposure is expected.

(b) Initial monitoring.

(i) Each employer who has a place of employment covered under subsection (1)(a) of this section shall monitor each of these workplaces and work operations to determine accurately the airborne concentrations of benzene to which employees may be exposed.

(ii) The initial monitoring required under (b)(i) of this subsection shall be completed by sixty days after the effective date of this standard or within thirty days of the introduction of benzene into the workplace. Where the employer has monitored within one year prior to the effective date of this standard and the monitoring satisfies all other requirements of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of (b)(i) of this subsection.

(c) Periodic monitoring and monitoring frequency.

(i) If the monitoring required by (b)(i) of this subsection reveals employee exposure at or above the action level but at or below the TWA, the employer shall repeat such monitoring for each such employee at least every year.

(ii) If the monitoring required by (b)(i) of this subsection reveals employee exposure above the TWA, the employer shall repeat such monitoring for each such employee at least every six months.

(iii) The employer may alter the monitoring schedule from every six months to annually for any employee for whom two consecutive measurements taken at least seven days apart indicate that the employee exposure has decreased to the TWA or below, but is at or above the action level.

(iv) Monitoring for the STEL shall be repeated as necessary to evaluate exposures of employees subject to short term exposures.

(d) Termination of monitoring.

(i) If the initial monitoring required by (b)(i) of this subsection reveals employee exposure to be below the action level the employer may discontinue the monitoring for that employee, except as otherwise required by (e) of this subsection.

(ii) If the periodic monitoring required by (c) of this subsection reveals that employee exposures, as indicated by at least two consecutive measurements taken at least seven days apart, are below the action level the employer may discontinue the monitoring for that employee, except as otherwise required by (e) of this subsection.

(e) Additional monitoring.

(i) The employer shall institute the exposure monitoring required under (b) and (c) of this subsection when there has been a change in the production, process, control equipment, personnel, or work practices which may result in new or additional exposures to benzene, or when the employer has any

reason to suspect a change which may result in new or additional exposures.

(ii) Whenever spills, leaks, ruptures, or other breakdowns occur that may lead to employee exposure, the employer shall monitor (using area or personal sampling) after the cleanup of the spill or repair of the leak, rupture or other breakdown to ensure that exposures have returned to the level that existed prior to the incident.

(f) Accuracy of monitoring. Monitoring shall be accurate, to a confidence level of ninety-five percent, to within plus or minus twenty-five percent for airborne concentrations of benzene.

(g) Employee notification of monitoring results.

(i) The employer shall, within fifteen working days after the receipt of the results of any monitoring performed under this standard, notify each employee of these results in writing either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) Whenever the PELs are exceeded, the written notification required by (g)(i) of this subsection shall contain the corrective action being taken by the employer to reduce the employee exposure to or below the PEL, or shall refer to a document available to the employee which states the corrective actions to be taken.

(6) Methods of compliance.

(a) Engineering controls and work practices.

(i) The employer shall institute engineering controls and work practices to reduce and maintain employee exposure to benzene at or below the permissible exposure limits, except to the extent that the employer can establish that these controls are not feasible or where the provisions of (a)(iii) of this subsection or subsection (7)(a) of this section apply.

(ii) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the PELs, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection which complies with the requirements of subsection (7) of this section.

(iii) Where the employer can document that benzene is used in a workplace less than a total of thirty days per year, the employer shall use engineering controls, work practice controls or respiratory protection or any combination of these controls to reduce employee exposure to benzene to or below the PELs, except that employers shall use engineering and work practice controls, if feasible, to reduce exposure to or below 10 ppm as an 8-hour TWA.

(b) Compliance program.

(i) When any exposures are over the PEL, the employer shall establish and implement a written program to reduce employee exposure to or below the PEL primarily by means of engineering and work practice controls, as required by (a) of this subsection.

(ii) The written program shall include a schedule for development and implementation of the engineering and work practice controls. These plans shall be reviewed and revised as appropriate based on the most recent exposure monitoring data, to reflect the current status of the program.

(iii) Written compliance programs shall be furnished upon request for examination and copying to the director,

affected employees, and designated employee representatives.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Work operations for which the employer establishes that compliance with either the TWA or STEL through the use of engineering and work-practice controls is not feasible; for example some maintenance and repair activities, vessel cleaning, or other operations where engineering and work-practice controls are infeasible because exposures are intermittent and limited in duration;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient, or are not required under subsection (6)(a)(iii) of this section, to reduce exposure to or below the PELs;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1), 296-62-07131 (4)(b)(i) and (ii), and 296-62-07150 through 296-62-07156).

(ii) For air-purifying respirators, the employer must replace the air-purifying element at the expiration of its service life or at the beginning of each shift in which such elements are used, whichever comes first.

(iii) If NIOSH certifies an air-purifying element with an end-of-service-life indicator for benzene, such an element may be used until the indicator shows no further useful life.

(c) Respirator selection.

(i) The employer must select the appropriate respirator from Table 1 of this section.

(ii) Any employee who cannot use a negative-pressure respirator must be allowed to use a respirator with less breathing resistance, such as a powered air-purifying respirator or supplied-air respirator.

TABLE 1. - RESPIRATORY PROTECTION FOR BENZENE

Airborne concentration of benzene or condition of use	Respirator type
(a) Less than or equal to 10 ppm.	(1) Half-mask air-purifying respirator with organic vapor cartridge.
(b) Less than or equal to 50 ppm.	(1) Full facepiece respirator with organic vapor cartridges.
(c) Less than or equal to 100 ppm.	(1) Full facepiece gas mask with chin style canister. ¹
(d) Less than or equal to 1,000 ppm.	(1) Full facepiece powered air-purifying respirator with organic vapor canister. ¹
(e) Greater than 1,000 ppm or unknown concentration.	(1) Supplied air respirator with full facepiece in positive-pressure mode.
	(1) Self-contained breathing apparatus with full facepiece in positive-pressure mode.

TABLE 1. - RESPIRATORY PROTECTION FOR BENZENE

Airborne concentration of benzene or condition of use		Respirator type	
(f)	Escape	(2)	Full facepiece positive-pressure supplied-air respirator with auxiliary self-contained air supply.
		(1)	Any organic vapor gas mask; or
		(2)	Any self-contained breathing apparatus with full facepiece.
(g)	Firefighting	(1)	Full facepiece self-contained breathing apparatus in positive pressure mode.

¹ Canisters must have a minimum service life of four (4) hours when tested at 150 ppm benzene, at a flow rate of 64 LPM, 25° C, and 85% relative humidity for nonpowered air purifying respirators. The flow rate shall be 115 LPM and 170 LPM respectively for tight fitting and loose fitting powered air-purifying respirators.

(8) Protective clothing and equipment. Personal protective clothing and equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided by the employer at no cost to the employee and the employer shall assure its use where appropriate. Eye and face protection shall meet the requirements of WAC 296-800-160.

(9) Medical surveillance.

(a) General.

(i) The employer shall make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level thirty or more days per year; for employees who are or may be exposed to benzene at or above the PELs ten or more days per year; for employees who have been exposed to more than 10 ppm of benzene for thirty or more days in a year prior to the effective date of the standard when employed by their current employer; and for employees involved in the tire building operations called tire building machine operators, who use solvents containing greater than 0.1 percent benzene.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and that all laboratory tests are conducted by an accredited laboratory.

(iii) The employer shall assure that persons other than licensed physicians who administer the pulmonary function testing required by this section shall complete a training course in spirometry sponsored by an appropriate governmental, academic, or professional institution.

(iv) The employer shall assure that all examinations and procedures are provided without cost to the employee and at a reasonable time and place.

(b) Initial examination.

(i) Within sixty days of the effective date of this standard, or before the time of initial assignment, the employer shall provide each employee covered by (a)(i) of this subsection with a medical examination including the following elements:

(A) A detailed occupational history which includes:

(I) Past work exposure to benzene or any other hematological toxins;

(II) A family history of blood dyscrasias including hematological neoplasms;

(III) A history of blood dyscrasias including genetic hemoglobin abnormalities, bleeding abnormalities, abnormal function of formed blood elements;

(IV) A history of renal or liver dysfunction;

(V) A history of medicinal drugs routinely taken;

(VI) A history of previous exposure to ionizing radiation; and

(VII) Exposure to marrow toxins outside of the current work situation.

(B) A complete physical examination.

(C) Laboratory tests. A complete blood count including a leukocyte count with differential, a quantitative thrombocyte count, hematocrit, hemoglobin, erythrocyte count and erythrocyte indices (MCV, MCH, MCHC). The results of these tests shall be reviewed by the examining physician.

(D) Additional tests as necessary in the opinion of the examining physician, based on alterations to the components of the blood or other signs which may be related to benzene exposure.

(E) For all workers required to wear respirators for at least thirty days a year, the physical examination shall pay special attention to the cardiopulmonary system and shall include a pulmonary function test.

(ii) No initial medical examination is required to satisfy the requirements of (b)(i) of this subsection if adequate records show that the employee has been examined in accordance with the procedures of (b)(i) of this subsection within the twelve months prior to the effective date of this standard.

(c) Periodic examinations.

(i) The employer shall provide each employee covered under (a)(i) of this subsection with a medical examination annually following the previous examination. These periodic examinations shall include at least the following elements:

(A) A brief history regarding any new exposure to potential marrow toxins, changes in medicinal drug use, and the appearance of physical signs relating to blood disorders;

(B) A complete blood count including a leukocyte count with differential, quantitative thrombocyte count, hemoglobin, hematocrit, erythrocyte count and erythrocyte indices (MCV, MCH, MCHC); and

(C) Appropriate additional tests as necessary, in the opinion of the examining physician, in consequence of alterations in the components of the blood or other signs which may be related to benzene exposure.

(ii) Where the employee develops signs and symptoms commonly associated with toxic exposure to benzene, the employer shall provide the employee with an additional medical examination which shall include those elements considered appropriate by the examining physician.

(iii) For persons required to use respirators for at least thirty days a year, a pulmonary function test shall be performed every three years. A specific evaluation of the cardiopulmonary system shall be made at the time of the pulmonary function test.

(d) Emergency examinations.

(i) In addition to the surveillance required by (a)(i) of this subsection, if an employee is exposed to benzene in an emergency situation, the employer shall have the employee provide a urine sample at the end of the employee's shift and have a urinary phenol test performed on the sample within

seventy-two hours. The urine specific gravity shall be corrected to 1.024.

(ii) If the result of the urinary phenol test is below 75 mg phenol/L of urine, no further testing is required.

(iii) If the result of the urinary phenol test is equal to or greater than 75 mg phenol/L of urine, the employer shall provide the employee with a complete blood count including an erythrocyte count, leukocyte count with differential and thrombocyte count at monthly intervals for a duration of three months following the emergency exposure.

(iv) If any of the conditions specified in (e)(i) of this subsection exists, then the further requirements of (e) of this subsection shall be met and the employer shall, in addition, provide the employees with periodic examinations if directed by the physician.

(e) Additional examinations and referrals.

(i) Where the results of the complete blood count required for the initial and periodic examinations indicate any of the following abnormal conditions exist, then the blood count shall be repeated within two weeks.

(A) The hemoglobin level or the hematocrit falls below the normal limit (outside the ninety-five percent confidence interval (C.I.)) as determined by the laboratory for the particular geographic area and/or these indices show a persistent downward trend from the individual's preexposure norms; provided these findings cannot be explained by other medical reasons.

(B) The thrombocyte (platelet) count varies more than twenty percent below the employee's most recent values or falls outside the normal limit (ninety-five percent C.I.) as determined by the laboratory.

(C) The leukocyte count is below 4,000 per mm³ or there is an abnormal differential count.

(ii) If the abnormality persists, the examining physician shall refer the employee to a hematologist or an internist for further evaluation unless the physician has good reason to believe such referral is unnecessary. (See Appendix C for examples of conditions where a referral may be unnecessary.)

(iii) The employer shall provide the hematologist or internist with the information required to be provided to the physician under this subsection and the medical record required to be maintained by subsection (11)(b)(ii) of this section.

(iv) The hematologist's or internist's evaluation shall include a determination as to the need for additional tests, and the employer shall assure that these tests are provided.

(f) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this regulation and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's actual or representative exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous employment-related medical examinations of the affected employee which is not otherwise available to the examining physician.

(g) Physician's written opinions.

(i) For each examination under this section, the employer shall obtain and provide the employee with a copy of the examining physician's written opinion within fifteen days of the examination. The written opinion shall be limited to the following information:

(A) The occupationally pertinent results of the medical examination and tests;

(B) The physician's opinion concerning whether the employee has any detected medical conditions which would place the employee's health at greater than normal risk of material impairment from exposure to benzene;

(C) The physician's recommended limitations upon the employee's exposure to benzene or upon the employee's use of protective clothing or equipment and respirators.

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions resulting from benzene exposure which require further explanation or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific records, findings, and diagnoses that have no bearing on the employee's ability to work in a benzene-exposed workplace.

(h) Medical removal plan.

(i) When a physician makes a referral to a hematologist/internist as required under (e)(ii) of this subsection, the employee shall be removed from areas where exposures may exceed the action level until such time as the physician makes a determination under (h)(ii) of this subsection.

(ii) Following the examination and evaluation by the hematologist/internist, a decision to remove an employee from areas where benzene exposure is above the action level or to allow the employee to return to areas where benzene exposure is above the action level shall be made by the physician in consultation with the hematologist/internist. This decision shall be communicated in writing to the employer and employee. In the case of removal, the physician shall state the required probable duration of removal from occupational exposure to benzene above the action level and the requirements for future medical examinations to review the decision.

(iii) For any employee who is removed pursuant to (h)(ii) of this subsection, the employer shall provide a follow-up examination. The physician, in consultation with the hematologist/internist, shall make a decision within six months of the date the employee was removed as to whether the employee shall be returned to the usual job or whether the employee should be removed permanently.

(iv) Whenever an employee is temporarily removed from benzene exposure pursuant to (h)(i) or (ii) of this subsection, the employer shall transfer the employee to a comparable job for which the employee is qualified (or can be trained for in a short period) and where benzene exposures are as low as possible, but in no event higher than the action level. The employer shall maintain the employee's current wage rate, seniority, and other benefits. If there is no such job available, the employer shall provide medical removal protection benefits until such a job becomes available or for six months, whichever comes first.

(v) Whenever an employee is removed permanently from benzene exposure based on a physician's recommenda-

tion pursuant to (h)(iii) of this subsection, the employee shall be given the opportunity to transfer to another position which is available or later becomes available for which the employee is qualified (or can be trained for in a short period) and where benzene exposures are as low as possible but in no event higher than the action level. The employer shall assure that such employee suffers no reduction in current wage rate, seniority, or other benefits as a result of the transfer.

(i) Medical removal protection benefits.

(i) The employer shall provide to an employee six months of medical removal protection benefits immediately following each occasion an employee is removed from exposure to benzene because of hematological findings pursuant to (h)(i) and (ii) of this subsection, unless the employee has been transferred to a comparable job where benzene exposures are below the action level.

(ii) For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer shall maintain the current wage rate, seniority, and other benefits of an employee as though the employee had not been removed.

(iii) The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or from employment with another employer made possible by virtue of the employee's removal.

(10) Communication of benzene hazards to employees.

(a) Signs and labels.

(i) The employer shall post signs at entrances to regulated areas. The signs shall bear the following legend:

DANGER
BENZENE
CANCER HAZARD
FLAMMABLE-NO SMOKING
AUTHORIZED PERSONNEL ONLY
RESPIRATOR REQUIRED

(ii) The employer shall ensure that labels or other appropriate forms of warning are provided for containers of benzene within the workplace. There is no requirement to label pipes. The labels shall comply with the requirements of WAC 296-800-170 and in addition shall include the following legend:

DANGER
CONTAINS BENZENE
CANCER HAZARD

(b) Material safety data sheets.

(i) Employers shall obtain or develop, and shall provide access to their employees, to a material safety data sheet (MSDS) which addresses benzene and complies with WAC 296-62-054 and 296-800-170.

(ii) Employers who are manufacturers or importers shall:

(A) Comply with subsection (1) of this section; and

(B) Comply with the requirement in WISHA's hazard communication standard, WAC 296-62-054 (Hazard communication purpose), that they deliver to downstream employers an MSDS which addresses benzene.

(c) Information and training.

(i) The employer shall provide employees with information and training at the time of their initial assignment to a work area where benzene is present. If exposures are above the action level, employees shall be provided with information and training at least annually thereafter.

(ii) The training program shall be in accordance with the requirements of WAC 296-800-170, and shall include specific information on benzene for each category of information included in that section.

(iii) In addition to the information required under WAC 296-800-170, the employer shall:

(A) Provide employees with an explanation of the contents of this section, including Appendices A and B, and indicate to them where the standard is available; and

(B) Describe the medical surveillance program required under subsection (9) of this section, and explain the information contained in Appendix C.

(11) Recordkeeping.

(a) Exposure measurements.

(i) The employer shall establish and maintain an accurate record of all measurements required by subsection (5) of this section, in accordance with WAC 296-62-052.

(ii) This record shall include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(B) A description of the sampling and analytical methods used;

(C) A description of the type of respiratory protective devices worn, if any; and

(D) The name, Social Security number, job classification, and exposure levels of the employee monitored and all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least the duration of employment plus thirty years, in accordance with Part B, Access to records, WAC 296-62-052 through 296-62-05223.

(b) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by subsection (9) of this section, in accordance with WAC 296-62-052.

(ii) This record shall include:

(A) The name and Social Security number of the employee;

(B) The employer's copy of the physician's written opinion on the initial, periodic, and special examinations, including results of medical examinations and all tests, opinions, and recommendations;

(C) Any employee medical complaints related to exposure to benzene;

(D) A copy of the information provided to the physician as required by subsection (9)(f)(ii) through (v) of this section; and

(E) A copy of the employee's medical and work history related to exposure to benzene or any other hematologic toxins.

(iii) The employer shall maintain this record for at least the duration of employment plus thirty years, in accordance

with Part B, Access to records, WAC 296-62-052 through 296-62-05223.

(c) Availability.

(i) The employer shall assure that all records required to be maintained by this section shall be made available upon request to the director for examination and copying.

(ii) Employee exposure monitoring records required by this subsection shall be provided upon request for examination and copying to employees, employee representatives, and the director in accordance with WAC 296-62-05201 through 296-62-05209 and 296-62-05213 through 296-62-05217.

(iii) Employee medical records required by this subsection shall be provided upon request for examination and copying, to the subject employee, to anyone having the specific written consent of the subject employee, and to the director in accordance with WAC 296-62-052.

(d) Transfer of records.

(i) The employer shall comply with the requirements involving transfer of records set forth in WAC 296-62-05205.

(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the director, at least three months prior to disposal, and transmit them to the director if required by the director within that period.

(12) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees, or their designated representatives, an opportunity to observe the measuring or monitoring of employee exposure to benzene conducted pursuant to subsection (5) of this section.

(b) Observation procedures. When observation of the measuring or monitoring of employee exposure to benzene requires entry into areas where the use of protective clothing and equipment or respirators is required, the employer shall provide the observer with personal protective clothing and equipment or respirators required to be worn by employees working in the area, assure the use of such clothing and equipment or respirators, and require the observer to comply with all other applicable safety and health procedures.

(13) Appendices. The information contained in WAC 296-62-07525, Appendices A, B, C, and D is not intended, by itself, to create any additional obligations not otherwise imposed or to detract from any existing obligations.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07523, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07523, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 88-21-002 (Order 88-23), § 296-62-07523, filed 10/6/88, effective 11/7/88.]

WAC 296-62-07540 Formaldehyde. (1) Scope and application. This standard applies to all occupational exposures to formaldehyde, i.e., from formaldehyde gas, its solutions, and materials that release formaldehyde.

(2) Definitions. For purposes of this standard, the following definitions shall apply:

(a) "Action level" means a concentration of 0.5 part formaldehyde per million parts of air (0.5 ppm) calculated as an 8-hour time-weighted average (TWA) concentration.

(b) "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 and the National Institute for Occupational Safety and Health, the provision of WAC 296-800-370 shall apply.

(c) "Authorized person" means any person required by work duties to be present in regulated work areas, or authorized to do so by the employer, by this section of the standard, or by the WISHA Act.

(d) "Director" means the director of the department of labor and industries, or his/her designated representative.

(e) "Emergency" is any occurrence, such as but not limited to equipment failure, rupture of containers, or failure of control equipment that results in an uncontrolled release of a significant amount of formaldehyde.

(f) "Employee exposure" means the exposure to airborne formaldehyde which would occur without corrections for protection provided by any respirator that is in use.

(g) "Formaldehyde" means the chemical substance, HCHO, Chemical Abstracts Service Registry No. 50-00-0.

(3) Permissible exposure limit (PEL).

(a) TWA: The employer shall assure that no employee is exposed to an airborne concentration of formaldehyde which exceeds 0.75 part formaldehyde per million parts of air as an 8-hour TWA.

(b) Short term exposure limit (STEL): The employer shall assure that no employee is exposed to an airborne concentration of formaldehyde which exceeds two parts formaldehyde per million parts of air (2 ppm) as a fifteen-minute STEL.

(4) Exposure monitoring.

(a) General.

(i) Each employer who has a workplace covered by this standard shall monitor employees to determine their exposure to formaldehyde.

(ii) Exception. Where the employer documents, using objective data, that the presence of formaldehyde or formaldehyde-releasing products in the workplace cannot result in airborne concentrations of formaldehyde that would cause any employee to be exposed at or above the action level or the STEL under foreseeable conditions of use, the employer will not be required to measure employee exposure to formaldehyde.

(iii) When an employee's exposure is determined from representative sampling, the measurements used shall be representative of the employee's full shift or short-term exposure to formaldehyde, as appropriate.

(iv) Representative samples for each job classification in each work area shall be taken for each shift unless the employer can document with objective data that exposure levels for a given job classification are equivalent for different workshifts.

(b) Initial monitoring. The employer shall identify all employees who may be exposed at or above the action level or at or above the STEL and accurately determine the exposure of each employee so identified.

(i) Unless the employer chooses to measure the exposure of each employee potentially exposed to formaldehyde, the employer shall develop a representative sampling strategy and measure sufficient exposures within each job classification for each workshift to correctly characterize and not underestimate the exposure of any employee within each exposure group.

(ii) The initial monitoring process shall be repeated each time there is a change in production, equipment, process, personnel, or control measures which may result in new or additional exposure to formaldehyde.

(iii) If the employer receives reports or signs or symptoms of respiratory or dermal conditions associated with formaldehyde exposure, the employer shall promptly monitor the affected employee's exposure.

(c) Periodic monitoring.

(i) The employer shall periodically measure and accurately determine exposure to formaldehyde for employees shown by the initial monitoring to be exposed at or above the action level or at or above the STEL.

(ii) If the last monitoring results reveal employee exposure at or above the action level, the employer shall repeat monitoring of the employees at least every six months.

(iii) If the last monitoring results reveal employee exposure at or above the STEL, the employer shall repeat monitoring of the employees at least once a year under worst conditions.

(d) Termination of monitoring. The employer may discontinue periodic monitoring for employees if results from two consecutive sampling periods taken at least seven days apart show that employee exposure is below the action level and the STEL. The results must be statistically representative and consistent with the employer's knowledge of the job and work operation.

(e) Accuracy of monitoring. Monitoring shall be accurate, at the ninety-five percent confidence level, to within plus or minus twenty-five percent for airborne concentrations of formaldehyde at the TWA and the STEL and to within plus or minus thirty-five percent for airborne concentrations of formaldehyde at the action level.

(f) Employee notification of monitoring results. Within fifteen days of receiving the results of exposure monitoring conducted under this standard, the employer shall notify the affected employees of these results. Notification shall be in writing, either by distributing copies of the results to the employees or by posting the results. If the employee exposure is over either PEL, the employer shall develop and implement a written plan to reduce employee exposure to or below both PELs, and give written notice to employees. The written notice shall contain a description of the corrective action being taken by the employer to decrease exposure.

(g) Observation of monitoring.

(i) The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to formaldehyde required by this standard.

(ii) When observation of the monitoring of employee exposure to formaldehyde requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the clothing and equipment to the

observer, require the observer to use such clothing and equipment, and assure that the observer complies with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer shall establish regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or the STEL and post all entrances and accessways with signs bearing the following information:

DANGER

FORMALDEHYDE

IRRITANT AND POTENTIAL CANCER HAZARD

AUTHORIZED PERSONNEL ONLY

(b) The employer shall limit access to regulated areas to authorized persons who have been trained to recognize the hazards of formaldehyde.

(c) An employer at a multi-employer worksite who establishes a regulated area shall communicate the access restrictions and locations of these areas to other employers with work operations at that worksite.

(6) Methods of compliance.

(a) Engineering controls and work practices. The employer shall institute engineering and work practice controls to reduce and maintain employee exposures to formaldehyde at or below the TWA and the STEL.

(b) Exception. Whenever the employer has established that feasible engineering and work practice controls cannot reduce employee exposure to or below either of the PELs, the employer shall apply these controls to reduce employee exposures to the extent feasible and shall supplement them with respirators which satisfy this standard.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Work operations, such as maintenance and repair activities or vessel cleaning, for which the employer establishes that engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce exposure to or below the PELs;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1), 296-62-07131 (4)(b)(i) and (ii), and 296-62-07150 through 296-62-07156).

(ii) If air-purifying chemical-cartridge respirators are used, the employer must:

(A) Replace the cartridge after three hours of use or at the end of the workshift, whichever occurs first, unless the cartridge contains a NIOSH-certified end-of-service-life indicator (ESLI) to show when breakthrough occurs.

(B) Unless the canister contains a NIOSH-certified ESLI to show when breakthrough occurs, replace canisters used in atmospheres up to 7.5 ppm (10 x PEL) every four hours and

industrial-sized canisters used in atmospheres up to 75 ppm (100 x PEL) every two hours, or at the end of the workshift, whichever occurs first.

(c) Respirator selection.

(i) The employer must select appropriate respirators from Table 1 of this section.

TABLE 1
MINIMUM REQUIREMENTS FOR RESPIRATORY PROTECTION
AGAINST FORMALDEHYDE

Condition of use or formaldehyde concentration (ppm)	Minimum respirator required ¹
Up to 7.5 ppm (10 x PEL)	Full facepiece with cartridges or canisters specifically approved for protection against formaldehyde ² .
Up to 75 ppm (100 x PEL)	Full-face mask with chin style or chest or back mounted type industrial size canister specifically approved for protection against formaldehyde. Type C supplied-air respirator pressure demand or continuous flow type, with full facepiece, hood, or helmet.
Above 75 ppm or unknown (emergencies) (100 x PEL)	Self-contained breathing apparatus (SCBA) with positive-pressure full facepiece. Combination supplied-air, full facepiece positive-pressure respirator with auxiliary self-contained air supply.
Fire fighting	SCBA with positive-pressure in full facepiece.
Escape	SCBA in demand or pressure demand mode. Full-face mask with chin style or front or back mounted type industrial size canister specifically approved for protection against formaldehyde.

¹ Respirators specified for use at higher concentrations may be used at lower concentrations.

² A half-mask respirator with cartridges specifically approved for protection against formaldehyde can be substituted for the full facepiece respirator providing that effective gas-proof goggles are provided and used in combination with the half-mask respirator.

(ii) The employer must provide a powered air-purifying respirator adequate to protect against formaldehyde exposure to any employee who has difficulty using a negative-pressure respirator.

(8) Protective equipment and clothing. Employers shall comply with the provisions of WAC 296-800-160. When protective equipment or clothing is provided under these provisions, the employer shall provide these protective devices at no cost to the employee and assure that the employee wears them.

(a) Selection. The employer shall select protective clothing and equipment based upon the form of formaldehyde to be encountered, the conditions of use, and the hazard to be prevented.

(i) All contact of the eyes and skin with liquids containing one percent or more formaldehyde shall be prevented by the use of chemical protective clothing made of material impervious to formaldehyde and the use of other personal protective equipment, such as goggles and face shields, as appropriate to the operation.

(ii) Contact with irritating or sensitizing materials shall be prevented to the extent necessary to eliminate the hazard.

(iii) Where a face shield is worn, chemical safety goggles are also required if there is a danger of formaldehyde reaching the area of the eye.

(iv) Full body protection shall be worn for entry into areas where concentrations exceed 100 ppm and for emergency reentry into areas of unknown concentration.

(b) Maintenance of protective equipment and clothing.

(i) The employer shall assure that protective equipment and clothing that has become contaminated with formaldehyde is cleaned or laundered before its reuse.

(ii) When ventilating formaldehyde-contaminated clothing and equipment, the employer shall establish a storage area so that employee exposure is minimized. Containers for contaminated clothing and equipment and storage areas shall have labels and signs containing the following information:

DANGER
FORMALDEHYDE-CONTAMINATED (CLOTHING) EQUIPMENT
AVOID INHALATION AND SKIN CONTACT

(iii) The employer shall assure that only persons trained to recognize the hazards of formaldehyde remove the contaminated material from the storage area for purposes of cleaning, laundering, or disposal.

(iv) The employer shall assure that no employee takes home equipment or clothing that is contaminated with formaldehyde.

(v) The employer shall repair or replace all required protective clothing and equipment for each affected employee as necessary to assure its effectiveness.

(vi) The employer shall inform any person who launders, cleans, or repairs such clothing or equipment of formaldehyde's potentially harmful effects and of procedures to safely handle the clothing and equipment.

(9) Hygiene protection.

(a) The employer shall provide change rooms, as described in WAC 296-24-120 for employees who are required to change from work clothing into protective clothing to prevent skin contact with formaldehyde.

(b) If employees' skin may become splashed with solutions containing one percent or greater formaldehyde, for example because of equipment failure or improper work practices, the employer shall provide conveniently located quick drench showers and assure that affected employees use these facilities immediately.

(c) If there is any possibility that an employee's eyes may be splashed with solutions containing 0.1 percent or greater formaldehyde, the employer shall provide acceptable eye-wash facilities within the immediate work area for emergency use.

(10) Housekeeping. For operations involving formaldehyde liquids or gas, the employer shall conduct a program to detect leaks and spills, including regular visual inspections.

(a) Preventative maintenance of equipment, including surveys for leaks, shall be undertaken at regular intervals.

(b) In work areas where spillage may occur, the employer shall make provisions to contain the spill, to decontaminate the work area, and to dispose of the waste.

(c) The employer shall assure that all leaks are repaired and spills are cleaned promptly by employees wearing suitable protective equipment and trained in proper methods for cleanup and decontamination.

(d) Formaldehyde-contaminated waste and debris resulting from leaks or spills shall be placed for disposal in sealed containers bearing a label warning of formaldehyde's presence and of the hazards associated with formaldehyde.

(11) Emergencies. For each workplace where there is the possibility of an emergency involving formaldehyde, the employer shall assure appropriate procedures are adopted to minimize injury and loss of life. Appropriate procedures shall be implemented in the event of an emergency.

(12) Medical surveillance.

(a) Employees covered.

(i) The employer shall institute medical surveillance programs for all employees exposed to formaldehyde at concentrations at or exceeding the action level or exceeding the STEL.

(ii) The employer shall make medical surveillance available for employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde in emergencies. When determining whether an employee may be experiencing signs and symptoms of possible overexposure to formaldehyde, the employer may rely on the evidence that signs and symptoms associated with formaldehyde exposure will occur only in exceptional circumstances when airborne exposure is less than 0.1 ppm and when formaldehyde is present in materials in concentrations less than 0.1 percent.

(b) Examination by a physician. All medical procedures, including administration of medical disease questionnaires, shall be performed by or under the supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(c) Medical disease questionnaire. The employer shall make the following medical surveillance available to employees prior to assignment to a job where formaldehyde exposure is at or above the action level or above the STEL and annually thereafter. The employer shall also make the following medical surveillance available promptly upon determining that an employee is experiencing signs and symptoms indicative of possible overexposure to formaldehyde.

(i) Administration of a medical disease questionnaire, such as in Appendix D, which is designed to elicit information on work history, smoking history, any evidence of eye, nose, or throat irritation; chronic airway problems or hyperreactive airway disease; allergic skin conditions or dermatitis; and upper or lower respiratory problems.

(ii) A determination by the physician, based on evaluation of the medical disease questionnaire, of whether a medical examination is necessary for employees not required to wear respirators to reduce exposure to formaldehyde.

(d) Medical examinations. Medical examinations shall be given to any employee who the physician feels, based on information in the medical disease questionnaire, may be at increased risk from exposure to formaldehyde and at the time of initial assignment and at least annually thereafter to all

employees required to wear a respirator to reduce exposure to formaldehyde. The medical examination shall include:

(i) A physical examination with emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes.

(ii) Laboratory examinations for respirator wearers consisting of baseline and annual pulmonary function tests. As a minimum, these tests shall consist of forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and forced expiratory flow (FEF).

(iii) Any other test which the examining physician deems necessary to complete the written opinion.

(iv) Counseling of employees having medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde on the increased risk of impairment of their health.

(e) Examinations for employees exposed in an emergency. The employer shall make medical examinations available as soon as possible to all employees who have been exposed to formaldehyde in an emergency.

(i) The examination shall include a medical and work history with emphasis on any evidence of upper or lower respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose, or throat irritation.

(ii) Other examinations shall consist of those elements considered appropriate by the examining physician.

(f) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and Appendices A, C, D, and E;

(ii) A description of the affected employee's job duties as they relate to the employee's exposure to formaldehyde;

(iii) The representative exposure level for the employee's job assignment;

(iv) Information concerning any personal protective equipment and respiratory protection used or to be used by the employee; and

(v) Information from previous medical examinations of the affected employee within the control of the employer.

(vi) In the event of a nonroutine examination because of an emergency, the employer shall provide to the physician as soon as possible: A description of how the emergency occurred and the exposure the victim may have received.

(g) Physician's written opinion.

(i) For each examination required under this standard, the employer shall obtain a written opinion from the examining physician. This written opinion shall contain the results of the medical examination except that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde. The written opinion shall include:

(A) The physician's opinion as to whether the employee has any medical condition that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde;

(B) Any recommended limitations on the employee's exposure or changes in the use of personal protective equipment, including respirators;

(C) A statement that the employee has been informed by the physician of any medical conditions which would be

aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

(ii) The employer shall provide for retention of the results of the medical examination and tests conducted by the physician.

(iii) The employer shall provide a copy of the physician's written opinion to the affected employee within fifteen days of its receipt.

(h) Medical removal.

(i) The provisions of this subdivision apply when an employee reports significant irritation of the mucosa of the eyes or of the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization attributed to workplace formaldehyde exposure. Medical removal provisions do not apply in case of dermal irritation or dermal sensitization when the product suspected of causing the dermal condition contains less than 0.05% formaldehyde.

(ii) An employee's report of signs or symptoms of possible overexposure to formaldehyde shall be evaluated by a physician selected by the employer pursuant to (c) of this subsection. If the physician determines that a medical examination is not necessary under (c)(ii) of this subsection, there shall be a two-week evaluation and remediation period to permit the employer to ascertain whether the signs or symptoms subside untreated or with the use of creams, gloves, first aid treatment, or personal protective equipment. Industrial hygiene measures that limit the employee's exposure to formaldehyde may also be implemented during this period. The employee shall be referred immediately to a physician prior to expiration of the two-week period if the signs or symptoms worsen. Earnings, seniority, and benefits may not be altered during the two-week period by virtue of the report.

(iii) If the signs or symptoms have not subsided or been remedied by the end of the two-week period, or earlier if signs or symptoms warrant, the employee shall be examined by a physician selected by the employer. The physician shall presume, absent contrary evidence, that observed dermal irritation or dermal sensitization are not attributable to formaldehyde when products to which the affected employee is exposed contain less than 0.1% formaldehyde.

(iv) Medical examinations shall be conducted in compliance with the requirements of (e)(i) and (ii) of this subsection. Additional guidelines for conducting medical exams are contained in WAC 296-62-07546, Appendix C.

(v) If the physician finds that significant irritation of the mucosa of the eyes or the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization result from workplace formaldehyde exposure and recommends restrictions or removal. The employer shall promptly comply with the restrictions or recommendations of removal. In the event of a recommendation of removal, the employer shall remove the affected employee from the current formaldehyde exposure and if possible, transfer the employee to work having no or significantly less exposure to formaldehyde.

(vi) When an employee is removed pursuant to item (v) of this subdivision, the employer shall transfer the employee to comparable work for which the employee is qualified or can be trained in a short period (up to six months), where the

formaldehyde exposures are as low as possible, but not higher than the action level. The employer shall maintain the employee's current earnings, seniority, and other benefits. If there is no such work available, the employer shall maintain the employee's current earnings, seniority, and other benefits until such work becomes available, until the employee is determined to be unable to return to workplace formaldehyde exposure, until the employee is determined to be able to return to the original job status, or for six months, whichever comes first.

(vii) The employer shall arrange for a follow-up medical examination to take place within six months after the employee is removed pursuant to this subsection. This examination shall determine if the employee can return to the original job status, or if the removal is to be permanent. The physician shall make a decision within six months of the date the employee was removed as to whether the employee can be returned to the original job status, or if the removal is to be permanent.

(viii) An employer's obligation to provide earnings, seniority, and other benefits to a removed employee may be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program or from employment with another employer made possible by virtue of the employee's removal.

(ix) In making determinations of the formaldehyde content of materials under this subsection the employer may rely on objective data.

(i) Multiple physician review.

(i) After the employer selects the initial physician who conducts any medical examination or consultation to determine whether medical removal or restriction is appropriate, the employee may designate a second physician to review any findings, determinations, or recommendations of the initial physician and to conduct such examinations, consultations, and laboratory tests as the second physician deems necessary and appropriate to evaluate the effects of formaldehyde exposure and to facilitate this review.

(ii) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation for the purpose of medical removal or restriction.

(iii) The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen days after receipt of the notification of the right to seek a second medical opinion, or receipt of the initial physician's written opinion, whichever is later:

(A) The employee informs the employer of the intention to seek a second medical opinion; and

(B) The employee initiates steps to make an appointment with a second physician.

(iv) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve the disagreement. If the two physicians are unable to quickly resolve their disagreement, then the employer and the

employee through their respective physicians shall designate a third physician who shall be a specialist in the field at issue:

(A) To review the findings, determinations, or recommendations of the prior physicians; and

(B) To conduct such examinations, consultations, laboratory tests, and discussions with prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(v) In the alternative, the employer and the employee or authorized employee representative may jointly designate such third physician.

(vi) The employer shall act consistent with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(13) Hazard communication.

(a) General. Notwithstanding any exemption granted in WAC 296-800-170 for wood products, each employer who has a workplace covered by this standard shall comply with the requirements of WAC 296-800-170. The definitions of the chemical hazard communication standard shall apply under this standard.

(i) The following shall be subject to the hazard communication requirements of this section: Formaldehyde gas, all mixtures or solutions composed of greater than 0.1 percent formaldehyde, and materials capable of releasing formaldehyde into the air under reasonably foreseeable concentrations reaching or exceeding 0.1 ppm.

(ii) As a minimum, specific health hazards that the employer shall address are: Cancer, irritation and sensitization of the skin and respiratory system, eye and throat irritation, and acute toxicity.

(b) Manufacturers and importers who produce or import formaldehyde or formaldehyde-containing products shall provide downstream employers using or handling these products with an objective determination through the required labels and MSDSs if these items may constitute a health hazard within the meaning of WAC 296-62-05407 under normal conditions of use.

(c) Labels.

(i) The employer shall assure that hazard warning labels complying with the requirements of WAC 296-800-170 are affixed to all containers of materials listed in (a)(i) of this subsection, except to the extent that (a)(i) of this subsection is inconsistent with this item.

(ii) Information on labels. As a minimum, for all materials listed in (a)(i) of this subsection, capable of releasing formaldehyde at levels of 0.1 ppm to 0.5 ppm, labels shall identify that the product contains formaldehyde: List the name and address of the responsible party; and state that physical and health hazard information is readily available from the employer and from material safety data sheets.

(iii) For materials listed in (a)(i) of this subsection, capable of releasing formaldehyde at levels above 0.5 ppm, labels shall appropriately address all the hazards as defined in WAC 296-800-170, and Appendices A and B, including respiratory sensitization, and shall contain the words "Potential Cancer Hazard."

(iv) In making the determinations of anticipated levels of formaldehyde release, the employer may rely on objective data indicating the extent of potential formaldehyde release under reasonably foreseeable conditions of use.

(v) Substitute warning labels. The employer may use warning labels required by other statutes, regulations, or ordinances which impart the same information as the warning statements required by this subitem.

(d) Material safety data sheets.

(i) Any employer who uses formaldehyde-containing materials listed in (a)(i) of this subsection shall comply with the requirements of WAC 296-800-170 with regard to the development and updating of material safety data sheets.

(ii) Manufacturers, importers, and distributors of formaldehyde containing materials listed in (a)(i) of this subsection shall assure that material safety data sheets and updated information are provided to all employers purchasing such materials at the time of the initial shipment and at the time of the first shipment after a material safety data sheet is updated.

(e) Written hazard communication program. The employer shall develop, implement, and maintain at the workplace, a written hazard communication program for formaldehyde exposures in the workplace, which at a minimum describes how the requirements specified in this section for labels and other forms of warning and material safety data sheets, and subsection (14) of this section for employee information and training, will be met. Employees in multi-employer workplaces shall comply with the requirements of WAC 296-800-170.

(14) Employee information and training.

(a) Participation. The employer shall assure that all employees who are assigned to workplaces where there is a health hazard from formaldehyde participate in a training program, except that where the employer can show, using objective data, that employees are not exposed to formaldehyde at or above 0.1 ppm, the employer is not required to provide training.

(b) Frequency. Employers shall provide such information and training to employees at the time of their initial assignment and whenever a new exposure to formaldehyde is introduced into their work area. The training shall be repeated at least annually.

(c) Training program. The training program shall be conducted in a manner which the employee is able to understand and shall include:

(i) A discussion of the contents of this regulation and the contents of the material safety data sheet;

(ii) The purpose for and a description of the medical surveillance program required by this standard, including:

(A) A description of the potential health hazards associated with exposure to formaldehyde and a description of the signs and symptoms of exposure to formaldehyde.

(B) Instructions to immediately report to the employer the development of any adverse signs or symptoms that the employee suspects is attributable to formaldehyde exposure.

(iii) Description of operations in the work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job;

(iv) The purpose for, proper use of, and limitations of personal protective clothing;

(v) Instructions for the handling of spills, emergencies, and clean-up procedures;

(vi) An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of these controls;

(vii) A review of emergency procedures including the specific duties or assignments of each employee in the event of an emergency; and

(viii) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by chapter 296-62 WAC, Part E.

(d) Access to training materials.

(i) The employer shall inform all affected employees of the location of written training materials and shall make these materials readily available, without cost, to the affected employees.

(ii) The employer shall provide, upon request, all training materials relating to the employee training program to the director of labor and industries, or his/her designated representative.

(15) Recordkeeping.

(a) Exposure measurements. The employer shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to formaldehyde. This record shall include:

(i) The date of measurement;

(ii) The operation being monitored;

(iii) The methods of sampling and analysis and evidence of their accuracy and precision;

(iv) The number, durations, time, and results of samples taken;

(v) The types of protective devices worn; and

(vi) The names, job classifications, Social Security numbers, and exposure estimates of the employees whose exposures are represented by the actual monitoring results.

(b) Exposure determinations. Where the employer has determined that no monitoring is required under this standard, the employer shall maintain a record of the objective data relied upon to support the determination that no employee is exposed to formaldehyde at or above the action level.

(c) Medical surveillance. The employer shall establish and maintain an accurate record for each employee subject to medical surveillance under this standard. This record shall include:

(i) The name and Social Security number of the employee;

(ii) The physician's written opinion;

(iii) A list of any employee health complaints that may be related to exposure to formaldehyde; and

(iv) A copy of the medical examination results, including medical disease questionnaires and results of any medical tests required by the standard or mandated by the examining physician.

(d) Record retention. The employer shall retain records required by this standard for at least the following periods:

(i) Exposure records and determinations shall be kept for at least thirty years; and

(ii) Medical records shall be kept for the duration of employment plus thirty years.

(e) Availability of records.

(i) Upon request, the employer shall make all records maintained as a requirement of this standard available for examination and copying to the director of labor and industries, or his/her designated representative.

(ii) The employer shall make employee exposure records, including estimates made from representative monitoring and available upon request for examination and copying, to the subject employee, or former employee, and employee representatives in accordance with WAC 296-62-052 through 296-62-05209 and 296-62-05213 through 296-62-05217 and WAC 296-800-180.

(iii) Employee medical records required by this standard shall be provided upon request for examination and copying, to the subject employee, or former employee, or to anyone having the specific written consent of the subject employee or former employee in accordance with WAC 296-62-05201 through 296-62-05209, and 296-62-05213 through 296-62-05217.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050, 01-11-038, § 296-62-07540, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-07540, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-62-07540, filed 7/20/94, effective 9/20/94; 92-23-017 (Order 92-13), § 296-62-07540, filed 11/10/92, effective 12/18/92; 91-11-070 (Order 91-01), § 296-62-07540, filed 5/20/91, effective 6/20/91; 90-03-029 (Order 89-20), § 296-62-07540, filed 1/11/90, effective 2/26/90; 88-21-002 (Order 88-23), § 296-62-07540, filed 10/6/88, effective 11/7/88.]

WAC 296-62-07601 Scope and application. (1) WAC 296-62-076 applies to all occupational exposures to MDA, Chemical Abstracts Service Registry No. 101-77-9, except as provided in subsections (2) through (7) of this section.

(2) Except as provided in subsection (8) of this section and WAC 296-62-07609(5), this section does not apply to the processing, use, and handling of products containing MDA where initial monitoring indicates that the product is not capable of releasing MDA in excess of the action level under the expected conditions of processing, use, and handling which will cause the greatest possible release; and where no "dermal exposure to MDA" can occur.

(3) Except as provided in subsection (8) of this section, WAC 296-62-076 does not apply to the processing, use, and handling of products containing MDA where objective data are reasonably relied upon which demonstrate the product is not capable of releasing MDA under the expected conditions of processing, use, and handling which will cause the greatest possible release; and where no "dermal exposure to MDA" can occur.

(4) WAC 296-62-076 does not apply to the storage, transportation, distribution, or sale of MDA in intact containers sealed in such a manner as to contain the MDA dusts, vapors, or liquids, except for the provisions of WAC 296-62-054, 296-62-07607 and 296-800-170.

(5) WAC 296-62-076 does not apply to the construction industry as defined in WAC 296-155-012(6). (Exposure to MDA in the construction industry is covered by WAC 296-155-173.)

(6) Except as provided in subsection (8) of this section, WAC 296-62-076 does not apply to materials in any form which contain less than 0.1% MDA by weight or volume.

(7) Except as provided in subsection (8) of this section, WAC 296-62-076 does not apply to "finished articles containing MDA."

(8) Where products containing MDA are exempted under subsections (2) through (7) of this section, the employer shall maintain records of the initial monitoring results or objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in the recordkeeping provision of WAC 296-62-07631.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07601, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-62-07601, filed 2/3/93, effective 3/15/93.]

WAC 296-62-07617 Protective work clothing and equipment.

(1) Provision and use. Where employees are subject to dermal exposure to MDA, where liquids containing MDA can be splashed into the eyes, or where airborne concentrations of MDA are in excess of the PEL, the employer shall provide, at no cost to the employee, and ensure that the employee uses, appropriate protective work clothing and equipment which prevent contact with MDA such as, but not limited to:

- (a) Aprons, coveralls, or other full-body work clothing;
- (b) Gloves, head coverings, and foot coverings; and
- (c) Face shields, chemical goggles; or
- (d) Other appropriate protective equipment which comply with WAC 296-800-160.

(2) Removal and storage.

(a) The employer shall ensure that, at the end of their work shift, employees remove MDA-contaminated protective work clothing and equipment that is not routinely removed throughout the day in change rooms provided in accordance with the provisions established for change rooms.

(b) The employer shall ensure that, during their work shift, employees remove all other MDA-contaminated protective work clothing or equipment before leaving a regulated area.

(c) The employer shall ensure that no employee takes MDA-contaminated work clothing or equipment out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(d) MDA-contaminated work clothing or equipment shall be placed and stored in closed containers which prevent dispersion of the MDA outside the container.

(e) Containers of MDA-contaminated protective work clothing or equipment which are to be taken out of change rooms or the workplace for cleaning, maintenance, or disposal shall bear labels warning of the hazards of MDA.

(3) Cleaning and replacement.

(a) The employer shall provide the employee with clean protective clothing and equipment. The employer shall ensure that protective work clothing or equipment required by this paragraph is cleaned, laundered, repaired, or replaced at intervals appropriate to maintain its effectiveness.

(b) The employer shall prohibit the removal of MDA from protective work clothing or equipment by blowing,

shaking, or any methods which allow MDA to reenter the workplace.

(c) The employer shall ensure that laundering of MDA-contaminated clothing shall be done so as to prevent the release of MDA in the workplace.

(d) Any employer who gives MDA-contaminated clothing to another person for laundering shall inform such person of the requirement to prevent the release of MDA.

(e) The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with MDA of the potentially harmful effects of exposure.

(f) MDA-contaminated clothing shall be transported in properly labeled, sealed, impermeable bags or containers.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07617, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-62-07617, filed 9/30/94, effective 11/20/94; 93-04-111 (Order 92-15), § 296-62-07617, filed 2/3/93, effective 3/15/93.]

WAC 296-62-07619 Hygiene facilities and practices.

(1) Change rooms.

(a) The employer shall provide clean change rooms for employees, who must wear protective clothing, or who must use protective equipment because of their exposure to MDA.

(b) Change rooms must be equipped with separate storage for protective clothing and equipment and for street clothes which prevents MDA contamination of street clothes.

(2) Showers.

(a) The employer shall ensure that employees, who work in areas where there is the potential for exposure resulting from airborne MDA (e.g., particulates or vapors) above the action level, shower at the end of the work shift.

(i) Shower facilities required by this section shall comply with WAC 296-24-12010.

(ii) The employer shall ensure that employees who are required to shower pursuant to the provisions contained herein do not leave the workplace wearing any protective clothing or equipment worn during the work shift.

(b) Where dermal exposure to MDA occurs, the employer shall ensure that materials spilled or deposited on the skin are removed as soon as possible by methods which do not facilitate the dermal absorption of MDA.

(3) Lunch facilities.

(a) Availability and construction.

(i) Whenever food or beverages are consumed at the worksite and employees are exposed to MDA at or above the PEL or are subject to dermal exposure to MDA the employer shall provide readily accessible lunch areas.

(ii) Lunch areas located within the workplace and in areas where there is the potential for airborne exposure to MDA at or above the PEL shall have a positive pressure, temperature controlled, filtered air supply.

(iii) Lunch areas may not be located in areas within the workplace where the potential for dermal exposure to MDA exists.

(b) The employer shall ensure that employees who have been subjected to dermal exposure to MDA or who have been exposed to MDA above the PEL wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics.

(c) The employer shall ensure that employees exposed to MDA do not enter lunch facilities with MDA-contaminated protective work clothing or equipment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-62-07619, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-62-07619, filed 2/3/93, effective 3/15/93.]

WAC 296-62-07621 Communication of hazards to employees. (1) Signs and labels.

(a) The employer shall post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER MDA MAY CAUSE CANCER LIVER TOXIN
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
MAY BE REQUIRED TO BE WORN IN THIS AREA

(b) The employer shall ensure that labels or other appropriate forms of warning are provided for containers of MDA within the workplace. The labels shall comply with the requirements of WAC 296-800-170 and shall include the following legend:

(i) For pure MDA

DANGER CONTAINS MDA MAY CAUSE CANCER LIVER TOXIN

(ii) For mixtures containing MDA

DANGER CONTAINS MDA CONTAINS MATERIALS
WHICH MAY CAUSE CANCER LIVER TOXIN

(2) Material safety data sheets (MSDS).

(a) Employers shall obtain or develop, and shall provide access to their employees, to a material safety data sheet (MSDS) for MDA. In meeting this obligation, employers shall make appropriate use of the information found in Appendices A and B.

(b) Employers who are manufacturers or importers shall:

(i) Comply with subdivision (1)(b) of this section as appropriate; and

(ii) Comply with the requirement in WISHA hazard communication standard, WAC 296-62-054, that they deliver to downstream employers an MSDS for MDA.

(3) Information and training.

(a) The employer shall provide employees with information and training on MDA, in accordance with WAC 296-800-170, at the time of initial assignment and at least annually thereafter.

(b) In addition to the information required under WAC 296-800-170, the employer shall:

(i) Provide an explanation of the contents of WAC 296-62-076, including Appendices A and B, and indicate to employees where a copy of the standard is available;

(ii) Describe the medical surveillance program required under WAC 296-62-07625, and explain the information contained in Appendix C; and

(iii) Describe the medical removal provision required under WAC 296-62-07625.

(4) Access to training materials.

(a) The employer shall make readily available to all affected employees, without cost, all written materials relating to the employee training program, including a copy of this regulation.

(b) The employer shall provide to the director, upon request, all information and training materials relating to the employee information and training program.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07621, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-62-07621, filed 2/3/93, effective 3/15/93.]

WAC 296-62-07631 Recordkeeping. (1) Monitoring data for exempted employers.

(a) Where as a result of the initial monitoring the processing, use, or handling of products made from or containing MDA are exempted from other requirements of this section under WAC 296-62-07601(2), the employer shall establish and maintain an accurate record of monitoring relied on in support of the exemption.

(b) This record shall include at least the following information:

(i) The product qualifying for exemption;

(ii) The source of the monitoring data (e.g., was monitoring performed by the employer or a private contractor);

(iii) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(iv) A description of the operation exempted and how the data support the exemption (e.g., are the monitoring data representative of the conditions at the affected facility); and

(v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(c) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(2) Objective data for exempted employers.

(a) Where the processing, use, or handling of products made from or containing MDA are exempted from other requirements of WAC 296-62-076 under WAC 296-62-07601, the employer shall establish and maintain an accurate record of objective data relied upon in support of the exemption.

(b) This record shall include at least the following information:

(i) The product qualifying for exemption;

(ii) The source of the objective data;

(iii) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(iv) A description of the operation exempted and how the data support the exemption; and

(v) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(c) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(3) Exposure measurements.

(a) The employer shall establish and maintain an accurate record of all measurements required by WAC 296-62-07609, in accordance with Part B of this chapter.

(b) This record shall include:

(i) The dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(ii) Identification of the sampling and analytical methods used;

(iii) A description of the type of respiratory protective devices worn, if any; and

(iv) The name, Social Security number, job classification, and exposure levels of the employee monitored and all other employees whose exposure the measurement is intended to represent.

(c) The employer shall maintain this record for at least 30 years, in accordance with Part B of this chapter.

(4) Medical surveillance.

(a) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by WAC 296-62-07625, 296-62-07627, and 296-62-07629, in accordance with Part B of this chapter.

(b) This record shall include:

(i) The name, Social Security number, and description of the duties of the employee;

(ii) The employer's copy of the physician's written opinion on the initial, periodic, and any special examinations, including results of medical examination and all tests, opinions, and recommendations;

(iii) Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(iv) Any employee medical complaints related to exposure to MDA.

(c) The employer shall keep, or assure that the examining physician keeps, the following medical records:

(i) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and its appendices for all employees provided the employer references the standard and its appendices in the medical surveillance record of each employee;

(ii) A copy of the information provided to the physician as required by any sections in the regulatory text;

(iii) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to the information;

(iv) A copy of the employee's medical and work history related to exposure to MDA.

(d) The employer shall maintain this record for at least the duration of employment plus 30 years, in accordance with Part B of this chapter.

(5) Medical removals.

(a) The employer shall establish and maintain an accurate record for each employee removed from current exposure to MDA pursuant to WAC 296-62-07625, 296-62-07627, and 296-62-07629.

(b) Each record shall include:

(i) The name and Social Security number of the employee;

(ii) The date of each occasion that the employee was removed from current exposure to MDA as well as the corresponding date on which the employee was returned to his or her former job status;

(iii) A brief explanation of how each removal was or is being accomplished; and

(iv) A statement with respect to each removal indicating the reason for the removal.

(c) The employer shall maintain each medical removal record for at least the duration of an employee's employment plus 30 years.

(6) Availability.

(a) The employer shall assure that records required to be maintained by WAC 296-62-076 shall be made available, upon request, to the director for examination and copying.

(b) Employee exposure monitoring records required by WAC 296-62-076 shall be provided upon request for examination and copying to employees, employee representatives, and the director in accordance with the applicable sections of WAC 296-800-170.

(c) Employee medical records required by this section shall be provided upon request for examination and copying, to the subject employee, to anyone having the specific written consent of the subject employee, and to the director in accordance with Part B of this chapter.

(7) Transfer of records.

(a) The employer shall comply with the requirements involving transfer of records set forth in WAC 296-62-05215.

(b) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the director, at least 90 days prior to disposal, and transmit the records to the director if so requested by the director within that period.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07631, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-62-07631, filed 2/3/93, effective 3/15/93.]

WAC 296-62-07717 Protective work clothing and equipment. (1) Provision and use. If an employee is exposed to asbestos above the permissible exposure limits, or where the possibility of eye irritation exists, or for which a required negative exposure assessment is not produced and for any employee performing Class I operations, the employer shall provide at no cost to the employee and require that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(a) Coveralls or similar full-body work clothing;

(b) Gloves, head coverings; and foot coverings; and

(c) Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-800-160.

(2) Removal and storage.

(a) The employer shall ensure that employees remove work clothing contaminated with asbestos only in change rooms provided in accordance with WAC 296-62-07719(1).

(b) The employer shall ensure that no employee takes contaminated work clothing out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(c) Contaminated clothing. Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and be labeled in accordance with WAC 296-62-07721.

(d) Containers of contaminated protective devices or work clothing which are to be taken out of change rooms or the workplace for cleaning, maintenance, or disposal, shall bear labels in accordance with WAC 296-62-07721(6).

(3) Cleaning and replacement.

(a) The employer shall clean, launder, repair, or replace protective clothing and equipment required by this paragraph to maintain their effectiveness. The employer shall provide clean protective clothing and equipment at least weekly to each affected employee.

(b) The employer shall prohibit the removal of asbestos from protective clothing and equipment by blowing or shaking.

(c) Laundering of contaminated clothing shall be done so as to prevent the release of airborne fibers of asbestos in excess of the permissible exposure limits prescribed in WAC 296-62-07705.

(d) Any employer who gives contaminated clothing to another person for laundering shall inform such person of the requirement in (c) of this subsection to effectively prevent the release of airborne fibers of asbestos in excess of the permissible exposure limits.

(e) The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with asbestos of the potentially harmful effects of exposure to asbestos.

(f) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with WAC 296-62-07721.

(4) Inspection of protective clothing for construction and shipyard work.

(a) The competent person shall examine worksuits worn by employees at least once per workshift for rips or tears that may occur during performance of work.

(b) When rips or tears are detected while an employee is working, rips and tears shall be immediately mended, or the worksuit shall be immediately replaced.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07717, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-19-014, § 296-62-07717, filed 9/5/97, effective 11/5/97; 97-01-079, § 296-62-07717, filed 12/17/96, effective 3/1/97. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-62-07717, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-62-07717, filed 5/15/89, effective 6/30/89; 87-24-051 (Order 87-24), § 296-62-07717, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-62-07717, filed 4/27/87.]

WAC 296-62-07719 Hygiene facilities and practices.

(1) Change rooms.

(a) The employer shall provide clean change rooms for employees required to work in regulated areas or required by WAC 296-62-07717(1) to wear protective clothing.

Exception: In lieu of the change area requirement specified in this subsection, the employer may permit employees in Class III and Class IV asbestos work, to clean their protective clothing with a portable HEPA-equipped vacuum before such employees leave the area where maintenance was performed.

(b) The employer shall ensure that change rooms are in accordance with WAC 296-24-120, and are equipped with two separate lockers or storage facilities, so separated as to

prevent contamination of the employee's street clothes from his/her protective work clothing and equipment.

(2) Showers.

(a) The employer shall ensure that employees who work in negative pressure enclosures required by WAC 296-62-07712, or who work in areas where their airborne exposure is above the permissible exposure limits prescribed in WAC 296-62-07705, shower at the end of the work shift.

(b) The employer shall provide shower facilities which comply with WAC 296-24-12010.

(c) The employer shall ensure that employees who are required to shower pursuant to (a) of this subsection do not leave the workplace wearing any clothing or equipment worn during the work shift.

(3) Special requirements in addition to the other provisions of WAC 296-62-07719 for construction work defined in WAC 296-155-012 and for all shipyard work defined in WAC 296-304-010.

(a) Requirements for employees performing Class I asbestos jobs involving over 25 linear or 10 square feet of TSI or surfacing ACM and PACM.

(i) Decontamination areas: The employer shall establish a decontamination area that is adjacent and connected to the regulated area for the decontamination of such employees. The decontamination area shall consist of an equipment room, shower area, and clean room in series. The employer shall ensure that employees enter and exit the regulated area through the decontamination area.

(A) Equipment room. The equipment room shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.

(B) Shower area. Shower facilities shall be provided which comply with WAC 296-24-12010, unless the employer can demonstrate that they are not feasible. The showers shall be adjacent both to the equipment room and the clean room, unless the employer can demonstrate that this location is not feasible. Where the employer can demonstrate that it is not feasible to locate the shower between the equipment room and the clean room, or where the work is performed outdoors, the employers shall ensure that employees:

(I) Remove asbestos contamination from their worksuits in the equipment room using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or

(II) Remove their contaminated worksuits in the equipment room, then don clean worksuits, and proceed to a shower that is not adjacent to the work area.

(C) Clean change room. The clean room shall be equipped with a locker or appropriate storage container for each employee's use.

(ii) Decontamination area entry procedures. The employer shall ensure that employees:

(A) Enter the decontamination area through the clean room;

(B) Remove and deposit street clothing within a locker provided for their use; and

(C) Put on protective clothing and respiratory protection before leaving the clean room.

(D) Before entering the regulated area, the employer shall ensure that employees pass through the equipment room.

(iii) Decontamination area exit procedures. The employer shall ensure that:

(A) Before leaving the regulated area, employees shall remove all gross contamination and debris from their protective clothing;

(B) Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers;

(C) Employees shall not remove their respirators in the equipment room;

(D) Employees shall shower prior to entering the clean room. When taking a shower, employees shall be fully wetted, including the face and hair, prior to removing the respirators;

(E) After showering, employees shall enter the clean room before changing into street clothes.

(b) Requirements for Class I work involving less than 25 linear or 10 square feet of TSI or surfacing ACM and PACM, and for Class II and Class III asbestos work operations where exposures exceed a PEL or where there is no negative exposure assessment produced before the operation.

(i) The employer shall establish an equipment room or area that is adjacent to the regulated area for the decontamination of employees and their equipment which is contaminated with asbestos which shall consist of an area covered by a impermeable drop cloth on the floor or horizontal working surface.

(ii) The area must be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area (as determined by visible accumulations).

(iii) Work clothing must be cleaned with a HEPA vacuum before it is removed.

(iv) All equipment and surfaces of containers filled with ACM must be cleaned prior to removing them from the equipment room or area.

(v) The employer shall ensure that employees enter and exit the regulated area through the equipment room or area.

(c) Requirements for Class IV work. Employers shall ensure that employees performing Class IV work within a regulated area comply with hygiene practice required of employees performing work which has a higher classification within that regulated area. Otherwise employers of employees cleaning up debris and material which is TSI or surfacing ACM or identified as PACM shall provide decontamination facilities for such employees which are required by WAC 296-62-07719 (3)(b).

(d) Decontamination area for personnel shall not be used for the transportation of asbestos debris.

(e) Waste load-out procedure. The waste load-out area as required by WAC 296-62-07723 shall be used as an area for final preparation and external decontamination of waste containers, as a short term storage area for bagged waste, and as a port for transporting waste. The employer shall ensure waste containers be free of all gross contaminated material before removal from the negative-pressure enclosure. Gross contamination shall be wiped, scraped off, or washed off con-

tainers before they are placed into a two chamber air lock which is adjacent to the negative-pressure enclosure. In the first chamber, the exterior of the waste container shall be decontaminated or placed within a second waste container, and then it shall be moved into the second chamber of the air lock for temporary storage or transferred outside of the regulated area. The second waste container shall not be reused unless thoroughly decontaminated.

(4) Lunchrooms.

(a) The employer shall provide lunchroom facilities for employees who work in areas where their airborne exposure is above the time weighted average and/or excursion limit.

(b) The employer shall ensure that lunchroom facilities have a positive pressure, filtered air supply, and are readily accessible to employees.

(c) The employer shall ensure that employees who work in areas where their airborne exposure is above the time weighted average and/or excursion limit, wash their hands and faces prior to eating, drinking, or smoking.

(d) The employer shall ensure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface asbestos fibers have been removed from the clothing or equipment by vacuuming or other method that removes dust without causing the asbestos to become airborne.

(5) Smoking in work areas. The employer shall ensure that employees do not smoke in work areas where they are occupationally exposed to asbestos because of activities in that work area.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-62-07719, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-01-079, § 296-62-07719, filed 12/17/96, effective 3/1/97. Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-62-07719, filed 1/10/91, effective 2/12/91; 89-11-035 (Order 89-03), § 296-62-07719, filed 5/15/89, effective 6/30/89; 87-24-051 (Order 87-24), § 296-62-07719, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-62-07719, filed 4/27/87.]

WAC 296-62-07721 Communication of hazards to employees. (1) Communication of hazards to employees. General industry requirements.

(a) Introduction. This section applies to the communication of information concerning asbestos hazards in general industry. Asbestos exposure in industry occurs in a wide variety of industrial and commercial settings. Employees who manufacture asbestos-containing products may be exposed to asbestos fibers. Employees who repair and replace automotive brakes and clutches may be exposed to asbestos fibers. In addition, employees engaged in housekeeping activities in industrial facilities with asbestos product manufacturing operations, and in public and commercial buildings with installed asbestos-containing materials may be exposed to asbestos fibers. It should be noted that employees who perform housekeeping activities during and after construction activities are covered by asbestos construction work requirements in WAC 296-62-077. Housekeeping employees, regardless of industry designation, should know whether building components they maintain may expose them to asbestos. Building owners are often the only and/or best source of information concerning the presence of previously

installed asbestos-containing building materials. Therefore they, along with employers of potentially exposed employees, are assigned specific information conveying and retention duties under this section.

(b) Installed asbestos-containing material. Employers and building owners are required to treat installed TSI and sprayed-on and troweled-on surfacing materials as ACM for the purposes of this standard. These materials are designated "presumed ACM or PACM," and are defined in WAC 296-62-07703. Asphalt and vinyl flooring installed no later than 1980 also must be treated as asbestos-containing. The employer or building owner may demonstrate that PACM and flooring materials do not contain asbestos by complying with WAC 296-62-07712 (10)(a)(ix).

(c) Duties of employers and building and facility owners.

(i) Building and facility owners must determine the presence, location, and quantity of ACM and/or PACM at the worksite. Employers and building and facility owners must exercise due diligence in complying with these requirements to inform employers and employees about the presence and location of ACM and PACM.

(ii) Before authorizing or allowing any construction, renovation, remodeling, maintenance, repair, or demolition project, an owner or owner's agent must perform, or cause to be performed, a good faith inspection to determine whether materials to be worked on or removed contain asbestos. The inspection must be documented by a written report maintained on file and made available upon request to the director.

(A) The good faith inspection must be conducted by an accredited inspector.

(B) Such good faith inspection is not required if the owner or owner's agent is reasonably certain that asbestos will not be disturbed by the project or the owner or owner's agent assumes that the suspect material contains asbestos and handles the material in accordance with WAC 296-62-07701 through 296-62-07753.

(iii) The owner or owner's agent must provide, to all contractors submitting a bid to undertake any construction, renovation, remodeling, maintenance, repair, or demolition project, the written statement either of the reasonable certainty of nondisturbance of asbestos or of assumption of the presence of asbestos. Contractors must be provided with the written report before they apply or bid to work.

(iv) Any owner or owner's agent who fails to comply with (c)(ii) and (iii) of this subsection must be subject to a mandatory fine of not less than two hundred fifty dollars for each violation. Each day the violation continues must be considered a separate violation. In addition, any construction, renovation, remodeling, maintenance, repair, or demolition which was started without meeting the requirements of this section must be halted immediately and cannot be resumed before meeting such requirements.

(v) Building and facility owners must inform employers of employees, and employers must inform employees who will perform housekeeping activities in areas which contain ACM and/or PACM of the presence and location of ACM and/or PACM in such areas which may be contacted during such activities.

(vi) Upon written or oral request, building or facility owners must make a copy of the written report required in

this section available to the department of labor and industries and the collective bargaining representatives or employee representatives of any employee who may be exposed to any asbestos or asbestos-containing materials. A copy of the written report must be posted conspicuously at the location where employees report to work.

(vii) Building and facility owners must maintain records of all information required to be provided according to this section and/or otherwise known to the building owner concerning the presence, location and quantity of ACM and PACM in the building/facility. Such records must be kept for the duration of ownership and must be transferred to successive owners.

(2) Communication of hazards to employees. Requirements for construction and shipyard employment activities.

(a) Introduction. This section applies to the communication of information concerning asbestos hazards in construction and shipyard employment activities. Most asbestos-related construction and shipyard activities involve previously installed building materials. Building/vessel owners often are the only and/or best sources of information concerning them. Therefore, they, along with employers of potentially exposed employees, are assigned specific information conveying and retention duties under this section. Installed Asbestos Containing Building/Vessel Material: Employers and building/vessel owners must identify TSI and sprayed or troweled on surfacing materials as asbestos-containing unless the employer, by complying with WAC 296-62-07721(3) determines it is not asbestos containing. Asphalt or vinyl flooring/decking material installed in buildings or vessels no later than 1980 must also be considered as asbestos containing unless the employer/owner, according to WAC 296-62-07712 (10)(a)(ix) determines it is not asbestos containing. If the employer or building/vessel owner has actual knowledge or should have known, through the exercise of due diligence, that materials other than TSI and sprayed-on or troweled-on surfacing materials are asbestos containing, they must be treated as such. When communicating information to employees according to this standard, owners and employers must identify "PACM" as ACM. Additional requirements relating to communication of asbestos work on multi-employer worksites are set out in WAC 296-62-07706.

(b) Duties of building/vessel and facility owners.

(i) Before work subject to this section is begun, building/vessel and facility owners must identify the presence, location and quantity of ACM, and/or PACM at the worksite. All thermal system insulation and sprayed on or troweled on surfacing materials in buildings/vessels or substrates constructed no later than 1980 must be identified as PACM. In addition, resilient flooring/decking material installed no later than 1980 must also be identified as asbestos containing.

(ii) Before authorizing or allowing any construction, renovation, remodeling, maintenance, repair, or demolition project, a building/vessel and facility owner or owner's agent must perform, or cause to be performed, a good faith inspection to determine whether materials to be worked on or removed contain asbestos. The inspection must be documented by a written report maintained on file and made available upon request to the director.

(A) The good faith inspection must be conducted by an accredited inspector.

(B) Such good faith inspection is not required if the building/vessel and facility owner or owner's agent assumes that the suspect material contains asbestos and handles the material in accordance with WAC 296-62-07701 through 296-62-07753 or if the owner or the owner's agent is reasonably certain that asbestos will not be disturbed by the project.

(iii) The building/vessel and facility owner or owner's agent must provide, to all contractors submitting a bid to undertake any construction, renovation, remodeling, maintenance, repair, or demolition project, the written statement either of the reasonable certainty of nondisturbance of asbestos or of assumption of the presence of asbestos. Contractors must be provided the written report before they apply or bid on work.

(iv) Any building/vessel and facility owner or owners agent who fails to comply with WAC 296-62-07721 (2)(b)(ii) and (iii) must be subject to a mandatory fine of not less than two hundred fifty dollars for each violation. Each day the violation continues must be considered a separate violation. In addition, any construction, renovation, remodeling, maintenance, repair, or demolition which was started without meeting the requirements of this section must be halted immediately and cannot be resumed before meeting such requirements.

(v) Upon written or oral request, building/vessel and facility owner or owner's agent must make a copy of the written report required in this section available to the department of labor and industries and the collective bargaining representatives or employee representatives of any employee who may be exposed to any asbestos or asbestos-containing materials. A copy of the written report must be posted conspicuously at the location where employees report to work.

(vi) Building/vessel and facility owner or owner's agent must notify in writing the following persons of the presence, location and quantity of ACM or PACM, at worksites in their buildings/facilities/vessels.

(A) Prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing such material;

(B) Employees of the owner who will work in or adjacent to areas containing such material;

(C) On multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials;

(D) Tenants who will occupy areas containing such materials.

(c) Duties of employers whose employees perform work subject to this standard in or adjacent to areas containing ACM and PACM. Building/vessel and facility owner or owner's agents whose employees perform such work must comply with these provisions to the extent applicable.

(i) Before work subject to this standard is begun, building/vessel and facility owner or owner's agents must determine the presence, location, and quantity of ACM and/or PACM at the worksite according to WAC 296-62-07721 (2)(b).

(ii) Before work under this standard is performed employers of employees who will perform such work must

inform the following persons of the location and quantity of ACM and/or PACM present at the worksite and the precautions to be taken to insure that airborne asbestos is confined to the area.

(A) Owners of the building/vessel or facility;

(B) Employees who will perform such work and employers of employees who work and/or will be working in adjacent areas;

(iii) Upon written or oral request, a copy of the written report required in this section must be made available to the department of labor and industries and the collective bargaining representatives or employee representatives of any employee who may be exposed to any asbestos or asbestos-containing materials. A copy of the written report must be posted conspicuously at the location where employees report to work.

(iv) Within 10 days of the completion of such work, the employer whose employees have performed work subject to this standard, must inform the building/vessel or facility owner and employers of employees who will be working in the area of the current location and quantity of PACM and/or ACM remaining in the former regulated area and final monitoring results, if any.

(d) In addition to the above requirements, all employers who discover ACM and/or PACM on a worksite must convey information concerning the presence, location and quantity of such newly discovered ACM and/or PACM to the owner and to other employers of employees working at the worksite, within 24 hours of the discovery.

(e) No contractor may commence any construction, renovation, remodeling, maintenance, repair, or demolition project without receiving a copy of the written response or statement required by WAC 296-62-07721 (2)(b). Any contractor who begins any project without the copy of the written report or statement will be subject to a mandatory fine of not less than two hundred fifty dollars per day. Each day the violation continues will be considered a separate violation.

(3) Criteria to rebut the designation of installed material as PACM.

(a) At any time, an employer and/or building/vessel owner may demonstrate, for purposes of this standard, that PACM does not contain asbestos. Building/vessel owners and/or employers are not required to communicate information about the presence of building material for which such a demonstration according to the requirements of (b) of this subsection has been made. However, in all such cases, the information, data and analysis supporting the determination that PACM does not contain asbestos, must be retained according to WAC 296-62-07727.

(b) An employer or owner may demonstrate that PACM does not contain asbestos by the following:

(i) Having a completed inspection conducted according to the requirements of AHERA (40 CFR Part 763, Subpart E) which demonstrates that the material is not ACM;

(ii) Performing tests of the material containing PACM which demonstrate that no asbestos is present in the material. Such tests must include analysis of bulk samples collected in the manner described in 40 CFR 763.86, Asbestos-containing materials in schools. The tests, evaluation and sample collection must be conducted by an accredited inspector. Analysis

of samples must be performed by persons or laboratories with proficiency demonstrated by current successful participation in a nationally recognized testing program such as the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute for Standards and Technology (NIST) or the Round Robin for bulk samples administered by the American Industrial Hygiene Association (AIHA), or an equivalent nationally recognized Round Robin testing program.

(4) At the entrance to mechanical rooms/areas in which employees reasonably can be expected to enter and which contain TSI or surfacing ACM and PACM, the building/vessel and facility owner or owner's agent must post signs which identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that ACM and/or PACM will not be disturbed. The employer shall ensure, to the extent feasible, that employees who come in contact with these signs can comprehend them. Means to ensure employee comprehension may include the use of foreign languages, pictographs, graphics, and awareness training.

(5) Warning signs.

(a) Warning signs that demarcate the regulated area must be provided and displayed at each location where a regulated area is required. In addition, warning signs must be posted at all approaches to regulated areas and be posted at such a distance from such a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.

(b) The warning signs required by (a) of this subsection must bear the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN
THIS AREA

(c) The employer shall ensure that employees working in and contiguous to regulated areas comprehend the warning signs required to be posted by (a) of this subsection. Means to ensure employee comprehension may include the use of foreign languages, pictographs, and graphics.

(6) Warning labels.

(a) Warning labels must be affixed to all products containing asbestos including raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, and to their containers including waste containers. Installed asbestos products must contain a visible label, except where such a label would clearly not be feasible.

(b) Labels must be printed in large, bold letters on a contrasting background.

(c) The labels must comply with the requirements of WAC 296-800-170, and must include the following information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIRBORNE ASBESTOS FIBERS

(7) The provisions for labels required by subsection (6)(a) of this section or for material safety data sheets required by subsection (8) of this section do not apply where:

(a) Asbestos fibers have been modified by a bonding agent, coating, binder, or other material, provided that the manufacturer can demonstrate that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of fibers of asbestos in excess of the excursion limit will be released; or

(b) Asbestos is present in a product in concentrations less than 1.0 percent by weight.

(8) Material safety data sheets. Employers who are manufacturers or importers of asbestos, or asbestos products must comply with the requirements regarding development of material safety data sheets as specified in WAC 296-62-05413, except as provided by subsection (7) of this section.

(9) When a building/vessel owner/or employer identifies previously installed PACM and/or ACM, labels or signs must be affixed or posted so that employees will be notified of what materials contain PACM and/or ACM. The employer must attach such labels in areas where they will clearly be noticed by employees who are likely to be exposed, such as at the entrance to mechanical rooms/areas. Signs required by subsection (5)(a) of this section may be posted in lieu of labels so long as they contain information required for labeling. The employer must ensure, to the extent feasible, that employees who come in contact with these signs can comprehend them. Means to ensure employee comprehension may include the use of foreign languages, pictographs, graphics, and awareness training.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-07721, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050, 49.26.040 and 49.26.130. 99-17-026, § 296-62-07721, filed 8/10/99, effective 11/10/99. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 97-19-014, § 296-62-07721, filed 9/5/97, effective 11/5/97; 97-01-079, § 296-62-07721, filed 12/17/96, effective 3/1/97. Statutory Authority: Chapter 49.17 RCW. 93-01-005 (Order 92-20), § 296-62-07721, filed 12/2/92, effective 1/15/93; 91-03-044 (Order 90-18), § 296-62-07721, filed 1/10/91, effective 2/12/91; 89-21-018 (Order 89-10), § 296-62-07721, filed 10/10/89, effective 11/24/89; 89-11-035 (Order 89-03), § 296-62-07721, filed 5/15/89, effective 6/30/89; 87-24-051 (Order 87-24), § 296-62-07721, filed 11/30/87. Statutory Authority: RCW 49.17.050(2) and 49.17.040. 87-10-008 (Order 87-06), § 296-62-07721, filed 4/27/87.]

WAC 296-62-08001 Bloodborne pathogens. (1) Scope and application. This section applies to all occupational exposure to blood or other potentially infectious materials as defined by subsection (2) of this section.

(2) Definitions. For purposes of this section, the following shall apply:

"Blood" means human blood, human blood components, and products made from human blood.

"Bloodborne pathogens" means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hep-

atitis B virus (HBV) and human immunodeficiency virus (HIV).

"Clinical laboratory" means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

"Contaminated" means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

"Contaminated laundry" means laundry which has been soiled with blood or other potentially infectious materials or may contain contaminated sharps.

"Contaminated sharps" means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

"Decontamination" means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

"Director" means the director of the Washington state department of labor and industries; the state designee for the Washington state plan.

"Engineering controls" means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

"Exposure incident" means a specific eye, mouth, other mucous membrane, nonintact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

"Handwashing facilities" means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

"Licensed healthcare professional" is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by subsection (6) of this section, entitled Hepatitis B vaccination and post-exposure evaluation and follow-up.

"HBV" means hepatitis B virus.

"HIV" means human immunodeficiency virus.

"Needleless systems" means a device that does not use needles for:

- The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established;
- The administration of medication or fluids; or
- Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

"Occupational exposure" means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

"Other potentially infectious materials" means:

- (a) The following human body fluids: Semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated

with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

- (b) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

- (c) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

"Parenteral" means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

"Personal protective equipment" is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

"Production facility" means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

"Regulated waste" means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

"Research laboratory" means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

"Sharps with engineered sharps injury protections" means a nonneedle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

"Source individual" means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

"Sterilize" means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

"Universal precautions" are an approach to infection control. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

"Work practice controls" means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

(3) Exposure control.

(a) Exposure control plan.

(i) Each employer having an employee(s) with occupational exposure as defined by subsection (2) of this section shall establish a written exposure control plan designed to eliminate or minimize employee exposure.

(ii) The exposure control plan shall contain at least the following elements:

(A) The exposure determination required by (b) of this subsection;

(B) The schedule and method of implementation for subsection (4) of this section, Methods of compliance; subsection (5) of this section, HIV and HBV research laboratories and production facilities; subsection (6) of this section, Hepatitis B vaccination and post-exposure evaluation and follow-up; subsection (7) of this section, Communication of hazards to employees; and subsection (8) of this section, Recordkeeping; and

(C) The procedure for the evaluation of circumstances surrounding exposure incidents as required by subsection (6)(c)(i) of this section.

(iii) Each employer shall ensure that a copy of the exposure control plan is accessible to employees in accordance with WAC 296-62-05209.

(iv) The exposure control plan shall be reviewed and updated at least annually, and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure, and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:

(A) Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and

(B) Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

(v) An employer, who is required to establish an exposure control plan shall solicit input from nonmanagerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the solicitation in the exposure control plan.

(b) Exposure determination.

(i) Each employer who has an employee(s) with occupational exposure as defined by subsection (2) of this section shall prepare an exposure determination. This exposure determination shall contain the following:

(A) A list of all job classifications in which all employees in those job classifications have occupational exposure;

(B) A list of job classifications in which some employees have occupational exposure; and

(C) A list of all tasks and procedures or groups of closely related tasks and procedures in which occupational exposure occurs, and that are preformed by employees in job classifications listed in accordance with the provisions of (b)(i)(B) of this subsection.

(ii) This exposure determination shall be made without regard to the use of personal protective equipment.

(4) Methods of compliance.

(a) General. Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

(b) Engineering and work practice controls.

(i) Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

(ii) Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

(iii) Employers shall provide handwashing facilities which are readily accessible to employees.

(iv) When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

(v) Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

(vi) Employers shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

(vii) Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in (b)(vii)(A) and (B) of this subsection. Shearing or breaking of contaminated needles is prohibited.

(A) Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.

(B) Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

(viii) Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:

(A) Puncture resistant;

(B) Labeled or color-coded in accordance with this standard;

(C) Leakproof on the sides and bottom; and

(D) In accordance with the requirements set forth in (d)(ii)(E) of this subsection for reusable sharps.

(ix) Eating, drinking, smoking, applying cosmetics, or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

(x) Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets, or on countertops or benchtops where blood or other potentially infectious materials are present.

(xi) All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to

minimize splashing, spraying, spattering, and generation of droplets of these substances.

(xii) Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

(xiii) Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

(A) The container for storage, transport, or shipping shall be labeled or color-coded according to subsection (7)(a)(i) of this section and closed prior to being stored, transported, or shipped. When a facility utilizes universal precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens/containers remain within the facility. Labeling or color-coding in accordance with subsection (7)(a)(i) of this section is required when such specimens/containers leave the facility.

(B) If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.

(C) If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is punctured-resistant in addition to the above characteristics.

(xiv) Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

(A) A readily observable label in accordance with subsection (7)(a)(i)(H) of this section shall be attached to the equipment stating which portions remain contaminated.

(B) The employer shall ensure that this information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, prior to handling, servicing, or shipping so that appropriate precautions will be taken.

(c) Personal protective equipment.

(i) Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

(ii) Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's

professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or the coworker. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

(iii) Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

(iv) Cleaning, laundering, and disposal. The employer shall clean, launder, and dispose of personal protective equipment required by subsections (4) and (5) of this section, at no cost to the employee.

(v) Repair and replacement. The employer shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

(vi) If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

(vii) All personal protective equipment shall be removed prior to leaving the work area.

(viii) When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

(ix) Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and nonintact skin; when performing vascular access procedures except as specified in (c)(ix)(D) of this subsection; and when handling or touching contaminated items or surfaces.

(A) Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

(B) Disposable (single use) gloves shall not be washed or decontaminated for re-use.

(C) Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

(D) If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:

(I) Periodically reevaluate this policy;

(II) Make gloves available to all employees who wish to use them for phlebotomy;

(III) Not discourage the use of gloves for phlebotomy; and

(IV) Require that gloves be used for phlebotomy in the following circumstances:

—When the employee has cuts, scratches, or other breaks in his or her skin;

—When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and

—When the employee is receiving training in phlebotomy.

(x) Masks, eye protection, and face shields. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

(xi) Gowns, aprons, and other protective body clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

(xii) Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).

(d) Housekeeping.

(i) General. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

(ii) All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.

(A) Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the workshift if the surface may have become contaminated since the last cleaning.

(B) Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.

(C) All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

(D) Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

(E) Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

(iii) Regulated waste.

(A) Contaminated sharps discarding and containment.

(I) Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

—Closable;

—Puncture resistant;

—Leakproof on sides and bottom; and

—Labeled or color-coded in accordance with subsection (7)(a)(i) of this section.

(II) During use, containers for contaminated sharps shall be:

—Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);

—Maintained upright throughout use; and

—Replaced routinely and not be allowed to overfill.

(III) When moving containers of contaminated sharps from the area of use, the containers shall be:

—Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;

—Placed in a secondary container if leakage is possible.

The second container shall be:

• Closable;

• Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

• Labeled or color-coded according to subsection (7)(a)(i) of this section.

(IV) Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

(B) Other regulated waste containment.

(I) Regulated waste shall be placed in containers which are:

—Closable;

—Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping;

—Labeled or color-coded in accordance with subsection (7)(a)(i) of this section; and

—Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(II) If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

—Closable;

—Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping;

—Labeled or color-coded in accordance with subsection (7)(a)(i) of this section; and

—Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(C) Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, states and territories, and political subdivisions of states and territories.

(iv) Laundry.

(A) Contaminated laundry shall be handled as little as possible with a minimum of agitation.

(I) Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

(II) Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with subsection (7)(a)(i) of this section. When a facility utilizes universal precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with universal precautions.

(III) Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

(B) The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

(C) When a facility ships contaminated laundry off-site to a second facility which does not utilize universal precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with subsection (7)(a)(i) of this section.

(5) HIV and HBV research laboratories and production facilities.

(a) This subsection applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.

(b) Research laboratories and production facilities shall meet the following criteria:

(i) Standard microbiological practices. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

(ii) Special practices.

(A) Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.

(B) Contaminated materials that are to be decontaminated at a site away from the work area shall be placed in a durable, leakproof, labeled, or color-coded container that is closed before being removed from the work area.

(C) Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.

(D) When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign shall comply with subsection (7)(a)(ii) of this section.

(E) All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or

other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.

(F) Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

(G) Special care shall be taken to avoid skin contact with other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials is unavoidable.

(H) Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

(I) Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.

(J) Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) shall be used for the injection or aspiration of other potentially infectious materials. Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or decontaminated before reuse or disposal.

(K) All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

(L) A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.

(M) A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures, and shall be required to follow them.

(iii) Containment equipment.

(A) Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

(B) Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.

(c) HIV and HBV research laboratories shall meet the following criteria:

(i) Each laboratory shall contain a facility for hand washing and an eyewash facility which is readily available within the work area.

(ii) An autoclave for decontamination of regulated waste shall be available.

(d) HIV and HBV production facilities shall meet the following criteria:

(i) The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.

(ii) The surfaces of doors, walls, floors, and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.

(iii) Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.

(iv) Access doors to the work area or containment module shall be self-closing.

(v) An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

(vi) A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

(e) Training requirements. Additional training requirements for employees in HIV and HBV research laboratories and HIV and HBV production facilities are specified in subsection (7)(b)(ix) of this section.

(6) Hepatitis B vaccination and post-exposure evaluation and follow-up.

(a) General.

(i) The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

(ii) The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are:

(A) Made available at no cost to the employee;

(B) Made available to the employee at a reasonable time and place;

(C) Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and

(D) Provided according to recommendations of the United States Public Health Service current at the time these

evaluations and procedures take place, except as specified by this subsection (6).

(iii) The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

(b) Hepatitis B vaccination.

(i) Hepatitis B vaccination shall be made available after the employee has received the training required in subsection (7)(b)(vii)(I) of this section and within ten working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

(ii) The employer shall not make participation in a pre-screening program a prerequisite for receiving hepatitis B vaccination.

(iii) If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.

(iv) The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in WAC 296-62-08050, appendix A.

(v) If a routine booster dose(s) of hepatitis B vaccine is recommended by the United States Public Health Service at a future date, such booster dose(s) shall be made available in accordance with (a)(ii) of this subsection.

(c) Post-exposure evaluation and follow-up. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

(i) Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;

(ii) Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;

(A) The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.

(B) When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

(C) Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

(iii) Collection and testing of blood for HBV and HIV serological status;

(A) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

(B) If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic

testing, the sample shall be preserved for at least ninety days. If, within ninety days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

(iv) Post-exposure prophylaxis, when medically indicated, as recommended by the United States Public Health Service;

(v) Counseling; and

(vi) Evaluation of reported illnesses.

(d) Information provided to the healthcare professional.

(i) The employer shall ensure that the healthcare professional responsible for the employee's hepatitis B vaccination is provided a copy of this regulation.

(ii) The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

(A) A copy of this regulation;

(B) A description of the exposed employee's duties as they relate to the exposure incident;

(C) Documentation of the route(s) of exposure and circumstances under which exposure occurred;

(D) Results of the source individual's blood testing, if available; and

(E) All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

(e) Healthcare professional's written opinion. The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within fifteen days of the completion of the evaluation.

(i) The healthcare professional's written opinion for hepatitis B vaccination shall be limited to whether hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

(ii) The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

(A) That the employee has been informed of the results of the evaluation; and

(B) That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

(iii) All other findings or diagnoses shall remain confidential and shall not be included in the written report.

(f) Medical recordkeeping. Medical records required by this standard shall be maintained in accordance with subsection (8)(a) of this section.

(7) Communication of hazards to employees.

(a) Labels and signs.

(i) Labels.

(A) Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in (a)(i)(E), (F), and (G) of this subsection.

(B) Labels required by this section shall include the following legend:



BIOHAZARD

(C) These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

(D) Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

(E) Red bags or red containers may be substituted for labels.

(F) Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of subsection (7) of this section.

(G) Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

(H) Labels required for contaminated equipment shall be in accordance with this subitem and shall also state which portions of the equipment remain contaminated.

(I) Regulated waste that has been decontaminated need not be labeled or color-coded.

(ii) Signs.

(A) The employer shall post signs at the entrance to work areas specified in subsection (5) of this section, entitled HIV and HBV research laboratory and production facilities, which shall bear the following legend:



BIOHAZARD

(Name of the Infectious Agent)

(Special requirements for entering the area)

(Name, telephone number of the laboratory director or other responsible person.)

(B) These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.

(b) Information and training.

(i) Employers shall ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.

(ii) Training shall be provided as follows:

(A) At the time of initial assignment to tasks where occupational exposure may take place;

(B) Within ninety days after the effective date of the standard; and

(C) At least annually thereafter.

(iii) For employees who have received training on blood-borne pathogens in the year preceding the effective date of the standard, only training with respect to the provisions of the standard which were not included need be provided.

(iv) Annual training for all employees shall be provided within one year of their previous training.

(v) Employers shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

(vi) Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

(vii) The training program shall contain at a minimum the following elements:

(A) An accessible copy of the regulatory text of this standard and an explanation of its contents;

(B) A general explanation of the epidemiology and symptoms of bloodborne diseases;

(C) An explanation of the modes of transmission of bloodborne pathogens;

(D) An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;

(E) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;

(F) An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment;

(G) Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;

(H) An explanation of the basis for selection of personal protective equipment;

(I) Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;

(J) Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;

(K) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting

the incident and the medical follow-up that will be made available;

(L) Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;

(M) An explanation of the signs and labels and/or color coding required by (a) of this subsection; and

(N) An opportunity for interactive questions and answers with the person conducting the training session.

(viii) The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

(ix) Additional initial training for employees in HIV and HBV laboratories and production facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements:

(A) The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.

(B) The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.

(C) The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

(8) Recordkeeping.

(a) Medical records.

(i) The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with WAC 296-62-052.

(ii) This record shall include:

(A) The name and Social Security number of the employee;

(B) A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by subsection (6)(b) of this section;

(C) A copy of all results of examinations, medical testing, and follow-up procedures as required by subsection (6)(c) of this section;

(D) The employer's copy of the healthcare professional's written opinion as required by subsection (6)(e) of this section; and

(E) A copy of the information provided to the healthcare professional as required by subsection (6)(d)(ii)(B), (C), and (D) of this section.

(iii) Confidentiality. The employer shall ensure that employee medical records required by (a) of this subsection are:

(A) Kept confidential; and

(B) Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

(iv) The employer shall maintain the records required by subsection (8) of this section for at least the duration of employment plus thirty years in accordance with WAC 296-62-052.

(b) Training records.

(i) Training records shall include the following information:

(A) The dates of the training sessions;

(B) The contents or a summary of the training sessions;

(C) The names and qualifications of persons conducting the training; and

(D) The names and job titles of all persons attending the training sessions.

(ii) Training records shall be maintained for three years from the date on which the training occurred.

(c) Availability.

(i) The employer shall ensure that all records required to be maintained by this section shall be made available upon request to the director for examination and copying.

(ii) Employee training records required by this section shall be provided upon request for examination and copying to employees, to employee representatives, and to the director.

(iii) Employee medical records required by this section shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the director in accordance with WAC 296-62-052.

(d) Transfer of records.

(i) The employer shall comply with the requirements involving transfer of records set forth in WAC 296-62-052.

(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the director, at least three months prior to their disposal and transmit them to the director, if required by the director to do so, within that three-month period.

(e) Sharps injury log.

(i) The employer shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:

(A) The type and brand of device involved in the incident;

(B) The department or work area where the exposure incident occurred; and

(C) An explanation of how the incident occurred.

(ii) The requirement to establish and maintain a sharps injury log shall apply to any employer who is required to maintain a log of occupational injuries and illnesses under chapter 296-27 WAC, Recordkeeping and recording.

(iii) The sharps injury log shall be maintained for the period required by WAC 296-27-070, Retention of records.

(9) Dates.

(a) Effective date. The standard shall become effective on May 26, 1992.

(b) The exposure control plan required by subsection (3) of this section shall be completed on or before June 26, 1992.

(c) Subsection (7)(b) of this section, entitled Information and training; and subsection (7)(h) of this section, entitled Recordkeeping; shall take effect on or before July 27, 1992.

(d) Subsection (4)(b) of this section, entitled Engineering and work practice controls; subsection (4)(c) of this section, entitled Personal protective equipment; subsection (4)(d) of this section, entitled Housekeeping; subsection (5) of this section, entitled HIV and HBV research laboratories and production facilities; subsection (6) of this section, entitled Hepatitis B vaccination and post-exposure evaluation and follow-up; and subsection (7)(a) of this section, entitled Labels and signs; shall take effect August 27, 1992.

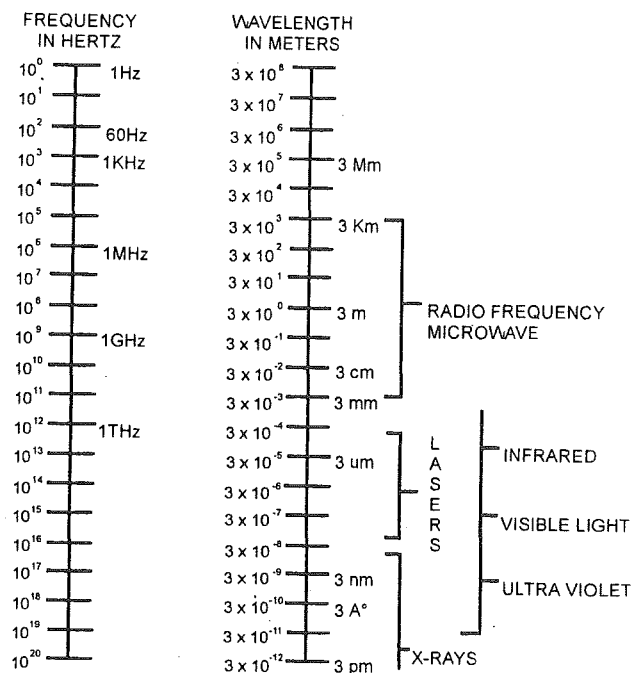
[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-13-078, § 296-62-08001, filed 6/19/01, effective 8/6/01. Statutory Authority: Chapter 49.17 RCW. 93-01-067 (Order 92-15), § 296-62-08001, filed 12/11/92, effective 1/15/93; 92-08-100 (Order 92-01), § 296-62-08001, filed 4/1/92, effective 5/5/92.]

WAC 296-62-09001 Definitions. (1) "Physical agents" shall mean, but are not limited to: Illumination, ionizing radiation, nonionizing radiation, pressure, vibration, temperature and humidity, and noise.

(2) "Nonionizing radiation" as related to industrial sources, means electromagnetic radiation within the spectral range of approximately 200 nanometers to 3 kilometers including ultraviolet, visible, infrared and radiofrequency/microwave radiation. The electromagnetic spectrum is shown graphically in Figure 1 below.

ELECTROMAGNETIC SPECTRUM

Figure 1



(3) Pressure is a barometric force. Positive pressure would be that above 14.7 lbs. per square inch absolute and negative pressure would be that below 14.7 lbs. per square inch absolute. 14.7 lbs. per square inch equals 760 mm. mercury.

(4) "Vibration" means rapid movement to and fro or oscillating movement.

(5) "Noise" means unwanted sound or loud discordant or disagreeable sound or sounds.

(6) "Temperature" means the degree of hotness or coldness measured by use of a thermometer.

(7) "Radiant heat" means infrared radiation emitted from hot surfaces.

(8) "Relative humidity" means the percent of moisture in the air compared to the maximum amount of moisture the air could contain at the same temperature.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-62-09001, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-62-09001, filed 12/11/84; Order 73-3, § 296-62-09001, filed 5/7/73.]

WAC 296-62-09003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-11021 Open surface tanks. (1) General.

(a) This section applies to all operations involving the immersion of materials in liquids, or in the vapors of such liquids, for the purpose of cleaning or altering the surface or adding to or imparting a finish thereto or changing the character of the materials, and their subsequent removal from the liquid or vapor, draining, and drying. These operations include washing, electroplating, anodizing, pickling, quenching, dyeing, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and other similar operations.

(b) Except where specific construction specifications are prescribed in this section, hoods, ducts, elbows, fans, blowers, and all other exhaust system parts, components, and supports thereof shall be so constructed as to meet conditions of service and to facilitate maintenance and shall conform in construction to the specifications contained in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

(2) Classification of open-surface tank operations.

(a) Open-surface tank operations shall be classified into 16 classes, numbered A-1 to D-4, inclusive.

(b) Determination of class. Class is determined by two factors, hazard potential designated by a letter from A to D, inclusive, and rate of gas, vapor, or mist evolution designated by a number from 1 to 4, inclusive (for example, B.3).

(c) Hazard potential is an index, on a scale of from A to D, inclusive, of the severity of the hazard associated with the substance contained in the tank because of the toxic, flammable, or explosive nature of the vapor, gas, or mist produced therefrom. The toxic hazard is determined from the concentration, measured in parts by volume of a gas or vapor, per million parts by volume of contaminated air (ppm), or in milligrams of mist per cubic meter of air (mg/m³), below which ill effects are unlikely to occur to the exposed worker. The

concentrations shall be those in WAC 296-62-075 through 296-62-07515.

(d) The relative fire or explosion hazard is measured in degrees Fahrenheit in terms of the closed-cup flash point of the substance in the tank. Detailed information on the prevention of fire hazards in dip tanks may be found in Dip Tanks Containing Flammable or Combustible Liquids, NFPA No. 34-1966, National Fire Protection Association. Where the tank contains a mixture of liquids, other than organic solvents, whose effects are additive, the hygienic standard of the most toxic component (for example, the one having the lowest ppm or mg/m³) shall be used, except where such substance constitutes an insignificantly small fraction of the mixture. For mixtures of organic solvents, their combined effect, rather than that of either individually, shall determine the hazard potential. In the absence of information to the contrary, the effects shall be considered as additive. If the sum of the ratios of the airborne concentration of that contaminant exceeds unity, the toxic concentration shall be considered to have been exceeded. (See Note A of (2)(e) of this section.)

(e) Hazard potential shall be determined from Table 16, with the value indicating greater hazard being used. When the hazardous material may be either a vapor with a permissible exposure limit in ppm or a mist with a TLV in mg/m³, the TLV indicating the greater hazard shall be used (for example, A takes precedence over B or C; B over C; C over D).

Note A:

$$\frac{c_1}{\text{PEL}} + \frac{c_2}{\text{PEL}} + \frac{c_3}{\text{PEL}} + \dots + \frac{c_N}{\text{PEL}} > 1$$

where:

c = Concentration measured at the operation in ppm.

TABLE 16
DETERMINATION OF HAZARD POTENTIAL

Hazard potential	Toxicity Group			
	Gas or vapor (ppm)		Mist (mg/m ³)	Flash point (in degrees F.)
A.....	0 - 10	0	0.1
B.....	11 - 100	0.11	1.0	Under 100
C.....	101 - 500	1.1	10	100-200
D.....	Over 500	Over	10	Over 200

(f) Rate of gas, vapor, or mist evolution is a numerical index, on a scale of from 1 to 4, inclusive, both of the relative capacity of the tank to produce gas, vapor, or mist and of the relative energy with which it is projected or carried upwards from the tank. Rate is evaluated in terms of;

(i) The temperature of the liquid in the tank in degrees Fahrenheit;

(ii) The number of degrees Fahrenheit that this temperature is below the boiling point of the liquid in degrees Fahrenheit;

(iii) The relative evaporation of the liquid in still air at room temperature in an arbitrary scale—fast, medium, slow, or nil; and

(iv) The extent that the tank gases or produces mist in an arbitrary scale—high, medium, low, and nil. (See Table 17, Note 2.) Gassing depends upon electrochemical or mechanical processes, the effects of which have to be individually evaluated for each installation (see Table 17, Note 3).

(g) Rate of evolution shall be determined from Table 17. When evaporation and gassing yield different rates, the lowest numerical value shall be used.

TABLE 17
DETERMINATION OF RATE OF GAS,
VAPOR, OR MIST EVOLUTION¹

Rate	Liquid temperature, °F	Degrees below boiling point	Evaporation ²	Relative Gassing ³
1.	Over 200	0-20	Fast	High
2.	150-200	21-50	Medium	Medium
3.	94-149	51-100	Slow	Low
4.	Under 94	Over 100	Nil	Nil

Note 1. In certain classes of equipment, specifically vapor degreasers, an internal condenser or vapor level thermostat is used to prevent the vapor from leaving the tank during normal operations. In such cases, rate of vapor evolution from the tank into the workroom is not dependent upon the factors listed in the table, but rather upon abnormalities of operating procedure, such as carry out of vapors from excessively fast action, dragout of liquid by entrainment in parts, contamination of solvent by water and other materials, or improper heat balance. When operating procedure is excellent, effective rate of evolution may be taken as 4. When operating procedures are average, the effective rate of evolution may be taken as 3. When operation is poor, a rate of 2 or 1 is indicated, depending upon observed conditions.

Note 2. Relative evaporation rate is determined according to the methods described by A. K. Doolittle in *Industrial and Engineering Chemistry*, vol. 27, p. 1169, (3) where time for 100—percent evaporation is as follows: Fast: 0-3 hours; Medium: 3-12 hours; Slow: 12-50 hours; Nil: more than 50 hours.

Note 3. Gassing means the formation by chemical or electrochemical action of minute bubbles of gas under the surface of the liquid in the tank and is generally limited to aqueous solutions.

(3) Ventilation. Where ventilation is used to control potential exposures to workers as defined in (2)(c) of this section, it shall be adequate to reduce the concentration of the air contaminant to the degree that a hazard to the worker does not exist. Methods of ventilation are discussed in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

(4) Control requirements.

(a) Control velocities shall conform to Table 18 in all cases where the flow of air past the breathing or working zone of the operator and into the hoods is undisturbed by local environmental conditions, such as open windows, wall fans, unit heaters, or moving machinery.

(b) All tanks exhausted by means of hoods which;

(i) Project over the entire tank;

(ii) Are fixed in position in such a location that the head of the workman, in all his normal operating positions while working at the tank, is in front of all hood openings; and

(iii) Are completely enclosed on at least two sides, shall be considered to be exhausted through an enclosing hood.

(iv) The quantity of air in cubic feet per minute necessary to be exhausted through an enclosing hood shall be not less than the product of the control velocity times the net area of all openings in the enclosure through which air can flow into the hood.

TABLE 18
CONTROL VELOCITIES IN FEET PER MINUTE (F.P.M.) FOR UNDISTURBED LOCATIONS

Class (See Sub-paragraph (2) and Tables 16 and 17)	Enclosing hood (See Subparagraph (4)(ii))		Lateral exhaust ¹ (See Subparagraph (4)(iii))	Canopy hood ² (See Subparagraph (4)(iv))	
	One open side	Two open sides		Three open sides	Four open sides
A-1 and A-2 ———	100	150	150	Do not use	Do not use
A-3 (Note ²), B-1, B-2, and C-1 ———	75	100	100	125	175
B-3, C-2, and D-1 (Note ³) ———	65	90	75	100	150
A-4 (Note ²), C-3, and D-2 (Note ³) ———	50	75	50	75	125
B-4, C-4, D-3 (Note ³), and D-4 ———	General room ventilation required.				

¹ See Table 19 for computation of ventilation rate.

² Do not use canopy hood for Hazard Potential A processes.

³ Where complete control of hot water is desired, design as next highest class.

(c) All tanks exhausted by means of hoods which do not project over the entire tank, and in which the direction of air movement into the hood or hoods is substantially horizontal, shall be considered to be laterally exhausted. The quantity of air in cubic feet per minute necessary to be laterally exhausted per square foot of tank area in order to maintain the required control velocity shall be determined from Table 19 for all variations in ratio of tank width (W) to tank length (L). The total quantity of air in cubic feet per minute required to be exhausted per tank shall be not less than the product of the area of tank surface times the cubic feet per minute per square foot of tank area, determined from Table 19.

(i) For lateral exhaust hoods over 42 inches wide, or where it is desirable to reduce the amount of air removed from the workroom, air supply slots or orifices shall be provided along the side or the center of the tank opposite from the exhaust slots. The design of such systems shall meet the following criteria:

(A) The supply air volume plus the entrained air shall not exceed 50 percent of the exhaust volume.

(B) The velocity of the supply airstream as it reaches the effective control area of the exhaust slot shall be less than the effective velocity over the exhaust slot area.

(C) The vertical height of the receiving exhaust hood, including any baffle, shall not be less than one-quarter the width of the tank.

(D) The supply airstream shall not be allowed to impinge on obstructions between it and the exhaust slot in such a man-

ner as to significantly interfere with the performance of the exhaust hood.

TABLE 19
MINIMUM VENTILATION RATE IN CUBIC FEET OF AIR PER
MINUTE PER SQUARE FOOT OF TANK AREA FOR LATERAL
EXHAUST

Required minimum control velocity, f.p.m. (from Table)	C.f.m. per sq. ft. to maintain required minimum velocities at following ratios (tank width (W)/tank length (L)). ^{1 3}				
	0.0-0.09	0.1-0.24	0.25-0.49	0.5-0.99	1.0-2.0
Hood along one side or two parallel sides of tank when one hood is against a wall or baffle. ²					
Also for a manifold along tank centerline. ³					
50	50	60	75	90	100
75	75	90	110	130	150
100	100	125	150	175	200
150	150	190	225	260	300
Hood along one side or two parallel sides of free standing tank not against wall or baffle.					
50	75	90	100	110	125
75	110	130	150	170	190
100	150	175	200	225	250
150	225	260	300	340	375

¹ It is not practicable to ventilate across the long dimension of a tank whose ratio W/L exceeds 2.0.

It is understandable to do so when W/L exceeds 1.0. For circular tanks with lateral exhaust along up the circumference use W/L = 1.0 for over one-half the circumference use W/L = 0.5.

² Baffle is a vertical plate the same length as the tank, and with the top of the plate as high as the tank is wide. If the exhaust hood is on the side of a tank against a building wall or close to it, it is perfectly baffled.

³ Use W/L as tank width in computing when manifold is along centerline, or when hoods are used on two parallel sides of a tank.

Tank Width (W) means the effective width over which the hood must pull air to operate (for example, where the hood face is not back from the edge of the tank, this set back must be added in measuring tank width). The surface area of tanks can frequently be reduced and better control obtained (particularly on conveyorized systems) by using covers extending from the upper edges of the slots toward the center of the tank.

(E) Since most failure of push-pull systems result from excessive supply air volumes and pressures, methods of measuring and adjusting the supply air shall be provided. When satisfactory control has been achieved, the adjustable features of the hood shall be fixed so that they will not be altered.

(d) All tanks exhausted by means of hoods which project over the entire tank, and which do not conform to the definition of enclosing hoods, shall be considered to be overhead canopy hoods. The quantity of air in cubic feet per minute necessary to be exhausted through a canopy hood shall be not less than the product of the control velocity times the net area of all openings between the bottom edges of the hood and the top edges of the tank.

(e) The rate of vapor evolution (including steam or products of combustion) from the process shall be estimated. If the rate of vapor evolution is equal to or greater than 10 percent of the calculated exhaust volume required, the exhaust volume shall be increased in equal amount.

(5) Spray cleaning and degreasing. Wherever spraying or other mechanical means are used to disperse a liquid above an open-surface tank, control must be provided for the airborne spray. Such operations shall be enclosed as completely

as possible. The inward air velocity into the enclosure shall be sufficient to prevent the discharge of spray into the workroom. Mechanical baffles may be used to help prevent the discharge of spray. Spray painting operations are covered in WAC 296-62-11019.

(6) Control means other than ventilation. Tank covers, foams, beads, chips, or other materials floating on the tank surface so as to confine gases, mists, or vapors to the area under the cover or to the foam, bead, or chip layer; or surface tension depressive agents added to the liquid in the tank to minimize mist formation, or any combination thereof, may all be used as gas, mist, or vapor control means for open-surface tank operations, provided that they effectively reduce the concentrations of hazardous materials in the vicinity of the worker below the limits set in accordance with (2) of this section.

(7) System design.

(a) The equipment for exhausting air shall have sufficient capacity to produce the flow of air required in each of the hoods and openings of the system.

(b) The capacity required in (7)(a) of this section shall be obtained when the airflow producing equipment is operating against the following pressure losses, the sum of which is the static pressure:

(i) Entrance losses into the hood.

(ii) Resistance to airflow in branch pipe including bends and transformations.

(iii) Entrance loss into the main pipe.

(iv) Resistance to airflow in main pipe including bends and transformations.

(v) Resistance of mechanical equipment; that is, filters, washers, condensers, absorbers, etc., plus their entrance and exit losses.

(vi) Resistance in outlet duct and discharge stack.

(c) Two or more operations shall not be connected to the same exhaust system where either one or the combination of the substances removed may constitute a fire, explosion, or chemical reaction hazard in the duct system. Traps or other devices shall be provided to insure that condensate in ducts does not drain back into any tank.

(d) The exhaust system, consisting of hoods, ducts, air mover, and discharge outlet shall be designed in accordance with American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, or the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists. Airflow and pressure loss data provided by the manufacturer of any air cleaning device shall be included in the design calculations.

(8) Operation.

(a) The required airflow shall be maintained at all times during which gas, mist, or vapor is emitted from the tank, and at all times the tank, the draining, or the drying area is in operation or use. When the system is first installed, the airflow from each hood shall be measured by means of a pitot traverse in the exhaust duct and corrective action taken if the flow is less than that required. When the proper flow is obtained, the hood static pressure shall be measured and recorded. At intervals of not more than 3 months operation, or after a prolonged shutdown period, the hoods and duct sys-

tem shall be inspected for evidence of corrosion or damage. In any case where the airflow is found to be less than required, it shall be increased to the required value. (Information on airflow and static pressure measurement and calculations may be found in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, or in the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists.)

(b) The exhaust system shall discharge to the outer air in such a manner that the possibility of its effluent entering any building is at a minimum. Recirculation shall only be through a device for contaminant removal which will prevent the creation of a health hazard in the room or area to which the air is recirculated.

(c) A volume of outside air in the range of 90 percent to 110 percent of the exhaust volume shall be provided to each room having exhaust hoods. The outside air supply shall enter the workroom in such a manner as not to be detrimental to any exhaust hood. The airflow of the makeup air system shall be measured on installation. Periodically, thereafter, the airflow should be remeasured, and corrective action shall be taken when the airflow is below that required. The makeup air shall be uncontaminated.

(9) Personal protection.

(a) All employees working in and around open surface tank operations must be instructed as to the hazards of their respective jobs, and in the personal protection and first aid procedures applicable to these hazards.

(b) All persons required to work in such a manner that their feet may become wet shall be provided with rubber or other impervious boots or shoes, rubbers, or wooden-soled shoes sufficient to keep feet dry.

(c) All persons required to handle work wet with a liquid other than water shall be provided with gloves impervious to such a liquid and of a length sufficient to prevent entrance of liquid into the tops of the gloves. The interior of gloves shall be kept free from corrosive or irritating contaminants.

(d) All persons required to work in such a manner that their clothing may become wet shall be provided with such aprons, coats, jackets, sleeves, or other garments made of rubber, or of other materials impervious to liquids other than water, as are required to keep their clothing dry. Aprons shall extend well below the top of boots to prevent liquid splashing into the boots. Provision of dry, clean, cotton clothing along with rubber shoes or short boots and an apron impervious to liquids other than water shall be considered a satisfactory substitute where small parts are cleaned, plated, or acid dipped in open tanks and rapid work is required.

(e) Whenever there is a danger of splashing, for example, when additions are made manually to the tanks, or when acids and chemicals are removed from the tanks, the employees so engaged shall be required to wear either tight-fitting chemical goggles or an effective face shield. (See WAC 296-800-160.)

(f) When, during emergencies as described in (11)(e) of this section, employees must be in areas where concentrations of air contaminants are greater than the limit set by (2)(c) of this section or oxygen concentrations are less than 19.5%, they must be required to wear respirators adequate to

reduce their exposure to a level below these limits or that provide adequate oxygen. Such respirators must also be provided in marked, quickly accessible storage compartments built for the purpose, when there exists the possibility of accidental release of hazardous concentrations of air contaminants. Respirators must be certified by NIOSH under 42 CFR part 84 and used in accordance with the applicable provisions of chapter 296-62 WAC Part E.

(g) Near each tank containing a liquid which may burn, irritate, or otherwise be harmful to the skin if splashed upon the worker's body, there shall be a supply of clean cold water. The water pipe (carrying a pressure not exceeding 25 pounds) shall be provided with a quick opening valve and at least 48 inches of hose not smaller than three-fourths inch, so that no time may be lost in washing off liquids from the skin or clothing. Alternatively, deluge showers and eye flushes shall be provided in cases where harmful chemicals may be splashed on parts of the body.

(h) Operators with sores, burns, or other skin lesions requiring medical treatment shall not be allowed to work at their regular operations until so authorized by a physician. Any small skin abrasions, cuts, rash, or open sores which are found or reported shall be treated by a properly designated person so that chance of exposures to the chemicals are removed. Workers exposed to chromic acids shall have a periodic examination made of the nostrils and other parts of the body, to detect incipient ulceration.

(i) Sufficient washing facilities, including soap, individual towels, and hot water, shall be provided for all persons required to use or handle any liquids which may burn, irritate, or otherwise be harmful to the skin, on the basis of at least one basin (or its equivalent) with a hot water faucet for every 10 employees. (See WAC 296-800-230.)

(j) Locker space or equivalent clothing storage facilities shall be provided to prevent contamination of street clothing.

(k) First aid facilities specific to the hazards of the operations conducted shall be readily available.

(10) Special precautions for cyanide. Dikes or other arrangements shall be provided to prevent the possibility of intermixing of cyanide and acid in the event of tank rupture.

(11) Inspection, maintenance, and installation.

(a) Floors and platforms around tanks shall be prevented from becoming slippery both by original type of construction and by frequent flushing. They shall be firm, sound, and of the design and construction to minimize the possibility of tripping.

(b) Before cleaning the interior of any tank, the contents shall be drained off, and the cleanout doors shall be opened where provided. All pockets in tanks or pits, where it is possible for hazardous vapors to collect, shall be ventilated and cleared of such vapors.

(c) Tanks which have been drained to permit employees to enter for the purposes of cleaning, inspection, or maintenance may contain atmospheres which are hazardous to life or health, through the presence of flammable or toxic air contaminants, or through the absence of sufficient oxygen. Before employees shall be permitted to enter any such tank, appropriate tests of the atmosphere shall be made to determine if the limits set by (2)(c) of this section are exceeded, or if the oxygen concentration is less than 19.5%.

(d) If the tests made in accordance with (11)(c) of this section indicate that the atmosphere in the tank is unsafe, before any employee is permitted to enter the tank, the tank shall be ventilated until the hazardous atmosphere is removed, and ventilation shall be continued so as to prevent the occurrence of a hazardous atmosphere as long as an employee is in the tank.

(e) If, in emergencies, such as rescue work, it is necessary to enter a tank which may contain a hazardous atmosphere, suitable respirators, such as self-contained breathing apparatus; hose mask with blower, if there is a possibility of oxygen deficiency; or a gas mask, selected and operated in accordance with (9)(f) of this section, shall be used. If a contaminant in the tank can cause dermatitis, or be absorbed through the skin, the employee entering the tank shall also wear protective clothing. At least one trained standby employee, with suitable respirator, shall be present in the nearest uncontaminated area. The standby employee must be able to communicate with the employee in the tank and be well able to haul him out of the tank with a lifeline if necessary.

(f) Maintenance work requiring welding or open flame, where toxic metal fumes such as cadmium, chromium, or lead may be evolved, shall be done only with sufficient local exhaust ventilation to prevent the creation of a health hazard, or be done with respirators selected and used in accordance with (9)(f) of this section. Welding, or the use of open flames near any solvent cleaning equipment shall be permitted only after such equipment has first been thoroughly cleared of solvents and vapors.

(12) Vapor degreasing tanks.

(a) In any vapor degreasing tank equipped with a condenser and vapor level thermostat, the condenser or thermostat shall keep the level of vapors below the top edge of the tank by a distance at least equal to one-half the tank width, or at least 36 inches, whichever is shorter.

(b) Where gas is used as a fuel for heating vapor degreasing tanks, the combustion chamber shall be of tight construction, except for such openings as the exhaust flue, and those that are necessary for supplying air for combustion. Flues shall be of corrosion-resistant construction and shall extend to the outer air. If mechanical exhaust is used on this flue, a draft diverter shall be used. Special precautions must be taken to prevent solvent fumes from entering the combustion air of this or any other heater when chlorinated or fluorinated hydrocarbon solvents (for example, trichloroethylene; Freon) are used.

(c) Heating elements shall be so designed and maintained that their surface temperature will not cause the solvent or mixture to decompose, break down, or be converted into an excessive quantity of vapor.

(d) Tanks or machines of more than 4 square feet of vapor area, used for solvent cleaning or vapor degreasing, shall be equipped with suitable cleanout or sludge doors located near the bottom of each tank or still. These doors shall be so designed and gasketed that there will be no leakage of solvent when they are closed.

(13) Scope.

(a) This paragraph applies to all operations involving the immersion of materials in liquids, or in the vapors of such liq-

uids, for the purpose of cleaning or altering their surfaces, or adding or imparting a finish thereto, or changing the character of the materials, and their subsequent removal from the liquids or vapors, draining, and drying. Such operations include washing, electroplating, anodizing, pickling, quenching, dyeing, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and other similar operations, but do not include molten materials handling operations, or surface coating operations.

(b) "Molten materials handling operations" means all operations, other than welding, burning, and soldering operations, involving the use, melting, smelting, or pouring of metals, alloys, salts, or other similar substances in the molten state. Such operations also include heat treating baths, descaling baths, die casting stereotyping, galvanizing, tinning, and similar operations.

(c) "Surface coating operations" means all operations involving the application of protective, decorative, adhesive, or strengthening coating or impregnation to one or more surfaces, or into the interstices of any object or material, by means of spraying, spreading, flowing, brushing, roll coating, pouring, cementing, or similar means; and any subsequent draining or drying operations, excluding open-tank operations.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-11021, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-62-11021, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-62-11021, filed 11/22/91, effective 12/24/91. RCW 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-11021, filed 7/27/81; 80-11-010 (Order 80-14), § 296-62-11021, filed 8/8/80; Order 73-3, § 296-62-11021, filed 5/7/73.]

WAC 296-62-12000 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-12003 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-12005 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-12009 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-62-14533 Cotton dust. (1) Scope and application.

(a) This section, in its entirety, applies to the control of employee exposure to cotton dust in all workplaces where employees engage in yarn manufacturing, engage in slashing and weaving operations, or work in waste houses for textile operations.

(b) This section does not apply to the handling or processing of woven or knitted materials; to maritime operations covered by chapters 296-56 and 296-304 WAC; to harvesting or ginning of cotton; or to the construction industry.

(c) Only subsection (8) Medical surveillance, subsection (11)(b) Medical surveillance, subsection (11)(c) Availability, subsection (11)(d) Transfer of records, and Appendices B, C, and D of this section apply in all work places where employ-

ees exposed to cotton dust engage in cottonseed processing or waste processing operations.

(d) This section applies to yarn manufacturing and slashing and weaving operations exclusively using washed cotton (as defined by subsection (14) of this section) only to the extent specified by subsection (14) of this section.

(e) This section, in its entirety, applies to the control of all employees exposure to the cotton dust generated in the preparation of washed cotton from opening until the cotton is thoroughly wetted.

(f) This section does not apply to knitting, classing or warehousing operations except that employers with these operations, if requested by WISHA, shall grant WISHA access to their employees and workplaces for exposure monitoring and medical examinations for purposes of a health study to be performed by WISHA on a sampling basis.

(2) Definitions applicable to this section:

(a) "Blow down" - the cleaning of equipment and surfaces with compressed air.

(b) "Blow off" - the use of compressed air for cleaning of short duration and usually for a specific machine or any portion of a machine.

(c) "Cotton dust" - dust present in the air during the handling or processing of cotton, which may contain a mixture of many substances including ground-up plant matter, fiber, bacteria, fungi, soil, pesticides, noncotton plant matter and other contaminants which may have accumulated with the cotton during the growing, harvesting and subsequent processing or storage periods. Any dust present during the handling and processing of cotton through the weaving or knitting of fabrics, and dust present in other operations or manufacturing processes using raw or waste cotton fibers or cotton fiber byproducts from textile mills are considered cotton dust within this definition. Lubricating oil mist associated with weaving operations is not considered cotton dust.

(d) "Director" - the director of labor and industries or his authorized representative.

(e) "Equivalent instrument" - a cotton dust sampling device that meets the vertical elutriator equivalency requirements as described in subsection (4)(a)(iii) of this section.

(f) "Lint-free respirable cotton dust" - particles of cotton dust of approximately 15 microns or less aerodynamic equivalent diameter.

(g) "Vertical elutriator cotton dust sampler" or "vertical elutriator" - a dust sampler which has a particle size cut-off at approximately 15 microns aerodynamic equivalent diameter when operating at the flow rate of 7.4 ± 0.2 liters per minute.

(h) "Waste processing" - waste recycling (sorting, blending, cleaning and willowing) and garnetting.

(i) "Yarn manufacturing" - all textile mill operations from opening to, but not including, slashing and weaving.

(3) Permissible exposure limits and action levels.

(a) Permissible exposure limits (PEL).

(i) The employer shall assure that no employee who is exposed to cotton dust in yarn manufacturing and cotton washing operations is exposed to airborne concentrations of lint-free respirable cotton dust greater than $200 \mu\text{g}/\text{m}^3$ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(ii) The employer shall assure that no employee who is exposed to cotton dust in textile mill waste house operations or is exposed in yarn manufacturing to dust from "lower grade washed cotton" as defined in subsection (14)(e) of this section is exposed to airborne concentrations of lint-free respirable cotton dust greater than $500 \mu\text{g}/\text{m}^3$ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(iii) The employer shall assure that no employee who is exposed to cotton dust in the textile processes known as slashing and weaving is exposed to airborne concentrations of lint-free respirable cotton dust greater than $750 \mu\text{g}/\text{m}^3$ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(b) Action levels.

(i) The action level for yarn manufacturing and cotton washing operations is an airborne concentration of lint-free respirable cotton dust of $100 \mu\text{g}/\text{m}^3$ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(ii) The action level for waste houses for textile operations is an airborne concentration of lint-free respirable cotton dust of $250 \mu\text{g}/\text{m}^3$ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(iii) The action level for the textile processes known as slashing and weaving is an airborne concentration of lint-free respirable cotton dust of $375 \mu\text{g}/\text{m}^3$ mean concentration, averaged over an eight-hour period, as measured by a vertical elutriator or an equivalent instrument.

(4) Exposure monitoring and measurement.

(a) General.

(i) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(ii) The sampling device to be used shall be either the vertical elutriator cotton dust sampler or an equivalent instrument.

(iii) If an alternative to the vertical elutriator cotton dust sampler is used, the employer shall establish equivalency by demonstrating that the alternative sampling devices:

(A) It collects respirable particulates in the same range as the vertical elutriator (approximately 15 microns);

(B) Replicate exposure data used to establish equivalency are collected in side-by-side field and laboratory comparisons; and

(C) A minimum of 100 samples over the range of 0.5 to 2 times the permissible exposure limit are collected, and ninety percent of these samples have an accuracy range of plus or minus twenty-five percent of the vertical elutriator reading with a ninety-five percent confidence level as demonstrated by a statistically valid protocol. (An acceptable protocol for demonstrating equivalency is described in Appendix E of this section.)

(iv) WISHA will issue a written opinion stating that an instrument is equivalent to a vertical elutriator cotton dust sampler if:

(A) A manufacturer or employer requests an opinion in writing and supplies the following information:

(I) Sufficient test data to demonstrate that the instrument meets the requirements specified in this paragraph and the protocol specified in Appendix E of this section;

(II) Any other relevant information about the instrument and its testing requested by WISHA; and

(III) A certification by the manufacturer or employer that the information supplied is accurate, and

(B) If WISHA finds, based on information submitted about the instrument, that the instrument meets the requirements for equivalency specified by this subsection.

(b) Initial monitoring. Each employer who has a place of employment within the scope of subsections (1)(a), (d) or (e) of this section shall conduct monitoring by obtaining measurements which are representative of the exposure of all employees to airborne concentrations of lint-free respirable cotton dust over an eight-hour period. The sampling program shall include at least one determination during each shift for each work area.

(c) Periodic monitoring.

(i) If the initial monitoring required by (4)(b) of this section or any subsequent monitoring reveals employee exposure to be at or below the permissible exposure limit, the employer shall repeat the monitoring for those employees at least annually.

(ii) If the initial monitoring required by (4)(b) of this section or any subsequent monitoring reveals employee exposure to be above the PEL, the employer shall repeat the monitoring for those employees at least every six months.

(iii) Whenever there has been a production, process, or control change which may result in new or additional exposure to cotton dust, or whenever the employer has any other reason to suspect an increase in employee exposure, the employer shall repeat the monitoring and measurements for those employees affected by the change or increase.

(d) Employee notification.

(i) Within twenty working days after the receipt of monitoring results, the employer shall notify each employee in writing of the exposure measurements which represent that employee's exposure.

(ii) Whenever the results indicate that the employee's exposure exceeds the applicable permissible exposure limit specified in subsection (3) of this section, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken to reduce exposure below the permissible exposure limit.

(5) Methods of compliance.

(a) Engineering and work practice controls. The employer shall institute engineering and work practice controls to reduce and maintain employee exposure to cotton dust at or below the permissible exposure limit specified in subsection (3) of this section, except to the extent that the employer can establish that such controls are not feasible.

(b) Whenever feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the permissible exposure limit, the employer shall nonetheless institute these controls to immediately reduce exposure to the lowest feasible level, and shall supplement these controls with the use of respirators which shall comply with the provisions of subsection (6) of this section.

(c) Compliance program.

(i) Where the most recent exposure monitoring data indicates that any employee is exposed to cotton dust levels greater than the permissible exposure limit, the employer shall establish and implement a written program sufficient to reduce exposures to or below the permissible exposure limit solely by means of engineering controls and work practices as required by (a) of this subsection.

(ii) The written program shall include at least the following:

(A) A description of each operation or process resulting in employee exposure to cotton dust;

(B) Engineering plans and other studies used to determine the controls for each process;

(C) A report of the technology considered in meeting the permissible exposure limit;

(D) Monitoring data obtained in accordance with subsection (4) of this section;

(E) A detailed schedule for development and implementation of engineering and work practice controls, including exposure levels projected to be achieved by such controls;

(F) Work practice program; and

(G) Other relevant information.

(iii) The employer's schedule as set forth in the compliance program, shall project completion of the implementation of the compliance program no later than March 27, 1984 or as soon as possible if monitoring after March 27, 1984 reveals exposures over the PEL, except as provided in (13)(b)(ii)(B) of this section.

(iv) The employer shall complete the steps set forth in his program by the dates in the schedule.

(v) Written programs shall be submitted, upon request, to the director, and shall be available at the worksite for examination and copying by the director, and any affected employee or their designated representatives.

(vi) The written programs required under subsection (5)(c) of this section shall be revised and updated at least every six months to reflect the current status of the program and current exposure levels.

(d) Mechanical ventilation. When mechanical ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system to control exposure, such as capture velocity, duct velocity, or static pressure shall be made at reasonable intervals.

(6) Use of respirators.

(a) General. For employees who are required to use respirators by this section, the employer must provide respirators that comply with the requirements of this section. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering controls and work-practice controls;

(ii) Maintenance and repair activities for which engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the permissible exposure limits;

(iv) Work operations specified under subsection (7)(a) of this section;

(v) Periods for which an employee requests a respirator.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and 296-62-07150 through 296-62-07156).

(ii) Whenever a physician determines that an employee who works in an area in which the cotton-dust concentration exceeds the PEL is unable to use a respirator, including a powered air-purifying respirator, the employee must be given the opportunity to transfer to an available position, or to a position that becomes available later, that has a cotton-dust concentration at or below the PEL. The employer must ensure that such employees retain their current wage rate or other benefits as a result of the transfer.

(c) Respirator selection.

(i) The employer must select the appropriate respirator from Table 1 of this section.

TABLE - 1

Cotton dust concentration	Required respirator
Not greater than—	
(a) 5 x the applicable permissible exposure limit (PEL).	A disposable respirator with a particulate filter.
(b) 10 x the applicable PEL.	A quarter or half-mask respirator, other than a disposable respirator, equipped with particulate filters.
(c) 100 x the applicable PEL.	A full facepiece respirator equipped with high-efficiency particulate filters.
(d) Greater than 100 x the applicable PEL.	A powered air-purifying respirator equipped with high-efficiency particulate filters.

Notes

1. A disposable respirator means the filter element is an inseparable part of the respirator.
2. Any respirators permitted at higher environmental concentrations can be used at lower concentrations.
3. Self-contained breathing apparatus are not required respirators but are permitted respirators.
4. Supplied air respirators are not required but are permitted under the following conditions: Cotton dust concentration not greater than 10X the PEL—Any supplied air respirator; not greater than 100X the PEL—Any supplied air respirator with full facepiece, helmet or hood; greater than 100X the PEL—A supplied air respirator operated in positive pressure mode.

(ii) Whenever respirators are required by this section for cotton-dust concentrations that do not exceed the applicable permissible exposure limit by a multiple of 100 (100 x), the employer must, when requested by an employee, provide a powered air-purifying respirator with a high-efficiency particulate filter instead of the respirator specified in (a), (b), or (c) of Table 1 of this section.

(7) Work practices. Each employer shall, regardless of the level of employee exposure, immediately establish and implement a written program of work practices which shall minimize cotton dust exposure. The following shall be included where applicable:

(a) Compressed air "blow down" cleaning shall be prohibited, where alternative means are feasible. Where compressed air is used for cleaning, the employees performing the "blow down" or "blow off" shall wear suitable respirators. Employees whose presence is not required to perform "blow down" or "blow off" shall be required to leave the area affected by the "blow down" or "blow off" during this cleaning operation.

(b) Cleaning of clothing or floors with compressed air shall be prohibited.

(c) Floor sweeping shall be performed with a vacuum or with methods designed to minimize dispersal of dust.

(d) In areas where employees are exposed to concentrations of cotton dust greater than the permissible exposure limit, cotton and cotton waste shall be stacked, sorted, baled, dumped, removed or otherwise handled by mechanical means, except where the employer can show that it is infeasible to do so. Where infeasible, the method used for handling cotton and cotton waste shall be the method which reduces exposure to the lowest level feasible.

(8) Medical surveillance.

(a) General.

(i) Each employer covered by the standard shall institute a program of medical surveillance for all employees exposed to cotton dust.

(ii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided without cost to the employee.

(iii) Persons other than licensed physicians, who administer the pulmonary function testing required by this section shall have completed a NIOSH approved training course in spirometry.

(b) Initial examinations. The employer shall provide medical surveillance to each employee who is or may be exposed to cotton dust. For new employees' this examination shall be provided prior to initial assignment. The medical surveillance shall include at least the following:

(i) A medical history;

(ii) The standardized questionnaire contained in WAC 296-62-14537; and

(iii) A pulmonary function measurement, including a determination of forced vital capacity (FVC) and forced expiratory volume in one second (FEV_1), the FEV_1/FVC ratio, and the percentage that the measured values of FEV_1 and FVC differ from the predicted values, using the standard tables in WAC 296-62-14539. These determinations shall be made for each employee before the employee enters the workplace on the first day of the work week, preceded by at least thirty-five hours of no exposure to cotton dust. The tests shall be repeated during the shift, no less than four hours and no more than ten hours after the beginning of the work shift; and, in any event, no more than one hour after cessation of exposure. Such exposure shall be typical of the employee's usual workplace exposure. The predicted FEV_1 and FVC for blacks shall be multiplied by 0.85 to adjust for ethnic differences.

(iv) Based upon the questionnaire results, each employee shall be graded according to Schilling's byssinosis classification system.

(c) Periodic examinations.

(i) The employer shall provide at least annual medical surveillance for all employees exposed to cotton dust above the action level in yarn manufacturing, slashing and weaving, cotton washing and waste house operations. The employer shall provide medical surveillance at least every two years for all employees exposed to cotton dust at or below the action level, for all employees exposed to cotton dust from washed

cotton (except from washed cotton defined in subsection (9)(c) of this section), and for all employees exposed to cotton dust in cottonseed processing and waste processing operations. Periodic medical surveillance shall include at least an update of the medical history, standardized questionnaire (Appendix B-111), Schilling byssinosis grade, and the pulmonary function measurements in (b)(iii) of this subsection.

(ii) Medical surveillance as required in (c)(i) of this subsection shall be provided every six months for all employees in the following categories:

(A) An FEV₁ of greater than eighty percent of the predicted value, but with an FEV₁ decrement of five percent or 200 ml. on a first working day;

(B) An FEV₁ of less than eighty percent of the predicted value; or

(C) Where, in the opinion of the physician, any significant change in questionnaire findings, pulmonary function results, or other diagnostic tests have occurred.

(iii) An employee whose FEV₁ is less than sixty percent of the predicted value shall be referred to a physician for a detailed pulmonary examination.

(iv) A comparison shall be made between the current examination results and those of previous examinations and a determination made by the physician as to whether there has been a significant change.

(d) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this regulation and its appendices;

(ii) A description of the affected employee's duties as they relate to the employee's exposure;

(iii) The employee's exposure level or anticipated exposure level;

(iv) A description of any personal protective equipment used or to be used; and

(v) Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

(e) Physician's written opinion.

(i) The employer shall obtain and furnish the employee with a copy of a written opinion from the examining physician containing the following:

(A) The results of the medical examination and tests including the FEV₁, FVC, and FEV₁/FVC ratio;

(B) The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from exposure to cotton dust;

(C) The physician's recommended limitations upon the employee's exposure to cotton dust or upon the employee's use of respirators including a determination of whether an employee can wear a negative pressure respirator, and where the employee cannot, a determination of the employee's ability to wear a powered air purifying respirator; and

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposure.

(9) Employee education and training.

(a) Training program.

(i) The employer shall provide a training program for all employees exposed to cotton dust and shall assure that each employee is informed of the following:

(A) The acute and long term health hazards associated with exposure to cotton dust;

(B) The names and descriptions of jobs and processes which could result in exposure to cotton dust at or above the PEL.

(C) The measures, including work practices required by subsection (7) of this section, necessary to protect the employee from exposures in excess of the permissible exposure limit;

(D) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by subsection (6) of this section and chapter 296-62 WAC, Part E (see WAC 296-62-07117, 296-62-07172, and 296-62-01786 through 296-62-07190);

(E) The purpose for and a description of the medical surveillance program required by subsection (8) of this section and other information which will aid exposed employees in understanding the hazards of cotton dust exposure; and

(F) The contents of this standard and its appendices.

(ii) The training program shall be provided prior to initial assignment and shall be repeated annually for each employee exposed to cotton dust, when job assignments or work processes change and when employee performance indicates a need for retraining.

(b) Access to training materials.

(i) Each employer shall post a copy of this section with its appendices in a public location at the workplace, and shall, upon request, make copies available to employees.

(ii) The employer shall provide all materials relating to the employee training and information program to the director upon request.

(10) Signs. The employer shall post the following warning sign in each work area where the permissible exposure limit for cotton dust is exceeded:

WARNING
COTTON DUST WORK AREA
MAY CAUSE ACUTE OR DELAYED LUNG INJURY
(BYSSINOSIS)
RESPIRATORS REQUIRED IN THIS AREA

(11) Recordkeeping.

(a) Exposure measurements.

(i) The employer shall establish and maintain an accurate record of all measurements required by subsection (4) of this section.

(ii) The record shall include:

(A) A log containing the items listed in WAC 296-62-14535 (4)(a), and the dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(B) The type of protective devices worn, if any, and length of time worn; and

(C) The names, social security number, job classifications, and exposure levels of employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least twenty years.

(b) Medical surveillance.

(i) The employer shall establish and maintain an accurate medical record for each employee subject to medical surveillance required by subsection (8) of this section.

(ii) The record shall include:

(A) The name and social security number and description of the duties of the employee;

(B) A copy of the medical examination results including the medical history, questionnaire response, results of all tests, and the physician's recommendation;

(C) A copy of the physician's written opinion;

(D) Any employee medical complaints related to exposure to cotton dust;

(E) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and the appendices for all employees, provided that he references the standard and appendices in the medical surveillance record of each employee; and

(F) A copy of the information provided to the physician as required by subsection (8)(d) of this section.

(iii) The employer shall maintain this record for at least twenty years.

(c) Availability.

(i) The employer shall make all records required to be maintained by subsection (11) of this section available to the director for examination and copying.

(ii) Employee exposure measurement records and employee medical records required by this subsection 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.

(d) Transfer of records.

(i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by subsection (11) of this section.

(ii) Whenever the employer ceases to do business, and there is no successor employer to receive and retain the records for the prescribed period, these records shall be transmitted to the director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the director at least three months prior to the disposal of such records and shall transmit those records to the director if he requests them within that period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in WAC 296-62-05215.

(12) Observation of monitoring.

(a) The employer shall provide affected employees or their designated representatives an opportunity to observe any measuring or monitoring of employee exposure to cotton dust conducted pursuant to subsection (4) of this section.

(b) Whenever observation of the measuring or monitoring of employee exposure to cotton dust requires entry into an

area where the use of personal protective equipment is required, the employer shall provide the observer with and assure the use of such equipment and shall require the observer to comply with all other applicable safety and health procedures.

(c) Without interfering with the measurement, observers shall be entitled to:

(i) An explanation of the measurement procedures;

(ii) An opportunity to observe all steps related to the measurement of airborne concentrations of cotton dust performed at the place of exposure; and

(iii) An opportunity to record the results obtained.

(13) Washed cotton.

(a) Exemptions. Cotton, after it has been washed by the processes described in this section is exempt from all or parts of this section as specified if the requirements of this section are met.

(b) Initial requirements.

(i) In order for an employer to qualify as exempt or partially exempt from this standard for operations using washed cotton, the employer must demonstrate that the cotton was washed in a facility which is open to inspection by the director and the employer must provide sufficient accurate documentary evidence to demonstrate that the washing methods utilized meet the requirements of this section.

(ii) An employer who handles or processes cotton which has been washed in a facility not under the employer's control and claims an exemption or partial exemption under this paragraph, must obtain from the cotton washer and make available at the worksite, to the director, or his designated representative, to any affected employee, or to their designated representative the following:

(A) A certification by the washer of the cotton of the grade of cotton, the type of washing process, and that the batch meets the requirements of this section:

(B) Sufficient accurate documentation by the washer of the cotton grades and washing process; and

(C) An authorization by the washer that the director may inspect the washer's washing facilities and documentation of the process.

(c) Medical and dyed cotton. Medical grade (USP) cotton, cotton that has been scoured, bleached and dyed, and mercerized yarn shall be exempt from all provisions of this standard.

(d) Higher grade washed cotton. The handling or processing of cotton classed as "low middling light spotted or better" (color grade 52 or better and leaf grade code 5 or better according to the 1993 USDA classification system) shall be exempt from all provisions of the standard except requirements of subsection (8) of this section, medical surveillance; subsection (11)(b) through (d) of this section, recordkeeping-medical records, and Appendices B, C, and D of this section, if they have been washed on one of the following systems:

(i) On a continuous batt system or a rayon rinse system including the following conditions:

(A) With water;

(B) At a temperature of no less than 60°C;

(C) With a water-to-fiber ratio of no less than 40:1; and

(D) With the bacterial levels in the wash water controlled to limit bacterial contamination of the cotton.

(ii) On a batch kier washing system including the following conditions:

- (A) With water;
- (B) With cotton fiber mechanically opened and thoroughly prewetted before forming the cake;
- (C) For low-temperature processing, at a temperature of no less than 60°C with a water-to-fiber ratio of no less than 40:1; or, for high-temperature processing, at a temperature of no less than 93°C with a water-to-fiber ratio of no less than 15:1;

(D) With a minimum of one wash cycle followed by two rinse cycles for each batch, using fresh water in each cycle; and

(E) With bacterial levels in the wash water controlled to limit bacterial contamination of the cotton.

(e) Lower grade washed cotton. The handling and processing of cotton of grades lower than "low middling light spotted," that has been washed as specified in (d) of this subsection and has also been bleached, shall be exempt from all provisions of the standard except the requirements of subsection (3)(a) Permissible exposure limits, subsection (4) Exposure monitoring and measurement, subsection (8) Medical surveillance, subsection (11) Recordkeeping, and Appendices B, C and D of this section.

(f) Mixed grades of washed cotton. If more than one grade of washed cotton is being handled or processed together, the requirements of the grade with the most stringent exposure limit, medical and monitoring requirements shall be followed.

(14) Appendices.

(a) Appendix B (B-I, B-II and B-III), WAC 296-62-14537, Appendix C, WAC 296-62-14539 and Appendix D, WAC 296-62-14541 are incorporated as part of this chapter and the contents of these appendices are mandatory.

(b) Appendix A of this chapter, WAC 296-62-14535 contains information which is not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

(c) Appendix E of this chapter is a protocol which may be followed in the validation of alternative measuring devices as equivalent to the vertical elutriator cotton dust sampler. Other protocols may be used if it is demonstrated that they are statistically valid, meet the requirements in subsection (4)(a)(iii) of this section, and are appropriate for demonstrating equivalency.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-19-065, § 296-62-14533, filed 9/18/01, effective 11/1/01; 99-10-071, § 296-62-14533, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 87-24-051 (Order 87-24), § 296-62-14533, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-009 (Order 86-28), § 296-62-14533, filed 7/25/86; 82-03-023 (Order 82-1), § 296-62-14533, filed 1/15/82. Statutory Authority: 49.17.040, 49.17.050, and 49.17.240. 81-16-015 (Order 81-20), § 296-62-14533, filed 7/27/81. 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), § 296-62-14533, filed 11/13/80.]

WAC 296-62-20013 Protective clothing and equipment. (1) Provision and Use. The employer shall provide and assure the use of appropriate protective clothing and equipment, such as but not limited to:

- (a) Flame resistant jacket and pants;

- (b) Flame resistant gloves;
- (c) Face shields or vented goggles which comply with WAC 296-800-160;

- (d) Footwear providing insulation from hot surfaces;
- (e) Safety shoes which comply with WAC 296-800-160; and

- (f) Protective helmets which comply with WAC 296-800-160.

(2) Cleaning and Replacement.

(a) The employer shall provide the protective clothing required by subsection (1)(a) and (b) of this section in a clean and dry condition at least weekly.

(b) The employer shall clean, launder, or dispose of protective clothing required by subsections (1)(a) and (b) of this section.

(c) The employer shall repair or replace the protective clothing and equipment as needed to maintain their effectiveness.

(d) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change rooms prescribed in WAC 296-62-20015.

(e) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the changeroom.

(f) The employer shall inform any person who cleans or launders protective clothing required by this section, of the potentially harmful effects of exposure to coke oven emissions.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-20013, filed 5/9/01, effective 9/1/01; Order 77-14, § 296-62-20013, filed 7/25/77.]

WAC 296-62-20015 Hygiene facilities and practices.

(1) Change rooms. The employer shall provide clean change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing and equipment whenever employees are required to wear protective clothing and equipment in accordance with WAC 296-62-20013.

(2) Showers.

(a) The employer shall assure that employees working in the regulated area shower at the end of the work shift.

(b) The employer shall provide shower facilities in accordance with WAC 296-24-12009.

(3) Lunchrooms. The employer shall provide lunchroom facilities which have a temperature controlled, positive pressure, filtered air supply, and which are readily accessible to employees working in the regulated area.

(4) Lavatories.

(a) The employer shall assure that employees working in the regulated area wash their hands and face prior to eating.

(b) The employer shall provide lavatory facilities in accordance with WAC 296-800-230.

(5) Prohibition of activities in the regulated area.

(a) The employer shall assure that in the regulated area, food or beverages are not present or consumed, smoking products are not present or used, and cosmetics are not applied, except, that these activities may be conducted in the lunchrooms, change rooms and showers required under subsection (1)-(3) of this section.

(b) Drinking water may be consumed in the regulated area.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-20015, filed 5/9/01, effective 9/1/01; Order 77-14, § 296-62-20015, filed 7/25/77.]

WAC 296-62-30001 Scope and application. (1) Scope.

This section covers employers who have employees who work in the following operations:

(a) Clean-up operations required by a governmental body, whether federal, state, local, or other involving hazardous substances that are conducted at uncontrolled hazardous waste sites (including, but not limited to, the EPA's National Priority Site List (NPL), state priority site lists, sites recommended for the EPA NPL, and initial investigations of government identified sites which are conducted before the presence or absence of hazardous substances has been ascertained);

(b) Corrective actions involving clean-up operations at sites covered by the Resource Conservation and Recovery Act of 1976 (RCRA) as amended (42 U.S.C. 6901 et seq.);

(c) Voluntary clean-up operations at sites recognized by federal, state, local, or other governmental bodies as uncontrolled hazardous waste sites;

(d) Operations involving hazardous wastes that are conducted at treatment, storage, and disposal (TSD) facilities regulated by 40 CFR Parts 264 and 265 under RCRA; or by agencies under agreement with U.S.E.P.A. to implement RCRA regulations.

(2) Application.

(a) All requirements of this chapter and chapters 296-24, 296-155, and 296-800 WAC apply to hazardous waste operations whether covered by this part or not. If there is a conflict or overlap, the provision more protective of employee safety and health must apply.

(b) Hazardous substance clean-up operations within the scope of subsection (1)(a), (b), and (c) of this section must comply with all sections of WAC 296-62-410, Part R, Emergency response to hazardous substance release.

(c) Operations within the scope of subsection (1)(d) of this section must comply only with the requirements of WAC 296-62-3140 through 296-62-31430.

Notes and Exceptions:

(i) All provisions of WAC 296-62-3140 through 296-62-31430 cover any treatment, storage, or disposal (TSD) operation regulated by 40 CFR Parts 264 and 265 or by state law authorized under RCRA, and required to have a permit or interim status from EPA under 40 CFR 270.1 or from a state agency under RCRA.

(ii) Employers who are not required to have a permit or interim status because they are conditionally exempt small quantity generators under 40 CFR 261.5 or are generators who qualify under 40 CFR 262.34 for exemptions from regulation under 40 CFR Parts 264, 265, and 270 ("excepted employers") are not covered by WAC 296-62-31405 through 296-62-31445. Excepted employers who are required by the EPA or state agency to have their employees engage in emergency response or who direct their employees to engage in emergency response are covered by WAC 296-62-31450

through 296-62-31470 and cannot be exempted by WAC 296-62-31455. Excepted employers who are not required to have employees engage in emergency response, who direct their employees to evacuate in the case of such emergencies and who meet the requirements of WAC 296-62-31455 are exempt from the balance of WAC 296-62-31450 through 296-62-31470.

(iii) If an area is used primarily for treatment, storage or disposal, any emergency response operations in that area must comply with WAC 296-62-31410 through 296-62-31470. In other areas not used primarily for treatment, storage or disposal, any emergency response operations must comply with WAC 296-62-410, Part R, Emergency response to hazardous substance release. Compliance with the requirements of WAC 296-62-410, Part R, Emergency response to hazardous substance release must be deemed to be in compliance with the requirements of WAC 296-62-31450 through 296-62-31470.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-30001, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-30001, filed 3/23/99, effective 6/23/99.]

WAC 296-62-30230 Risk identification. Once the presence and concentrations of specific hazardous substances and health hazards have been established, the risks associated with these substances must be identified. Employees who will be working on the site must be informed of any risks that have been identified. In situations covered by WAC 296-800-170, training required by those standards need not be duplicated.

Note: Risks to consider include, but are not limited to:

(1) Exposures exceeding the permissible exposure limits and published exposure levels.

(2) IDLH concentrations.

(3) Potential skin absorption and irritation sources.

(4) Potential eye irritation sources.

(5) Explosion sensitivity and flammability ranges.

(6) Oxygen deficiency.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-30230, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-30230, filed 3/23/99, effective 6/23/99.]

WAC 296-62-30235 Employee notification. Any information concerning the chemical, physical, and toxicologic properties of each substance known or expected to be present on site that is available to the employer and relevant to the duties an employee is expected to perform must be made available to all employees prior to the commencement of their work activities. The employer may use information developed for the chemical hazard communication standard, WAC 296-800-170, for this purpose.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-30235, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-30235, filed 3/23/99, effective 6/23/99.]

WAC 296-62-30425 Training course content for 40 and 80 hour hazardous waste cleanup courses. As a mini-

mum, the training course content for the 40 hour and 80 hour training program must include the following topics:

- (1) Overview of the applicable sections of Part P of chapter 296-62 WAC and the elements of an employer's effective occupational safety and health program.
- (2) Effect of chemical exposure to hazardous substances (i.e., toxicity, carcinogens, irritants, sensitizers, etc.).
- (3) Effects of biological and radiological exposures.
- (4) Fire and explosion hazards (i.e., flammable and combustible liquids, reactive materials).
- (5) General safety hazards, including electrical hazards, powered equipment hazards, walking-working surface hazards and those hazards associated with hot and cold temperature extremes.
- (6) Permit-required confined space, tank, and vault hazards and entry procedures.
- (7) Names of personnel and alternates, where appropriate, responsible for site safety and health at the site.
- (8) Specific safety, health, and other hazards that are to be addressed at a site and in the site safety and health plan.
- (9) Use of personal protective equipment and the implementation of the personal protective equipment program.
- (10) Work practices that will minimize employee risk from site hazards.
- (11) Safe use of engineering controls and equipment and any new relevant technology or procedure.
- (12) Content of the medical surveillance program and requirements, including the recognition of signs and symptoms of overexposure to hazardous substances.
- (13) The contents of an effective site safety and health plan.
- (14) Use of monitoring equipment with "hands-on" experience and the implementation of the employee and site monitoring program.
- (15) Implementation and use of the information program.
- (16) Drum and container handling procedures and the elements of a spill containment program.
- (17) Selection and use of material handling equipment.
- (18) Methods for assessment of risk and handling of radioactive wastes.
- (19) Methods for handling shock-sensitive wastes.
- (20) Laboratory waste pack handling procedures.
- (21) Container sampling procedures and safeguards.
- (22) Safe preparation procedures for shipping and transport of containers.
- (23) Decontamination program and procedures.
- (24) Emergency response plan and procedures including first aid.
- (25) Safe site illumination levels.
- (26) Site sanitation procedures and equipment for employee needs.
- (27) Review of the applicable appendices to Part P of chapter 296-62 WAC.
- (28) Overview and explanation of WISHA's chemical hazard communication standard WAC 296-800-170.
- (29) Sources of reference, additional information and efficient use of relevant manuals and hazard coding systems.
- (30) Principles of toxicology and biological monitoring.

(31) Rights and responsibilities of employees and employers under WISHA and CERCLA.

(32) Hands-on field exercises and demonstrations.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-30425, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-30425, filed 3/23/99, effective 6/23/99.]

WAC 296-62-30435 16-hour supplemental training for hazardous waste sites. As a minimum, employees who have received 24 hours of training for hazardous waste site operations must receive training in the following topics before they are allowed to work as general site workers or if they are required to wear respirators:

- (1) Relevant chemical exposures to hazardous substances beyond that previously covered.
- (2) Site hazards including fire and explosion, confined spaces, oxygen deficiency, electrical, powered equipment, and walking-working surfaces beyond that previously covered.
- (3) Names of personnel and alternates responsible for site safety and health at the site, where appropriate.
- (4) Use of monitoring equipment and the implementation of the employee and the site monitoring program beyond that previously covered.
- (5) Implementation and use of the informational program.
- (6) Drum and container handling procedures and the elements of a spill containment program.
- (7) Selection and use of material handling equipment.
- (8) Methods for assessment of risk and handling of radioactive wastes.
- (9) Methods for handling shock-sensitive wastes.
- (10) Laboratory waste pack handling procedures.
- (11) Container sampling procedures and safeguards.
- (12) Safe preparation procedures for shipping and transport of containers.
- (13) Decontamination program and procedures.
- (14) Safety site illumination levels.
- (15) Site sanitation procedures and equipment.
- (16) Review of the applicable appendices to Part P of chapter 296-62 WAC.
- (17) Overview and explanation of WISHA's Chemical hazard communication standard WAC 296-800-170.
- (18) Sources of reference and additional information.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-30435, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-30435, filed 3/23/99, effective 6/23/99.]

WAC 296-62-30605 Personal protective equipment selection. (1) Personal protective equipment (PPE) must be selected and used which will protect employees from the hazards and potential hazards they are likely to encounter as identified during the site characterization and analysis.

(2) Personal protective equipment selection must be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the site.

(3) Positive pressure self-contained breathing apparatus, or positive pressure air-line respirators equipped with an escape air supply must be used when chemical exposure levels present will create a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.

(4) Totally encapsulating chemical protective suits (protection equivalent to Level A protection as recommended in Appendix B) must be used in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.

(5) The level of protection provided by PPE selection must be increased when additional information or site conditions indicate that increased protection is necessary to reduce employee exposures below permissible exposure limits and published exposure levels for hazardous substances and health hazards. (See WAC 296-62-3170 - Appendix B for guidance on selecting PPE ensembles.)

Note: The level of employee protection provided may be decreased when additional information or site conditions show that decreased protection will not result in increased hazardous exposures to employees.

(6) Personal protective equipment must be selected and used to meet the requirements of WAC 296-800-160, and additional requirements specified in this part.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-30605, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-30605, filed 3/23/99, effective 6/23/99.]

WAC 296-62-3090 General requirements for handling drums and containers. (1) Hazardous substances and contaminated soils, liquids, and other residues must be handled, transported, labeled, and disposed of in accordance with this section.

(2) Drums and containers used during the clean-up must meet the appropriate DOT, OSHA, WISHA, and EPA regulations for the wastes that they contain.

(3) When practical, drums and containers must be inspected and their integrity must be assured prior to being moved. Drums or containers that cannot be inspected before being moved because of storage conditions (i.e., buried beneath the earth, stacked behind other drums, stacked several tiers high in a pile, etc.) must be moved to an accessible location and inspected prior to further handling.

(4) Unlabeled drums and containers must be considered to contain hazardous substances and handled accordingly until the contents are positively identified and labeled.

(5) Site operations must be organized to minimize the amount of drum or container movement.

(6) Prior to movement of drums or containers, all employees exposed to the transfer operation must be warned of the potential hazards associated with the contents of the drums or containers.

(7) United States Department of Transportation specified salvage drums or containers and suitable quantities of proper absorbent must be kept available and used in areas where spills, leaks, or ruptures may occur.

(8) Where major spills may occur, a spill containment program, which is part of the employer's safety and health program required in WAC 296-62-3010, must be implemented to contain and isolate the entire volume of the hazardous substance being transferred.

(9) Drums and containers that cannot be moved without rupture, leakage, or spillage must be emptied into a sound container using a device classified for the material being transferred.

(10) A ground-penetrating system or other type of detection system or device must be used to estimate the location and depth of buried drums or containers.

(11) Soil or covering material must be removed with caution to prevent drum or container rupture.

(12) Fire extinguishing equipment meeting the requirements of WAC 296-800-300 must be on hand and ready for use to control incipient fires.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-3090, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-3090, filed 3/23/99, effective 6/23/99. Statutory Authority: Chapter 49.17 RCW. 93-19-142 (Order 93-04), § 296-62-3090, filed 9/22/93, effective 11/1/93; 91-11-070 (Order 91-01), § 296-62-3090, filed 5/20/91, effective 6/20/91; 89-21-018, § 296-62-3090, filed 10/10/89, effective 11/24/89; 88-21-002 (Order 88-23), § 296-62-3090, filed 10/6/88, effective 11/7/88.]

WAC 296-62-31335 Showers and change rooms.

When hazardous waste clean-up or removal operations commence on a site and the duration of the work will require six months or greater time to complete, the employer must provide showers and change rooms for all employees exposed to hazardous substances and health hazards involved in hazardous waste clean-up or removal operations.

(1) Showers must be provided and must meet the requirements of WAC 296-24-12010.

(2) Change rooms must be provided and must meet the requirements of WAC 296-24-12011. Change rooms must consist of two separate change areas separated by the shower area required in (1) of this subsection. One change area, with an exit leading off the worksite, must provide employees with a clean area where they can remove, store, and put on street clothing. The second area, with an exit to the worksite, must provide employees with an area where they can put on, remove and store work clothing and personal protective equipment.

(3) Showers and change rooms must be located in areas where exposures are below the permissible exposure limits and published exposure levels. If this cannot be accomplished, then a ventilation system must be provided that will supply air that is below the permissible exposure limits and published exposure levels.

(4) Employers must assure that employees shower at the end of their work shift and when leaving the hazardous waste site.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-62-31335, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-31335, filed 3/23/99, effective 6/23/99.]

WAC 296-62-31410 Hazard communication program requirements under RCRA. The employer must

implement a hazard communication program meeting the requirements of WAC 296-800-170, as part of the employer's safety and health program.

Note: The exemption for hazardous waste provided in WAC 296-800-170 is applicable to this section.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-31410, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-31410, filed 3/23/99, effective 6/23/99.]

WAC 296-62-3195 Appendix E—Training curriculum guidelines. The following nonmandatory general criteria may be used for assistance in developing site-specific training curriculum used to meet the training requirements of WAC 296-62-3040 through 296-62-30465, 296-62-31435 through 296-62-31445, 296-62-31465, 296-62-4102 through 296-62-41021, and 296-62-41023.

These are generic guidelines and they are not presented as a complete training curriculum for any specific employer. Site-specific training programs must be developed on the basis of a needs assessment of the hazardous waste site, RCRA/TSDF, or emergency response operation in accordance with this chapter (chapter 296-62 WAC, Part P and Part R).

The guidance set forth here presents a highly effective program that in the areas covered would meet or exceed the regulatory requirements. In addition, other approaches could meet the regulatory requirements.

Suggested general criteria:

Definitions:

"Competent" means possessing the skills, knowledge, experience, and judgment to perform assigned tasks or activities satisfactorily as determined by the employer.

"Demonstration" means the showing by actual use of equipment or procedures.

"Hands-on training" means training in a simulated work environment that permits each student to have experience performing tasks, making decisions, or using equipment appropriate to the job assignment for which the training is being conducted.

"Initial training" means training required prior to beginning work.

"Lecture" means an interactive discourse with a class lead by an instructor.

"Proficient" means meeting a stated level of achievement.

"Site-specific" means individual training directed to the operations of a specific job site.

"Training hours" means the number of hours devoted to lecture, learning activities, small group work sessions, demonstration, evaluations, or hands-on experience.

Suggested core criteria:

(1) **Training facility.** The training facility should have available sufficient resources, equipment, and site locations to perform concise and hands-on training when appropriate. Training facilities should have sufficient organization, support staff, and services to conduct training in each of the courses offered.

(2) **Training director.** Each training program should be under the direction of a training director who is responsible

for the program. The training director should have a minimum of two years of employee education experience.

(3) **Instructors.** Instructors should be deemed competent on the basis of previous documented experience in their area of instruction, successful completion of a "train-the-trainer" program specific to the topics they will teach, and an evaluation of instructional competence by the training director.

(a) Instructors should be required to maintain professional competency by participating in continuing education or professional development programs or by successfully completing an annual refresher course and having an annual review by the training director.

(b) The annual review by the training director should include observation of an instructor's delivery, a review of those observations with the trainer, and an analysis of any instructor or class evaluations completed by the students during the previous year.

(4) **Course materials.** The training director should approve all course materials to be used by the training provider. Course materials should be reviewed and updated at least annually. Materials and equipment should be in good working order and maintained properly.

(a) All written and audio-visual materials in training curricula should be peer reviewed by technically competent outside reviewers or by a standing advisory committee.

(b) Reviewers should possess expertise in the following disciplines were applicable: Occupational health, industrial hygiene and safety, chemical/environmental engineering, employee education, or emergency response. One or more of the peer reviewers should be an employee experienced in the work activities to which the training is directed.

(5) **Students.** The program for accepting students should include:

(a) Assurance that the student is or will be involved in work where chemical exposures are likely and that the student possesses the skills necessary to perform the work.

(b) A policy on the necessary medical clearance.

(6) **Ratios.** Student-instructor ratios should not exceed thirty students per instructor. Hands-on activity requiring the use of personal protective equipment should have the following student-instructor ratios: For Level C or Level D personal protective equipment the ratio should be ten students per instructor. For Level A or Level B personal protective equipment the ratio should be five students per instructor.

(7) **Proficiency assessment.** Proficiency should be evaluated and documented by the use of a written assessment and a skill demonstration selected and developed by the training director and training staff. The assessment and demonstration should evaluate the knowledge and individual skills developed in the course of training. The level of minimum achievement necessary for proficiency must be specified in writing by the training director.

(a) If a written test is used, there should be a minimum of fifty questions. If a written test is used in combination with a skills demonstration, a minimum of twenty-five questions should be used. If a skills demonstration is used, the tasks chosen and the means to rate successful completion should be fully documented by the training director.

(b) The content of the written test or of the skill demonstration must be relevant to the objectives of the course.

The written test and skill demonstration should be updated as necessary to reflect changes in the curriculum and any update should be approved by the training director.

(c) The proficiency assessment methods, regardless of the approach or combination of approaches used, should be justified, documented and approved by the training director.

(d) The proficiency of those taking the additional courses for supervisors should be evaluated and documented by using proficiency assessment methods acceptable to the training director. These proficiency assessment methods must reflect the additional responsibilities borne by supervisory personnel in hazardous waste operations or emergency response.

(8) Course certificate. Written documentation should be provided to each student who satisfactorily completes the training course. The documentation should include:

- (a) Student's name.
- (b) Course title.
- (c) Course date.
- (d) Statement that the student has successfully completed the course.
- (e) Name and address of the training provider.
- (f) An individual identification number for the certificate.
- (g) List of the levels of personal protective equipment used by the student to complete the course.
- (i) This documentation may include a certificate and an appropriate wallet-sized laminated card with a photograph of the student and the above information.

(ii) When such course certificate cards are used, the individual identification number for the training certificate should be shown on the card.

(9) Recordkeeping. Training providers should maintain records listing the dates courses were presented, the names of the individual course attendees, the names of those students successfully completing each course, and the number of training certificates issued to each successful student. These records should be maintained for a minimum of five years after the date an individual participated in a training program offered by the training provider. These records should be available and provided upon the student's request or as mandated by law.

(10) Program quality control. The training director should conduct or direct an annual written audit of the training program. Program modifications to address deficiencies, if any, should be documented, approved, and implemented by the training provider. The audit and the program modification documents should be maintained at the training facility.

Suggested Program Quality Control Criteria:

Factors listed here are suggested criteria for determining the quality and appropriateness of employee health and safety training for hazardous waste operations and emergency response.

(1) Training plan. Adequacy and appropriateness of the training program's curriculum development, instructor training, distribution of course materials, and direct student training should be considered, including:

(a) The duration of training, course content, and course schedules/agendas;

(b) The different training requirements of the various target populations, as specified in the appropriate generic training curriculum;

(c) The process for the development of curriculum, which includes appropriate technical input, outside review, evaluation, program pretesting.

(d) The adequate and appropriate inclusion of hands-on, demonstration, and instruction methods;

(e) Adequate monitoring of student safety, progress, and performance during the training.

(2) Program management, training director, staff, and consultants. Adequacy and appropriateness of staff performance and delivering an effective training program should be considered, including:

(a) Demonstration of the training director's leadership in assuring quality of health and safety training;

(b) Demonstration of the competency of the staff to meet the demands of delivering high quality hazardous waste employee health and safety training;

(c) Organization charts establishing clear lines of authority;

(d) Clearly defined staff duties including the relationship of the training staff to the overall program;

(e) Evidence that the training organizational structure suits the needs of the training program;

(f) Appropriateness and adequacy of the training methods used by the instructors;

(g) Sufficiency of the time committed by the training director and staff to the training program;

(h) Adequacy of the ratio of training staff to students;

(i) Availability and commitment of the training program of adequate human and equipment resources in the areas of:

(i) Health effects;

(ii) Safety;

(iii) Personal protective equipment (PPE);

(iv) Operational procedures;

(v) Employee protection practices/procedures;

(j) Appropriateness of management controls;

(k) Adequacy of the organization and appropriate resources assigned to assure appropriate training;

(l) In the case of multiple-site training programs, adequacy of management of the satellite centers.

(3) Training facilities and resources. Adequacy and appropriateness of the facilities and resources for supporting the training program should be considered, including:

(a) Space and equipment to conduct the training;

(b) Facilities for representative hands-on training;

(c) In the case of multiple-site programs, equipment and facilities at the satellite centers;

(d) Adequacy and appropriateness of the quality control and evaluations program to account for instructor performance;

(e) Adequacy and appropriateness of the quality control and evaluation program to ensure appropriate course evaluation, feedback, updating, and corrective action;

(f) Adequacy and appropriateness of disciplines and expertise being used within the quality control and evaluation program;

(g) Adequacy and appropriateness of the role of student evaluations to provide feedback for training program improvement.

(4) Quality control and evaluation. Adequacy and appropriateness of quality control and evaluation plans for training programs should be considered, including:

(a) A balanced advisory committee and/or competent outside reviewers to give overall policy guidance;

(b) Clear and adequate definition of the composition and active programmatic role of the advisory committee or outside reviewers;

(c) Adequacy of the minutes or reports of the advisory committee or outside reviewers' meetings or written communication;

(d) Adequacy and appropriateness of the quality control and evaluations program to account for instructor performance;

(e) Adequacy and appropriateness of the quality control and evaluation program to ensure appropriate course evaluation, feedback, updating, and corrective action;

(f) Adequacy and appropriateness of disciplines and expertise being used within the quality control and evaluation program;

(g) Adequacy and appropriateness of the role of student evaluations to provide feedback for training program improvement.

(5) Students. Adequacy and appropriateness of the program for accepting students should be considered, including:

(a) Assurance that the student already possess the necessary skills for their job, including necessary documentation;

(b) Appropriateness of methods the program uses to ensure that recruits are capable of satisfactorily completing training;

(c) Review and compliance with any medical clearance policy.

(6) Institutional environment and administrative support. The adequacy and appropriateness of the institutional environment and administrative support system for the training program should be considered, including:

(a) Adequacy of the institutional commitment to the employee training program;

(b) Adequacy and appropriateness of the administrative structure and administrative support.

(7) Summary of evaluation questions. Key questions for evaluating the quality and appropriateness of an overall training program should include the following:

(a) Are the program objectives clearly stated?

(b) Is the program accomplishing its objectives?

(c) Are appropriate facilities and staff available?

(d) Is there an appropriate mix of classroom, demonstration, and hands-on training?

(e) Is the program providing quality employee health and safety training that fully meets the intent of regulatory requirements?

(f) What are the program's main strengths?

(g) What are the program's main weaknesses?

(h) What is recommended to improve the program?

(i) Are instructors instructing according to their training outlines?

(j) Is the evaluation tool current and appropriate for the program content?

(k) Is the course material current and relevant to the target group?

Suggested Training Curriculum Guidelines:

The following training curriculum guidelines are for those operations specifically identified in this Part P, as requiring training. Issues such as qualifications of instructors, training certification, and similar criteria appropriate to all categories of operations addressed in this Part P, have been covered in the preceding section and are not readdressed in each of the generic guidelines. Basic core requirements for training programs that are addressed include: (1) *General hazardous waste operations*; (2) *RCRA operations—Treatment, storage, and disposal facilities*.

(1) General hazardous waste operations and site-specific training.

(a) Off-site training. Training course content for hazardous waste operations, required by WAC 296-62-3040 through 296-62-30465, should include the following topics or procedures:

(i) Regulatory knowledge.

(A) A review of this Part P and the core elements of an occupational safety and health program.

(B) The content of a medical surveillance program as outlined in WAC 296-62-3050 through 296-62-30535.

(C) The content of an effective site safety and health plan consistent with the requirements of WAC 296-62-30135(2).

(D) Emergency response plan and procedures as outlined in WAC 296-24-567 and 296-62-3110 through 296-62-31110.

(E) Adequate illumination.

(F) Sanitation recommendation and equipment.

(G) Review and explanation of WISHA's hazard-communication standard WAC 296-800-170, and chapter 296-24 WAC, Part A-4, safety procedures for the control of hazardous energy (lockout/tagout).

(H) Review of other applicable standards including but not limited to those in the construction standards, chapter 296-155 WAC.

(I) Rights and responsibilities of employers and employees under applicable WISHA/OSHA and department of ecology (DOE)/Environmental Protection Association (EPA) regulations and laws.

(ii) Technical knowledge.

(A) Type of potential exposures to chemical, biological, and radiological hazards; types of human responses to these hazards and recognition of those responses; principles of toxicology and information about acute and chronic hazards; health and safety considerations of new technology.

(B) Fundamentals of chemical hazards including but not limited to vapor pressure, boiling points, flash points, pH, other physical and chemical properties.

(C) Fire and explosion hazards of chemicals.

(D) General safety hazards such as but not limited to electrical hazards, powered equipment hazards, motor vehicle hazards, walking-working surface hazards, excavation hazards, and hazards associated with working in hot and cold temperature extremes.

(E) Review and knowledge of confined space entry procedures in chapter 296-62 WAC, Part M.

(F) Work practices to minimize employee risk from site hazards.

(G) Safe use of engineering controls, equipment, and any new relevant safety technology or safety procedures.

(H) Review and demonstration of competency with air sampling and monitoring equipment that may be used in a site monitoring program.

(I) Container sampling procedures and safeguarding; general drum and container handling procedures including special requirement for laboratory waste packs, shock-sensitive wastes, and radioactive wastes.

(J) The elements of a spill control program.

(K) Proper use and limitations of material handling equipment.

(L) Procedures for safe and healthful preparation of containers for shipping and transport.

(M) Methods of communication including those used while wearing respiratory protection.

(iii) Technical skills.

(A) Selection, use maintenance, and limitations of personal protective equipment including the components and procedures for carrying out a respirator program to comply with chapter 296-62 WAC Part E, Respiratory Protection.

(B) Instruction in decontamination programs including personnel, equipment, and hardware; hands-on training including Levels A, B, and C ensembles and appropriate decontamination lines; field activities including the donning and doffing of protective equipment to a level commensurate with the employee's anticipated job function and responsibility and to the degree required by potential hazards.

(C) Sources for additional hazard information; exercises using relevant manuals and hazard coding systems.

(iv) Additional suggested items.

(A) A laminated, dated card or certificate with photo, denoting limitations and level of protection for which the employee is trained should be issued to those students successfully completing a course.

(B) Attendance should be required at all training modules, with successful completion of exercises and a final written or oral examination with at least fifty questions.

(C) A minimum of one-third of the program should be devoted to hands-on exercises.

(D) A curriculum should be established for the eight-hour refresher training required by WAC 296-62-30460, with delivery of such courses directed toward those areas of previous training that need improvement or reemphasis.

(E) A curriculum should be established for the required eight-hour training for supervisors. Demonstrated competency in the skills and knowledge provided in forty-hour and eighty-hour courses should be prerequisites for supervisor training.

(b) Refresher training. The eight-hour annual refresher training required in WAC 296-62-30460 should be conducted by qualified training providers. Refresher training should include at a minimum the following topics and procedures:

(i) Review of and retraining on relevant topics covered in the forty-hour and eighty-hour programs, as appropriate, using reports by the students on their work experiences.

(ii) Update on developments with respect to material covered in the forty-hour and eighty-hour courses.

(iii) Review of changes to pertinent provisions of DOE/EPA or WISHA/OSHA standards or laws.

(iv) Introduction of additional subject areas as appropriate.

(v) Hands-on review of new or altered PPE or decontamination equipment or procedures. Review of new developments in personal protective equipment.

(vi) Review of newly developed air and contaminant monitoring equipment.

(c) On-site training. The employer should provide employees engaged in hazardous waste site activities with information and training prior to initial assignment into their work area, as follows:

(i) The requirements of the hazard communication program including the location and availability of the written program, required lists of hazardous chemicals, and material safety data sheets.

(ii) Activities and locations in their work area where hazardous substance may be present.

(iii) Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearances, or other evidence (sight, sound or smell)) of hazardous chemicals being released, and applicable alarms from monitoring devices that record chemical releases.

(iv) The physical and health hazards of substances known or potentially present in the work area.

(v) The measures employees can take to help protect themselves from worksite hazards, including specific procedures the employer has implemented.

(vi) An explanation of the labeling system and material safety data sheets and how employees can obtain and use appropriate hazard information.

(vii) The elements of the confined space program including special PPE, permits, monitoring requirements, communication procedures, emergency response, and applicable lockout procedures.

(d) The employer should provide hazardous waste employees with information and training and should provide a review and access to the site safety and health plan as follows:

(i) Names of personnel and alternate responsible for site safety and health.

(ii) Safety and health hazards present on the site.

(iii) Selection, use, maintenance, and limitations of personal protective equipment specific to the site.

(iv) Work practices by which the employee can minimize risks from hazards.

(v) Safe use of engineering controls and equipment available on site.

(vi) Safe decontamination procedures established to minimize employee contact with hazardous substances, including:

(A) Employee decontamination;

(B) Clothing decontamination; and

(C) Equipment decontamination.

(vii) Elements of the site emergency response plan, including:

- (A) Preemergency planning.
- (B) Personnel roles and lines of authority and communication.
- (C) Emergency recognition and prevention.
- (D) Safe distances and places of refuge.
- (E) Site security and control.
- (F) Evacuation routes and procedures.
- (G) Decontamination procedures not covered by the site safety and health plan.
- (H) Emergency medical treatment and first aid.
- (I) Emergency equipment and procedures for handling emergency incidents.

(e) The employer should provide hazardous waste employees with information and training on personal protective equipment used at the site, such as the following:

- (i) PPE to be used based upon known or anticipated site hazards.
- (ii) PPE limitations of materials and construction; limitations during temperature extremes, heat stress, and other appropriate medical considerations; use and limitations of respirator equipment as well as documentation procedures as outlined in chapter 296-62 WAC, Part E, Respiratory Protection.
- (iii) PPE inspection procedures prior to, during, and after use.

- (iv) PPE donning and doffing procedures.
- (v) PPE decontamination and disposal procedures.
- (vi) PPE maintenance and storage.
- (vii) Task duration as related to PPE limitations.

(f) The employer should instruct the employee about the site medical surveillance program relative to the particular site, including:

- (i) Specific medical surveillance programs that have been adapted for the site.
- (ii) Specific signs and symptoms related to exposure to hazardous materials on the site.
- (iii) The frequency and extent of periodic medical examinations that will be used on the site.
- (iv) Maintenance and availability of records.
- (v) Personnel to be contacted and procedures to be followed when signs and symptoms of exposures are recognized.

(g) The employees will review and discuss the site safety and health plan as part of the training program. The location of the site safety and health plan and all written programs should be discussed with employees including a discussion of the mechanisms for access, review, and references described.

(2) RCRA operations training for treatment, storage and disposal facilities.

(a) As a minimum, the training course required in WAC 296-62-31435 through 296-62-31440 and 296-62-31465 should include the following topics:

- (i) Review of the applicable parts of this Part P and the elements of the employer's occupational safety and health plan.
- (ii) Review of relevant hazards such as, but not limited to, chemical, biological, and radiological exposures; fire and explosion hazards; thermal extremes; and physical hazards.

(iii) General safety hazards including those associated with electrical hazards, powered equipment hazards, lockout/tagout procedures, motor vehicle hazards and walking-working surface hazards.

(iv) Confined space hazards and procedures.

(v) Work practices to minimize employee risk from workplace hazards.

(vi) Emergency response plan and procedures including first aid meeting the requirements of WAC 296-62-31450.

(vii) A review of procedures to minimize exposure to hazardous waste and various type of waste streams, including the materials handling program and spill containment program.

(viii) A review of chemical hazard communication programs meeting the requirements of WAC 296-800-170.

(ix) A review of medical surveillance programs meeting the requirements of WAC 296-62-3050 and 296-62-31415 including the recognition of signs and symptoms of overexposure to hazardous substance including known synergistic interactions.

(x) A review of decontamination programs and procedures meeting the requirements of WAC 296-62-3100 and 296-62-31420.

(xi) A review of an employer's requirements to implement a training program and its elements.

(xii) A review of the criteria and programs for proper selection and use of personal protective equipment, including respirators.

(xiii) A review of the applicable appendices to this Part P (Appendices A through E).

(xiv) Principles of toxicology and biological monitoring as they pertain to occupational health.

(xv) Rights and responsibilities of employees and employers under applicable WISHA/OSHA and DOE/EPA regulations and laws.

(xvi) Hands-on exercises and demonstrations of competency with equipment to illustrate the basic equipment principles that may be used during the performance of work duties, including the donning and doffing of PPE.

(xvii) Sources of reference, efficient use of relevant manuals, and knowledge of hazard coding systems to include information contained in hazardous waste manifests.

(xviii) At least eight hours of hands-on training.

(xix) Training in the job skills required for an employee's job function and responsibility before they are permitted to participate in or supervise field activities.

(b) The individual employer should provide hazardous waste employees with information and training prior to an employee's initial assignment into a work area. The training and information should cover the following topics:

(i) The emergency response plan and procedures including first aid.

(ii) A review of the employer's hazardous waste handling procedures including the materials handling program and elements of the spill containment program, location of spill response kits or equipment, and the names of those trained to respond to releases.

(iii) The hazardous communication program meeting the requirements of WAC 296-800-170.

(iv) A review of the employer's medical surveillance program including the recognition of signs and symptoms of exposure to relevant hazardous substance including known synergistic interactions.

(v) A review of the employer's decontamination program and procedures.

(vi) A review of the employer's training program and the parties responsible for that program.

(vii) A review of the employer's personal protective equipment program including the proper selection and use of PPE based upon specific site hazards.

(viii) All relevant site-specific procedures addressing potential safety and health hazards. This may include, as appropriate, biological and radiological exposures, fire and explosion hazards, thermal hazards, and physical hazards such as electrical hazards, powered equipment hazards, lockout/tagout hazards, motor vehicle hazards, and walking-working surface hazards.

(ix) Safe use of engineering controls and equipment on-site.

(x) Names of personnel and alternates responsible for safety and health.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-3195, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-3195, filed 3/23/99, effective 6/23/99. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-62-3195, filed 1/18/95, effective 3/10/95.]

WAC 296-62-40003 Definitions applicable to all sections of this chapter. Unless the context indicates otherwise, words used in this chapter shall have the meaning given in this section.

(1) "Action level" means a concentration designated in WAC 296-62-075 for a specific substance, calculated as an 8-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

(2) "Carcinogen" (see "select carcinogen").

(3) "Chemical hygiene officer" means an employee who is designated by the employer, and who is qualified by training or experience, to provide technical guidance in the development and implementation of the provisions of the chemical hygiene plan. This definition is not intended to place limitations on the position description or job classification that the designated individual shall hold within the employer's organizational structure.

(4) "Chemical hygiene plan" means a written program developed and implemented by the employer which sets forth procedures, equipment, personal protective equipment, and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in that particular workplace and meets the requirements of WAC 296-62-40009.

(5) "Combustible liquid" means any liquid having a flashpoint at or above 100°F (37.8°C), but 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 99 percent or more of the total volume of the mixture.

(6) "Compressed gas" means:

(a) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F (21.1°C); or

(b) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C); or

(c) A liquid having a vapor pressure exceeding 40 psi at 100°F (37.8°C) as determined by ASTM D-323-72.

(7) "Designated area" means an area which may be used for work with "select carcinogens," reproductive toxins or substances which have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory or a device such as a laboratory hood.

(8) "Director" means the director of the department of labor and industries or his/her designee.

(9) "Emergency" means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment which results in an uncontrolled release of a hazardous chemical into the workplace.

(10) "Employee" means an individual employed in a laboratory workplace who may be exposed to hazardous chemicals in the course of his or her assignments.

(11) "Explosive" means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

(12) "Flammable" means a chemical that falls into one of the following categories:

(a) "Aerosol, flammable" means an aerosol that, when tested by the method described in 16 C.F.R. 1500.45, yields a flame protection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

(b) "Gas, flammable" means:

(i) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or

(ii) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.

(c) "Liquid, flammable" 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 99 percent or more of the total volume of the mixture.

(d) "Solid, flammable" means a solid, other than a blasting agent or explosive as defined in WAC 296-52-417, that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 C.F.R. 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

(13) "Flashpoint" means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

(a) Tagliabue Closed Tester (see American National Standard Method of Test for Flash Point by Tag Closed

Tester, Z11.24-1979 (ASTM D 56-79))-for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100 deg. F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

(b) Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79))-for liquids with a viscosity equal to or greater than 45 SUS at 100 deg. F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

(c) Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

Note: Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

(14) "Hazardous chemical" means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

Note: Appendices A and B of the Hazard Communication Standard (WAC 296-800-170) provide further guidance in defining the scope of health hazards and determining whether or not a chemical is to be considered hazardous for purposes of this standard.

(15) "Laboratory" means a facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a nonproduction basis.

(16) "Laboratory scale" means work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. "Laboratory scale" excludes those workplaces whose function is to produce commercial quantities of materials.

(17) "Laboratory-type hood" means a device located in a laboratory, enclosure on five sides with a moveable sash or fixed partial enclosed on the remaining side; constructed and maintained to draw air from the laboratory and to prevent or minimize the escape of air contaminants into the laboratory; and allows chemical manipulations to be conducted in the enclosure without insertion of any portion of the employee's body other than hands and arms.

Note: Walk-in hoods with adjustable sashes meet the above definition provided that the sashes are adjusted during use so that the airflow and the exhaust of air contaminants are not compromised and employees do not work inside the enclosure during the release of airborne hazardous chemicals.

(18) "Laboratory use of hazardous chemicals" means handling or use of such chemicals in which all of the following conditions are met:

(a) Chemical manipulations are carried out on a "laboratory scale";

(b) Multiple chemical procedures or chemicals are used;

(c) The procedures involved are not part of a production process, nor in any way simulate a production process; and

(d) "Protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

(19) "Medical consultation" means a consultation which takes place between an employee and a licensed physician for the purpose of determining what medical examinations or procedures, if any, are appropriate in cases where a significant exposure to a hazardous chemical may have taken place.

(20) "Organic peroxide" means an organic compound that contains the bivalent -O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(21) "Oxidizer" means a chemical other than a blasting agent or explosive as defined in WAC 296-52-417, that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

(22) "Physical hazard" means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

(23) "Protective laboratory practices and equipment" means those laboratory procedures, practices, and equipment accepted by laboratory health and safety experts as effective, or that the employer can show to be effective, in minimizing the potential for employee exposure to hazardous chemicals.

(24) "Reproductive toxins" means chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

(25) "Select carcinogen" means any substance which meets one of the following criteria:

(a) It is regulated by WISHA as a carcinogen; or

(b) It is listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or

(c) It is listed under Group I ("carcinogenic to humans") by the International Agency for Research on Cancer Monographs (IARC) (latest editions); or

(d) It is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogens" by NTP, and causes statistically significant tumor incidence in experimental animals in accordance with any of the following criteria:

(i) After inhalation exposure of 6-7 hours per day, 5 days per week, for a significant portion of a lifetime to dosages of less than 10 mg/m³; or

(ii) After repeated skin application of less than 300 (mg/kg of body weight) per week; or

(iii) After oral dosages of less than 50 mg/kg of body weight per day.

(26) "Unstable (reactive)" means a chemical which is the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shock, pressure, or temperature.

(27) "Water-reactive" means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-40003, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 90-17-051 (Order 90-10), § 296-62-40003, filed 8/13/90, effective 9/24/90.]

WAC 296-62-40015 Hazard identification. (1) With respect to labels and material safety data sheets:

(a) Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.

(b) Employers shall maintain any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible to laboratory employees.

(2) The following provisions shall apply to chemical substances developed in the laboratory:

(a) If the composition of the chemical substance which is produced exclusively for the laboratory's use is known, the employer shall determine if it is a hazardous chemical as defined in the definition section, Part Q of this standard. If the chemical is determined to be hazardous, the employer shall provide appropriate training as required under WAC 296-62-40011.

(b) If the chemical produced is a byproduct whose composition is not known, the employer shall assume that the substance is hazardous and shall implement WAC 296-62-40009.

(c) If the chemical substance is produced for another user outside of the laboratory, the employer shall comply with the chemical hazard communication standard (WAC 296-800-170) including the requirements for preparation of material safety data sheets and labeling.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-40015, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-62-40015, filed 7/20/94, effective 9/20/94; 90-17-051 (Order 90-10), § 296-62-40015, filed 8/13/90, effective 9/24/90.]

WAC 296-62-40025 Appendix A—National Research Council recommendations concerning chemical hygiene in laboratories (nonmandatory). (1) Table of contents.

- (a) General principles.
 - (i) Minimize all chemical exposures.
 - (ii) Avoid underestimation of risk.
 - (iii) Provide adequate ventilation.
 - (iv) Institute a chemical hygiene program.
 - (v) Observe the PELs and TLVs.
- (b) Responsibilities.
 - (i) Chief executive officer.
 - (ii) Supervisor of administrative unit.
 - (iii) Chemical hygiene officer.
 - (iv) Laboratory supervisor.
 - (v) Project director.
 - (vi) Laboratory worker.
- (c) The laboratory facility.
 - (i) Design.
 - (ii) Maintenance.
 - (iii) Usage.

(iv) Ventilation.

(d) Components of the chemical hygiene plan.

(i) Basic rules and procedures.

(ii) Chemical procurement, distribution, and storage.

(iii) Environmental monitoring.

(iv) Housekeeping, maintenance, and inspections.

(v) Medical program.

(vi) Personal protective apparel and equipment.

(vii) Records.

(viii) Signs and labels.

(ix) Spills and accidents.

(x) Training and information.

(xi) Waste disposal.

(e) General procedures for working with chemicals.

(i) General rules for all laboratory work with chemicals.

(ii) Allergens and embryotoxins.

(iii) Chemicals of moderate chronic or high acute toxicity.

(iv) Chemicals of high chronic toxicity.

(v) Animal work with chemicals of high chronic toxicity.

(f) Safety recommendations.

(g) Material safety data sheets.

(2) Foreword.

(a) As guidance for each employer's development of an appropriate laboratory chemical hygiene plan, the following nonmandatory recommendations are provided. They were extracted from "Prudent Practices for Handling Hazardous Chemicals in Laboratories" (referred to below as "Prudent Practices"), which was published in 1981 by the National Research Council and is available from the National Academy Press, 2101 Constitution Ave., N.W., Washington DC 20418.

(b) "Prudent practices" is cited because of its wide distribution and acceptance and because of its preparation by members of the laboratory community through the sponsorship of the National Research Council. However, none of the recommendations given here will modify any requirements of the laboratory standard. This appendix merely presents pertinent recommendations from "prudent practices," organized into a form convenient for quick reference during operation of a laboratory facility and during development and application of a chemical hygiene plan. Users of this appendix should consult "prudent practices" for a more extended presentation and justification for each recommendation.

(c) "Prudent practices" deals with both safety and chemical hazards while the laboratory standard is concerned primarily with chemical hazards. Therefore, only those recommendations directed primarily toward control of toxic exposures are cited in this appendix, with the term "chemical hygiene" being substituted for the word "safety." However, since conditions producing or threatening physical injury often pose toxic risks as well, page references concerning major categories of safety hazards in the laboratory are given in section F.

(d) The recommendations from "prudent practices" have been paraphrased, combined, or otherwise reorganized, and headings have been added. However, their sense has not been changed.

(e) Corresponding sections of the standard and this appendix.

(f) The following table is given for the convenience of those who are developing a chemical hygiene plan which will satisfy the requirements of WAC 296-62-40009. It indicates those sections of this appendix which are most pertinent to each of the sections of WAC 296-62-40009 and related sections.

Subsection and Topic in Laboratory Standard	Relevant Appendix Section
(3)(a) Standard operating procedure for handling toxic chemicals.	(c)(d)(e)
(3)(b) Criteria to be used for implementation of measures to reduce exposures.	(d)
(3)(c) Fume hood performance.	(c)(iv)(B)
(3)(d) Employee information and training (including emergency procedures).	(d)(x), (d)(ix)
(3)(e) Requirements for prior approval of laboratory activities.	(e)(ii)(j)(B), (e)(v)(B)
(3)(f) Medical consultation and medical examinations.	(d)(v), (e)(v)(G)
(3)(g) Chemical hygiene responsibilities.	(b)
(3)(h) Special precautions for work with particularly hazardous substances.	(e)(ii)(iii)(v)

(3) In this appendix, those recommendations directed primarily at administrators and supervisors are given in sections (a) through (d). Those recommendations of primary concern to employees who are actually handling laboratory chemicals are given in section E. (Reference to page numbers in "prudent practices" are given in parentheses.)

(a) General principles for work with laboratory chemicals in addition to the more detailed recommendations listed below in sections (b) through (e), "prudent practices" expresses certain general principles, including the following:

(i) It is prudent to minimize all chemical exposures. Because few laboratory chemicals are without hazards, general precautions for handling all laboratory chemicals should be adopted, rather than specific guidelines for particular chemicals (2, 10). Skin contact with chemicals should be avoided as a cardinal rule (198).

(ii) Avoid underestimation of risk. Even for substances of no known significant hazard, exposure should be minimized; for work with substances which present special hazards, special precautions should be taken (10, 37, 38). One should assume that any mixture will be more toxic than its most toxic component (30, 103) and that all substances of unknown toxicity are toxic (3, 34).

(iii) Provide adequate ventilation. The best way to prevent exposure to airborne substances is to prevent their escape into the working atmosphere by use of hoods and other ventilation devices (32, 198).

(iv) Institute a chemical hygiene program. A mandatory chemical hygiene program designed to minimize exposures is needed; it should be a regular, continuing effort, not merely a standby or short-term activity (6, 11). Its recommendations should be followed in academic teaching laboratories as well as by full-time laboratory workers (13).

(v) Observe the PELs, TLVs. The permissible exposure limits of WISHA and the threshold limit values of the American Conference of Governmental Industrial Hygienists should not be exceeded (13).

(b) Chemical hygiene responsibilities. Responsibility for chemical hygiene rests at all levels (6, 11, 21) including the:

(i) Chief executive officer, who has ultimate responsibility for chemical hygiene within the institution and must, with other administrators, provide continuing support for institutional chemical hygiene (7, 11).

(ii) Supervisor of the department or other administrative unit, who is responsible for chemical hygiene in that unit (7).

(iii) Chemical hygiene officer(s), whose appointment is essential (7) and who must:

(A) Work with administrators and other employees to develop and implement appropriate chemical hygiene policies and practices (7);

(B) Monitor procurement, use, and disposal of chemicals used in the lab (8);

(C) See that appropriate audits are maintained (8);

(D) Help project directors develop precautions and adequate facilities (10);

(E) Know the current legal requirements concerning regulated substances (50); and

(F) Seek ways to improve the chemical hygiene program (8, 11).

(iv) Laboratory supervisor, who has overall responsibility for chemical hygiene in the laboratory (21) including responsibility to:

(A) Ensure that workers know and follow the chemical hygiene rules, that protective equipment is available and in working order, and that appropriate training has been provided (21, 22);

(B) Provide regular, formal chemical hygiene and house-keeping inspections including routine inspections of emergency equipment (21, 171);

(C) Know the current legal requirements concerning regulated substances (50, 231);

(D) Determine the required levels of protective apparel and equipment (156, 160, 162); and

(E) Ensure that facilities and training for use of any material being ordered are adequate (215).

(v) Project director or director of other specific operation, who has primary responsibility for chemical hygiene procedures for that operation (7).

(vi) Laboratory worker, who is responsible for:

(A) Planning and conducting each operation in accordance with the institutional chemical hygiene procedures (7, 21, 22, 230); and

(B) Developing good personal chemical hygiene habits (22).

(c) The laboratory facility:

(i) Design. The laboratory facility should have:

(A) An appropriate general ventilation system (see C4 below) with air intakes and exhausts located so as to avoid intake of contaminated air (194);

(B) Adequate, well-ventilated stockrooms/storerooms (218, 219);

(C) Laboratory hoods and sinks (12, 162);

(D) Other safety equipment including eyewash fountains and drench showers (162, 169); and

(E) Arrangements for waste disposal (12, 240).

(ii) Maintenance. Chemical-hygiene-related equipment (hoods, incinerator, etc.) should undergo continuing appraisal and be modified if inadequate (11, 12).

(iii) Usage. The work conducted (10) and its scale (12) must be appropriate to the physical facilities available and, especially, to the quality of ventilation (13).

(iv) Ventilation.

(A) General laboratory ventilation. This system should: Provide a source of air for breathing and for input to local ventilation devices (199); it should not be relied on for protection from toxic substances released into the laboratory (198); ensure that laboratory air is continually replaced, preventing increase of air concentrations of toxic substances during the working day (194); direct air flow into the laboratory from nonlaboratory areas and out to the exterior of the building (194).

(B) Hoods. A laboratory hood with 2.5 linear feet of hood space per person should be provided for every 2 workers if they spend most of their time working with chemicals (199); each hood should have a continuous monitoring device to allow convenient confirmation of adequate hood performance before use (200, 209). If this is not possible, work with substances of unknown toxicity should be avoided (13) or other types of local ventilation devices should be provided (199). (See pp. 201-206 for a discussion of hood design, construction, and evaluation.)

(C) Other local ventilation devices. Ventilated storage cabinets, canopy hoods, snorkels, etc., should be provided as needed (199). Each canopy hood and snorkel should have a separate exhaust duct (207).

(D) Special ventilation areas. Exhaust air from glove boxes and isolation rooms should be passed through scrubbers or other treatment before release into the regular exhaust system (208). Cold rooms and warm rooms should have provisions for rapid escape and for escape in the event of electrical failure (209).

(E) Modifications. Any alteration of the ventilation system should be made only if thorough testing indicates that worker protection from airborne toxic substances will continue to be adequate (12, 193, 204).

(F) Performance. Rate: 4-12 room air changes/hour is normally adequate general ventilation if local exhaust systems such as hoods are used as the primary method of control (194).

(G) Quality. General air flow should not be turbulent and should be relatively uniform throughout the laboratory, with no high velocity or static areas (194, 195); airflow into and within the hood should not be excessively turbulent (200); hood face velocity should be adequate (typically 60-100 fpm) (200, 204).

(H) Evaluation. Quality and quantity of ventilation should be evaluated on installation (202), regularly monitored (at least every 3 months) (6, 12, 14, 195), and reevaluated whenever a change in local ventilation devices is made (12, 195, 207). See pp. 195-198 for methods of evaluation and for calculation of estimated airborne contaminant concentrations.

(d) Components of the chemical hygiene plan:

(i) Basic rules and procedures (recommendations for these are given in section (e), below).

(ii) Chemical procurement, distribution, and storage.

(A) Procurement. Before a substance is received, information on proper handling, storage, and disposal should be

known to those who will be involved (215, 216). No container should be accepted without an adequate identifying label (216). Preferably, all substances should be received in a central location (216).

(B) Stockrooms/storerooms. Toxic substances should be segregated in a well-identified area with local exhaust ventilation (221). Chemicals which are highly toxic (227) or other chemicals whose containers have been opened should be in unbreakable secondary containers (219). Stored chemicals should be examined periodically (at least annually) for replacement, deterioration, and container integrity (218-19).

(C) Stockrooms/storerooms should not be used as preparation or repackaging areas, should be open during normal working hours, and should be controlled by one person (219).

(D) Distribution. When chemicals are hand carried, the container should be placed in an outside container or bucket. Freight-only elevators should be used if possible (223).

(E) Laboratory storage. Amounts permitted should be as small as practical. Storage on bench tops and in hoods is inadvisable. Exposure to heat or direct sunlight should be avoided. Periodic inventories should be conducted, with unneeded items being discarded or returned to the storeroom/stockroom (225-6, 229).

(iii) Environmental monitoring. Regular instrumental monitoring of airborne concentrations is not usually justified or practical in laboratories but may be appropriate when testing or redesigning hoods or other ventilation devices (12) or when a highly toxic substance is stored or used regularly (e.g., 3 times/week) (13).

(iv) Housekeeping, maintenance, and inspections.

(A) Cleaning. Floors should be cleaned regularly (24).

(B) Inspections. Formal housekeeping and chemical hygiene inspections should be held at least quarterly (6, 21) for units which have frequent personnel changes and semiannually for others; informal inspections should be continual (21).

(C) Maintenance. Eye wash fountains should be inspected at intervals of not less than 3 months (6). Respirators for routine use should be inspected periodically by the laboratory supervisor (169). Safety showers should be tested routinely (169). Other safety equipment should be inspected regularly. (E.g., every 3-6 months) (6, 24, 171). Procedures to prevent restarting of out-of-service equipment should be established (25).

(D) Passageways. Stairways and hallways should not be used as storage areas (24). Access to exits, emergency equipment, and utility controls should never be blocked (24).

(v) Medical program.

(A) Compliance with regulations. Regular medical surveillance should be established to the extent required by regulations (12).

(B) Routine surveillance. Anyone whose work involves regular and frequent handling of toxicologically significant quantities of a chemical should consult a qualified physician to determine on an individual basis whether a regular schedule of medical surveillance is desirable (11, 50).

(C) First aid. Personnel trained in first aid should be available during working hours and an emergency room with medical personnel should be nearby (173). See pp. 176-178 for description of some emergency first-aid procedures.

(vi) Protective apparel and equipment. These should include for each laboratory:

(A) Protective apparel compatible with the required degree of protection for substances being handled (158-161);

(B) An easily accessible drench-type safety shower (162, 169);

(C) An eyewash fountain (162);

(D) A fire extinguisher (162-164);

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(E) Respiratory protection (164-9), fire alarm and telephone for emergency use (162) should be available nearby; and

(F) Other items designated by the laboratory supervisor (156, 160).

(vii) Records.

(A) Accident records should be written and retained (174).

(B) Chemical hygiene plan records should document that the facilities and precautions were compatible with current knowledge and regulations (7).

(C) Inventory and usage records for high-risk substances should be kept as specified in sections E3e below.

(D) Medical records should be retained by the institution in accordance with the requirements of state and federal regulations (12).

(viii) Signs and labels. Prominent signs and labels of the following types should be posted:

(A) Emergency telephone numbers of emergency personnel/ facilities, supervisors, and laboratory workers (28);

(B) Identity labels, showing contents of containers (including waste receptacles) and associated hazards (27, 48);

(C) Location signs for safety showers, eyewash stations, other safety and first aid equipment, exits (27) and areas where food and beverage consumption and storage are permitted (24); and

(D) Warnings at areas or equipment where special or unusual hazards exist (27).

(ix) Spills and accidents.

(A) A written emergency plan should be established and communicated to all personnel; it should include procedures for ventilation failure (200), evacuation, medical care, reporting, and drills (172).

(B) There should be an alarm system to alert people in all parts of the facility including isolation areas such as cold rooms (172).

(C) A spill control policy should be developed and should include consideration of prevention, containment, cleanup, and reporting (175).

(D) All accidents or near accidents should be carefully analyzed with the results distributed to all who might benefit (8, 28).

(x) Information and training program.

(A) Aim: To assure that all individuals at risk are adequately informed about the work in the laboratory, its risks, and what to do if an accident occurs (5, 15).

(B) Emergency and personal protection training: Every laboratory worker should know the location and proper use of available protective apparel and equipment (154, 169).

(C) Some of the full-time personnel of the laboratory should be trained in the proper use of emergency equipment and procedures (6).

(D) Such training as well as first-aid instruction should be available to (154) and encouraged for (176) everyone who might need it.

(E) Receiving and stockroom/storeroom personnel should know about hazards, handling equipment, protective apparel, and relevant regulations (217).

(F) Frequency of training: The training and education program should be a regular, continuing activity—not simply an annual presentation (15).

(G) Literature/consultation: Literature and consulting advice concerning chemical hygiene should be readily available to laboratory personnel, who should be encouraged to use these information resources (14).

(xi) Waste disposal program.

(A) Aim: To assure that minimal harm to people, other organisms, and the environment will result from the disposal of waste laboratory chemicals (5).

(B) Content (14, 232, 233, 240): The waste disposal program should specify how waste is to be collected, segregated, stored, and transported and include consideration of what materials can be incinerated. Transport from the institution must be in accordance with DOT regulations (244).

(C) Discarding chemical stocks: Unlabeled containers of chemicals and solutions should undergo prompt disposal; if partially used, they should not be opened (24, 27).

(D) Before a worker's employment in the laboratory ends, chemicals for which that person was responsible should be discarded or returned to storage (226).

(E) Frequency of disposal: Waste should be removed from laboratories to a central waste storage area at least once per week and from the central waste storage area at regular intervals (14).

(F) Method of disposal: Incineration in an environmentally acceptable manner is the most practical disposal method for combustible laboratory waste (14, 238, 241).

(G) Indiscriminate disposal by pouring waste chemicals down the drain (14, 231, 242) or adding them to mixed refuse for landfill burial is unacceptable (14).

(H) Hoods should not be used as a means of disposal for volatile chemicals (40, 200).

(I) Disposal by recycling (233, 243) or chemical decontamination (40, 230) should be used when possible.

(e) Basic rules and procedures for working with chemicals. The chemical hygiene plan should require that laboratory workers know and follow its rules and procedures. In addition to the procedures of the subprograms mentioned above, these should include the general rules following:

(i) General rules. The following should be used for essentially all laboratory work with chemicals:

(A) Accidents and spills—Eye contact: Promptly flush eyes with water for a prolonged period (15 minutes) and seek medical attention (33, 172).

(B) Ingestion: Encourage the victim to drink large amounts of water (178).

(C) Skin contact: Promptly flush the affected area with water (33, 172, 178) and remove any contaminated clothing (172, 178). If symptoms persist after washing, seek medical attention (33).

(D) Clean-up. Promptly clean up spills, using appropriate protective apparel and equipment and proper disposal (24, 33). See pp. 233-237 for specific clean-up recommendations.

(E) Avoidance of "routine" exposure: Develop and encourage safe habits (23); avoid unnecessary exposure to chemicals by any route (23);

(F) Do not smell or taste chemicals (32). Vent apparatus which may discharge toxic chemicals (vacuum pumps, distillation columns, etc.) into local exhaust devices (199).

(G) Inspect gloves (157) and test glove boxes (208) before use.

(H) Do not allow release of toxic substances in cold rooms and warm rooms, since these have contained recirculated atmospheres (209).

(I) Choice of chemicals: Use only those chemicals for which the quality of the available ventilation system is appropriate (13).

(J) Eating, smoking, etc.: Avoid eating, drinking, smoking, gum chewing, or application of cosmetics in areas where laboratory chemicals are present (22, 24, 32, 40); wash hands before conducting these activities (23, 24).

(K) Avoid storage, handling, or consumption of food or beverages in storage areas, refrigerators, glassware, or utensils which are also used for laboratory operations (23, 24, 226).

(L) Equipment and glassware: Handle and store laboratory glassware with care to avoid damage; do not use damaged glassware (25). Use extra care with Dewar flasks and other evacuated glass apparatus; shield or wrap them to contain chemicals and fragments should implosion occur (25). Use equipment only for its designed purpose (23, 26).

(M) Exiting: Wash areas of exposed skin well before leaving the laboratory (23).

(N) Horseplay: Avoid practical jokes or other behavior which might confuse, startle, or distract another worker (23).

(O) Mouth suction: Do not use mouth suction for pipetting or starting a siphon (23, 32).

(P) Personal apparel: Confine long hair and loose clothing (23, 158). Wear shoes at all times in the laboratory but do not wear sandals, perforated shoes, or sneakers (158).

(Q) Personal housekeeping: Keep the work area clean and uncluttered, with chemicals and equipment being properly labeled and stored; clean up the work area on completion of an operation or at the end of each day (24).

(R) Personal protection: Assure that appropriate eye protection (154-156) is worn by all persons, including visitors, where chemicals are stored or handled (22, 23, 33, 154).

(S) Wear appropriate gloves when the potential for contact with toxic materials exists (157); inspect the gloves before each use, wash them before removal, and replace them periodically (157). (A table of resistance to chemicals of common glove materials is given p. 159.)

(T) Use appropriate (164-168) respiratory equipment when air contaminant concentrations are not sufficiently restricted by engineering controls (164-5), inspecting the respirator before use (169).

(U) Use any other protective and emergency apparel and equipment as appropriate (22, 157-162).

(V) Void use of contact lenses in the laboratory unless necessary; if they are used, inform supervisor so special precautions can be taken (155).

(W) Remove laboratory coats immediately on significant contamination (161).

(X) Planning: Seek information and advice about hazards (7), plan appropriate protective procedures, and plan positioning of equipment before beginning any new operation (22, 23).

(Y) Unattended operations: Leave lights on, place an appropriate sign on the door, and provide for containment of toxic substances in the event of failure of a utility service (such as cooling water) to an unattended operation (27, 128).

(Z) Use of hood: Use the hood for operations which might result in release of toxic chemical vapors or dust (198-9).

(AA) As a rule of thumb, use a hood or other local ventilation device when working with any appreciably volatile substance with a TLV of less than 50 ppm (13).

(BB) Confirm adequate hood performance before use; keep hood closed at all times except when adjustments within the hood are being made (200); keep materials stored in hoods to a minimum and do not allow them to block vents or air flow (200).

(CC) Leave the hood "on" when it is not in active use if toxic substances are stored in it or if it is uncertain whether adequate general laboratory ventilation will be maintained when it is "off" (200).

(DD) Vigilance: Be alert to unsafe conditions and see that they are corrected when detected (22).

(EE) Waste disposal: Assure that the plan for each laboratory operation includes plans and training for waste disposal (230).

(FF) Deposit chemical waste in appropriately labeled receptacles and follow all other waste disposal procedures of the chemical hygiene plan (22, 24).

(GG) Do not discharge to the sewer concentrated acids or bases (231); highly toxic, malodorous, or lachrymatory substances (231); or any substances which might interfere with the biological activity of waste water treatment plants, create fire or explosion hazards, cause structural damage, or obstruct flow (242).

(HH) Working alone: Avoid working alone in a building; do not work alone in a laboratory if the procedures being conducted are hazardous (28).

(ii) Working with allergens and embryotoxins.

(A) Allergens (examples: Diazomethane, isocyanates, bichromates): Wear suitable gloves to prevent hand contact with allergens or substances of unknown allergenic activity (35).

(B) Embryotoxins (34-5) (examples: Organomercurials, lead compounds, formamide): Women of childbearing age shall handle these substances only in a hood whose satisfactory performance has been confirmed, using appropriate protective apparel (especially gloves) to prevent skin contact.

(C) Review each use of these materials with the research supervisor and review continuing uses annually or whenever a procedural change is made.

(D) Store these substances, properly labeled, in an adequately ventilated area in an unbreakable secondary container.

(E) Notify supervisors of all incidents of exposure or spills; consult a qualified physician when appropriate.

(iii) Work with chemicals of moderate chronic or high acute toxicity.

Examples: diisopropylfluorophosphate (41), hydrofluoric acid (43), hydrogen cyanide (45).

(iv) Supplemental rules to be followed in addition to those mentioned above (Procedure B of "prudent practices," pp. 39-41):

(A) Aim: To minimize exposure to these toxic substances by any route using all reasonable precautions (39).

(B) Applicability: These precautions are appropriate for substances with moderate chronic or high acute toxicity used in significant quantities (39).

(C) Location: Use and store these substances only in areas of restricted access with special warning signs (40, 229).

(D) Always use a hood (previously evaluated to confirm adequate performance with a face velocity of at least 60 linear feet per minute) (40) or other containment device for procedures which may result in the generation of aerosols or vapors containing the substance (39); trap released vapors to prevent their discharge with the hood exhaust (40).

(E) Personal protection: Always avoid skin contact by use of gloves and long sleeves (and other protective apparel as appropriate) (39). Always wash hands and arms immediately after working with these materials (40).

(F) Records: Maintain records of the amounts of these materials on hand, amounts used, and the names of the workers involved (40, 229).

(G) Prevention of spills and accidents: Be prepared for accidents and spills (41).

(H) Assure that at least 2 people are present at all times if a compound in use is highly toxic or of unknown toxicity (39).

(I) Store breakable containers of these substances in chemically resistant trays; also work and mount apparatus above such trays or cover work and storage surfaces with removable, absorbent, plastic backed paper (40).

(J) If a major spill occurs outside the hood, evacuate the area; assure that cleanup personnel wear suitable protective apparel and equipment (41).

(K) Waste: Thoroughly decontaminate or incinerate contaminated clothing or shoes (41). If possible, chemically decontaminate by chemical conversion (40).

(L) Store contaminated waste in closed, suitably labeled, impervious containers (for liquids, in glass or plastic bottles half-filled with vermiculite) (40).

(v) Work with chemicals of high chronic toxicity.

Examples: Dimethylmercury and nickel carbonyl (48), benzo-a-pyrene (51), N-nitrosodiethylamine (54), other human carcinogens or substances with high carcinogenic potency in animals (38).

(vi) Further supplemental rules to be followed, in addition to all these mentioned above, for work with substances of known high chronic toxicity (in quantities above a few

milligrams to a few grams, depending on the substance) (47). (Procedure A of "Prudent Practices" pp. 47-50).

(A) Access: Conduct all transfers and work with these substances in a "controlled area": A restricted access hood, glove box, or portion of a lab, designated for use of highly toxic substances, for which all people with access are aware of the substances being used and necessary precautions (48).

(B) Approvals: Prepare a plan for use and disposal of these materials and obtain the approval of the laboratory supervisor (48).

(C) Noncontamination/decontamination: Protect vacuum pumps against contamination by scrubbers or HEPA filters and vent them into the hood (49). Decontaminate vacuum pumps or other contaminated equipment, including glassware, in the hood before removing them from the controlled area (49, 50).

(D) Decontaminate the controlled area before normal work is resumed there (50).

(E) Exiting: On leaving a controlled area, remove any protective apparel (placing it in an appropriate, labeled container) and thoroughly wash hands, forearms, face, and neck (49).

(F) Housekeeping: Use a wet mop or a vacuum cleaner equipped with a HEPA filter instead of dry sweeping if the toxic substance was a dry powder (50).

(G) Medical surveillance: If using toxicologically significant quantities of such a substance on a regular basis (e.g., 3 times per week), consult a qualified physician concerning desirability of regular medical surveillance (50).

(H) Records: Keep accurate records of the amounts of these substances stored (229) and used, the dates of use, and names of users (48).

(I) Signs and labels: Assure that the controlled area is conspicuously marked with warning and restricted access signs (49) and that all containers of these substances are appropriately labeled with identity and warning labels (48).

(J) Spills: Assure that contingency plans, equipment, and materials to minimize exposures of people and property in case of accident are available (233-4).

(K) Storage: Store containers of these chemicals only in a ventilated, limited access (48, 227, 229) area in appropriately labeled, unbreakable, chemically resistant, secondary containers (48, 229).

(L) Glove boxes: For a negative pressure glove box, ventilation rate must be at least 2 volume changes/hour and pressure at least 0.5 inches of water (48). For a positive pressure glove box, thoroughly check for leaks before each use (49). In either case, trap the exit gases or filter them through a HEPA filter and then release them into the hood (49).

(M) Waste: Use chemical decontamination whenever possible; ensure that containers of contaminated waste (including washings from contaminated flasks) are transferred from the controlled area in a secondary container under the supervision of authorized personnel (49, 50, 233).

(vii) Animal work with chemicals of high chronic toxicity.

(A) Access: For large scale studies, special facilities with restricted access are preferable (56).

(B) Administration of the toxic substance: When possible, administer the substance by injection or gavage instead

of in the diet. If administration is in the diet, use a caging system under negative pressure or under laminar air flow directed toward HEPA filters (56).

(C) Aerosol suppression: Devise procedures which minimize formation and dispersal of contaminated aerosols, including those from food, urine, and feces (e.g., use HEPA filtered vacuum equipment for cleaning, moisten contaminated bedding before removal from the cage, mix diets in closed containers in a hood) (55, 56).

(D) Personal protection: When working in the animal room, wear plastic or rubber gloves, fully buttoned laboratory coat or jumpsuit and, if needed because of incomplete suppression of aerosols, other apparel and equipment (shoe and head coverings, respirator) (56).

(E) Waste disposal: Dispose of contaminated animal tissues and excreta by incineration if the available incinerator can convert the contaminant to nontoxic products (238); otherwise, package the waste appropriately for burial in an EPA-approved site (239).

(f) Safety recommendations. The above recommendations from "prudent practices" do not include those which are directed primarily toward prevention of physical injury rather than toxic exposure. However, failure of precautions against injury will often have the secondary effect of causing toxic exposures. Therefore, we list below page references for recommendations concerning some of the major categories of safety hazards which also have implications for chemical hygiene:

- (i) Corrosive agents: (35-6)
- (ii) Electrically powered laboratory apparatus: (179-92)
- (iii) Fires, explosions: (26, 57-74, 162-4, 174-5, 219-20, 226-7)
- (iv) Low temperature procedures: (26, 88)
- (v) Pressurized and vacuum operations (including use of compressed gas cylinders): (27, 75-101)

(g) Material safety data sheets. Material safety data sheets are presented in "prudent practices" for the chemicals listed below. (Asterisks denote that comprehensive material safety data sheets are provided.)

*Acetyl peroxide (105) *Acrolein (106) *Acrylonitrile (107) Ammonia (anhydrous) (91) *Aniline (109) *Benzene (110) *Benzo[a]pyrene (112) *Bis(chloromethyl) ether (113) Boron trichloride (91) Boron trifluoride (92) Bromine (114) *Tert-butyl hydroperoxide (148) *Carbon disulfide (116) Carbon monoxide (92) *Carbon tetrachloride (118) *Chlorine (119) Chlorine trifluoride (94) *Chloroform (121) Chloromethane (93) *Diethyl ether (122) Diisopropyl fluorophosphate (41) *Dimethylformamide (123) *Dimethyl sulfate (125) *Dioxane (126) *Ethylene dibromide (128) *fluorine (95) *Formaldehyde (130) *Hydrazine and salts (132) Hydrofluoric acid (43) Hydrogen bromide (98) Hydrogen chloride (98) *Hydrogen cyanide (133) *Hydrogen sulfide (135) Mercury and compounds (52) *Methanol (137) *Morpholine (138) *Nickel carbonyl (99) *Nitrobenzene (139) Nitrogen dioxide (100) N-nitrosodiethylamine (54) *Peracetic acid (141) *Phenol (142) *Phosgene (143) *Pyridine (144) *Sodium azide (145) *Sodium cyanide (147) Sulfur dioxide (101) *Trichloroethylene (149) *Vinyl chloride (150)

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-62-40025, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-62-40025, filed 7/20/94, effective 9/20/94; 90-17-051 (Order 90-10), § 296-62-40025, filed 8/13/90, effective 9/24/90.]

WAC 296-62-41031 Personal protective equipment selection. (1) Personal protective equipment (PPE) must be selected and used which will protect employees from the hazards and potential hazards they are likely to encounter as identified during the site characterization and analysis.

(2) Personal protective equipment selection must be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the site.

(3) Positive pressure self-contained breathing apparatus, or positive pressure air-line respirators equipped with an escape air supply must be used when chemical exposure levels present will create a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.

(4) Totally encapsulating chemical protective suits (protection equivalent to Level A protection as recommended in Appendix B) must be used in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape.

(5) The level of protection provided by PPE selection must be increased when additional information or site conditions indicate that increased protection is necessary to reduce employee exposures below permissible exposure limits and published exposure levels for hazardous substances and health hazards. (See WAC 296-62-41082 - Appendix B for guidance on selecting PPE ensembles.)

Note: The level of employee protection provided may be decreased when additional information or site conditions show that decreased protection will not result in increased hazardous exposures to employees.

(6) Personal protective equipment must be selected and used to meet the requirements of WAC 296-800-160, and additional requirements specified in this part.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-41031, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-41031, filed 3/23/99, effective 6/23/99.]

WAC 296-62-41086 Appendix E—Training curriculum guidelines. The following nonmandatory general criteria may be used for assistance in developing training curriculum used to meet the training requirements of Part R.

These are generic guidelines and they are not presented as a complete training curriculum for any specific employer. Site-specific training programs must be developed on the basis of a needs assessment of the emergency response operation in accordance with this chapter (chapter 296-62 WAC, Part R).

The guidance set forth here presents a highly effective program that in the areas covered would meet or exceed the regulatory requirements. In addition, other approaches could meet the regulatory requirements.

Suggested general criteria:

Definitions:

Suggested core criteria:

"Competent" means possessing the skills, knowledge, experience, and judgment to perform assigned tasks or activities satisfactorily as determined by the employer.

"Demonstration" means the showing by actual use of equipment or procedures.

"Hands-on training" means training in a simulated work environment that permits each student to have experience performing tasks, making decisions, or using equipment appropriate to the job assignment for which the training is being conducted.

"Initial training" means training required before beginning work.

"Lecture" means an interactive discourse with a class lead by an instructor.

"Proficient" means meeting a stated level of achievement.

"Site-specific" means individual training directed to the operations of a specific job site.

"Training hours" means the number of hours devoted to lecture, learning activities, small group work sessions, demonstration, evaluations, or hands-on experience.

(1) Training facility. The training facility should have available sufficient resources, equipment, and site locations to perform concise and hands-on training when appropriate. Training facilities should have sufficient organization, support staff, and services to conduct training in each of the courses offered.

(2) Training director. Each training program should be under the direction of a training director who is responsible for the program. The training director should have a minimum of two years of employee education experience.

(3) Instructors. Instructors should be deemed competent on the basis of previous documented experience in their area of instruction, successful completion of a "train-the-trainer" program specific to the topics they will teach, and an evaluation of instructional competence by the training director.

(a) Instructors should be required to maintain professional competency by participating in continuing education or professional development programs or by successfully completing an annual refresher course and having an annual review by the training director.

(b) The annual review by the training director should include observation of an instructor's delivery, a review of those observations with the trainer, and an analysis of any instructor or class evaluations completed by the students during the previous year.

(4) Course materials. The training director should approve all course materials to be used by the training provider. Course materials should be reviewed and updated at least annually. Materials and equipment should be in good working order and maintained properly.

(a) All written and audio-visual materials in training curricula should be peer reviewed by technically competent outside reviewers or by a standing advisory committee.

(b) Reviewers should possess expertise in the following disciplines were applicable: Occupational health, industrial hygiene and safety, chemical/environmental engineering,

employee education, or emergency response. One or more of the peer reviewers should be an employee experienced in the work activities to which the training is directed.

(5) Students. The program for accepting students should include:

(a) Assurance that the student is or will be involved in work where chemical exposures are likely and that the student possesses the skills necessary to perform the work.

(b) A policy on the necessary medical clearance.

(6) Ratios. Student-instructor ratios should not exceed thirty students per instructor. Hands-on activity requiring the use of personal protective equipment should have the following student-instructor ratios: For Level C or Level D personal protective equipment the ratio should be ten students per instructor. For Level A or Level B personal protective equipment the ratio should be five students per instructor.

(7) Proficiency assessment. Proficiency should be evaluated and documented by the use of a written assessment and a skill demonstration selected and developed by the training director and training staff. The assessment and demonstration should evaluate the knowledge and individual skills developed in the course of training. The level of minimum achievement necessary for proficiency shall be specified in writing by the training director.

(a) If a written test is used, there should be a minimum of fifty questions. If a written test is used in combination with a skills demonstration, a minimum of twenty-five questions should be used. If a skills demonstration is used, the tasks chosen and the means to rate successful completion should be fully documented by the training director.

(b) The content of the written test or of the skill demonstration shall be relevant to the objectives of the course.

The written test and skill demonstration should be updated as necessary to reflect changes in the curriculum and any update should be approved by the training director.

(c) The proficiency assessment methods, regardless of the approach or combination of approaches used, should be justified, documented and approved by the training director.

(d) The proficiency of those taking the additional courses for supervisors should be evaluated and documented by using proficiency assessment methods acceptable to the training director. These proficiency assessment methods must reflect the additional responsibilities borne by supervisory personnel in hazardous waste operations or emergency response.

(8) Course certificate. Written documentation should be provided to each student who satisfactorily completes the training course. The documentation should include:

(a) Student's name.

(b) Course title.

(c) Course date.

(d) Statement that the student has successfully completed the course.

(e) Name and address of the training provider.

(f) An individual identification number for the certificate.

(g) List of the levels of personal protective equipment used by the student to complete the course.

(i) This documentation may include a certificate and an appropriate wallet-sized laminated card with a photograph of the student and the above information.

(ii) When such course certificate cards are used, the individual identification number for the training certificate should be shown on the card.

(9) Recordkeeping. Training providers should maintain records listing the dates courses were presented, the names of the individual course attendees, the names of those students successfully completing each course, and the number of training certificates issued to each successful student. These records should be maintained for a minimum of five years after the date an individual participated in a training program offered by the training provider. These records should be available and provided upon the student's request or as mandated by law.

(10) Program quality control. The training director should conduct or direct an annual written audit of the training program. Program modifications to address deficiencies, if any, should be documented, approved, and implemented by the training provider. The audit and the program modification documents should be maintained at the training facility.

Suggested Program Quality Control Criteria:

Factors listed here are suggested criteria for determining the quality and appropriateness of employee health and safety training for hazardous waste operations and emergency response.

(a) Training plan. Adequacy and appropriateness of the training program's curriculum development, instructor training, distribution of course materials, and direct student training should be considered, including:

(i) The duration of training, course content, and course schedules/agendas;

(ii) The different training requirements of the various target populations, as specified in the appropriate generic training curriculum;

(iii) The process for the development of curriculum, which includes appropriate technical input, outside review, evaluation, program pretesting.

(iv) The adequate and appropriate inclusion of hands-on, demonstration, and instruction methods;

(v) Adequate monitoring of student safety, progress, and performance during the training.

(b) Program management, training director, staff, and consultants. Adequacy and appropriateness of staff performance and delivering an effective training program should be considered, including:

(i) Demonstration of the training director's leadership in assuring quality of health and safety training;

(ii) Demonstration of the competency of the staff to meet the demands of delivering high quality hazardous waste employee health and safety training;

(iii) Organization charts establishing clear lines of authority;

(iv) Clearly defined staff duties including the relationship of the training staff to the overall program;

(v) Evidence that the training organizational structure suits the needs of the training program;

(vi) Appropriateness and adequacy of the training methods used by the instructors;

(vii) Sufficiency of the time committed by the training director and staff to the training program;

(viii) Adequacy of the ratio of training staff to students;

(ix) Availability and commitment of the training program of adequate human and equipment resources in the areas of:

(A) Health effects;

(B) Safety;

(C) Personal protective equipment (PPE);

(D) Operational procedures;

(E) Employee protection practices/procedures;

(x) Appropriateness of management controls;

(xi) Adequacy of the organization and appropriate resources assigned to assure appropriate training;

(xii) In the case of multiple-site training programs, adequacy of management of the satellite centers.

(c) Training facilities and resources. Adequacy and appropriateness of the facilities and resources for supporting the training program should be considered, including:

(i) Space and equipment to conduct the training;

(ii) Facilities for representative hands-on training;

(iii) In the case of multiple-site programs, equipment and facilities at the satellite centers;

(iv) Adequacy and appropriateness of the quality control and evaluations program to account for instructor performance;

(v) Adequacy and appropriateness of the quality control and evaluation program to ensure appropriate course evaluation, feedback, updating, and corrective action;

(vi) Adequacy and appropriateness of disciplines and expertise being used within the quality control and evaluation program;

(vii) Adequacy and appropriateness of the role of student evaluations to provide feedback for training program improvement.

(d) Quality control and evaluation. Adequacy and appropriateness of quality control and evaluation plans for training programs should be considered, including:

(i) A balanced advisory committee and/or competent outside reviewers to give overall policy guidance;

(ii) Clear and adequate definition of the composition and active programmatic role of the advisory committee or outside reviewers;

(iii) Adequacy of the minutes or reports of the advisory committee or outside reviewers' meetings or written communication;

(iv) Adequacy and appropriateness of the quality control and evaluations program to account for instructor performance;

(v) Adequacy and appropriateness of the quality control and evaluation program to ensure appropriate course evaluation, feedback, updating, and corrective action;

(vi) Adequacy and appropriateness of disciplines and expertise being used within the quality control and evaluation program;

(vii) Adequacy and appropriateness of the role of student evaluations to provide feedback for training program improvement.

(e) Students. Adequacy and appropriateness of the program for accepting students should be considered, including:

(i) Assurance that the student already possess the necessary skills for their job, including necessary documentation;

(ii) Appropriateness of methods the program uses to ensure that recruits are capable of satisfactorily completing training;

(iii) Review and compliance with any medical clearance policy.

(f) Institutional environment and administrative support. The adequacy and appropriateness of the institutional environment and administrative support system for the training program should be considered, including:

(i) Adequacy of the institutional commitment to the employee training program;

(ii) Adequacy and appropriateness of the administrative structure and administrative support.

(g) Summary of evaluation questions. Key questions for evaluating the quality and appropriateness of an overall training program should include the following:

(i) Are the program objectives clearly stated?

(ii) Is the program accomplishing its objectives?

(iii) Are appropriate facilities and staff available?

(iv) Is there an appropriate mix of classroom, demonstration, and hands-on training?

(v) Is the program providing quality employee health and safety training that fully meets the intent of regulatory requirements?

(vi) What are the program's main strengths?

(vii) What are the program's main weaknesses?

(viii) What is recommended to improve the program?

(ix) Are instructors instructing according to their training outlines?

(x) Is the evaluation tool current and appropriate for the program content?

(xi) Is the course material current and relevant to the target group?

Suggested Training Curriculum Guidelines:

The following training curriculum guidelines are for those operations specifically identified in this Part R as requiring training. Issues such as qualifications of instructors, training certification, and similar criteria appropriate to all categories of operations addressed in this Part R have been covered in the preceding section and are not addressed in each of the generic guidelines.

(h) Emergency response training.

(i) General considerations. Emergency response organizations are required to consider the topics listed in WAC 296-62-41020. Emergency response organizations may use some or all of the following topics to supplement those mandatory topics when developing their response training programs. Many of the topics would require an interaction between the response provider and the individuals responsible for the site where the response would be expected.

(A) Hazard recognition, including:

(I) Nature of hazardous substances present;

(II) Practical applications of hazard recognition, including presentations on biology, chemistry, and physics.

(B) Principles of toxicology, biological monitoring, and risk assessment.

(C) Safe work practices and general site safety.

(D) Engineering controls and hazardous waste operations.

(E) Site safety plans and standard operating procedures.

(F) Decontamination procedures and practices.

(G) Emergency procedures, first aid, and self-rescue.

(H) Safe use of field equipment.

(I) Storage, handling, use and transportation of hazardous substances.

(J) Use, care, and limitations of personal protective equipment.

(K) Safe sampling techniques.

(L) Rights and responsibilities of employees under WISHA and other related regulations and laws concerning right-to-know, safety and health, compensations and liability.

(M) Medical monitoring requirements.

(N) Community relations.

(ii) Suggested criteria for specific courses.

(A) First responder awareness level.

(I) Review of and demonstration of competency in performing the applicable skills of WAC 296-62-41010.

(II) Hands-on experience with the U.S. Department of Transportation's Emergency Response Guidebook (ERG) and familiarization with WAC 296-800-170, the chemical hazard communication standard.

(III) Review of the principles and practices for analyzing an incident to determine both the hazardous substances present and the basic hazard and response information for each hazardous substance present.

(IV) Review of procedures for implementing actions consistent with the local emergency response plan, the organization's standard operating procedures, and the current edition of DOT's ERG including emergency notification procedures and follow-up communications.

(V) Review of the expected hazards including fire and explosions hazards, confined space hazards, electrical hazards, powered equipment hazards, motor vehicle hazards, and walking-working surface hazards.

(VI) Awareness and knowledge of the competencies for the First Responder at the Awareness Level covered in the National Fire Protection Association's Standard No. 472, Professional Competence of Responders to Hazardous Materials Incidents.

(B) First responder operations level.

(I) Review of and demonstration of competency in performing the applicable skills of WAC 296-62-41010.

(II) Hands-on experience with the U.S. Department of Transportation's Emergency Response Guidebook (ERG), manufacturer material safety data sheets, CHEMTREC/CANUTEC, shipper or manufacturer contacts, and other relevant sources of information addressing hazardous substance releases. Familiarization with WAC 296-800-170, the chemical hazard communication standard.

(III) Review of the principles and practices for analyzing an incident to determine the hazardous substances present, the likely behavior of the hazardous substance and its container, the types of hazardous substance transportation containers and vehicles, the types and selection of the appropriate defensive strategy for containing the release.

(IV) Review of procedures for implementing continuing response actions consistent with the local emergency response plan, the organization's standard operating procedures, and the current edition of DOT's ERG including

extended emergency notification procedures and follow-up communications.

(V) Review of the principles and practice for proper selection and use of personal protective equipment.

(VI) Review of the principles and practice of personnel and equipment decontamination.

(VII) Review of the expected hazards including fire and explosions hazards, confined space hazards, electrical hazards, powered equipment hazards, motor vehicle hazards, and walking-working surface hazards.

(VIII) Awareness and knowledge of the competencies for the First Responder at the Operations Level covered in the National Fire Protection Association's Standard No. 472, Professional Competence of Responders to Hazardous Materials Incidents.

(C) Hazardous materials technician.

(I) Review of and demonstration of competency in performing the applicable skills of WAC 296-62-41010.

(II) Hands-on experience with written and electronic information relative to response decision making including, but not limited to, the U.S. Department of Transportation's Emergency Response Guidebook (ERG), manufacturer material safety data sheets, CHEMTREC/CANUTEC, shipper or manufacturer contacts, computer data bases and response models, and other relevant sources of information addressing hazardous substance releases. Familiarization with WAC 296-800-170, the chemical hazard communication standard.

(III) Review of the principles and practices for analyzing an incident to determine the hazardous substances present, their physical and chemical properties, the likely behavior of the hazardous substance and its container, the types of hazardous substance transportation containers and vehicles involved in the release, the appropriate strategy for approaching release sites and containing the release.

(IV) Review of procedures for implementing continuing response actions consistent with the local emergency response plan, the organization's standard operating procedures, and the current edition of DOT's ERG including extended emergency notification procedures and follow-up communications.

(V) Review of the principles and practice for proper selection and use of personal protective equipment.

(VI) Review of the principles and practices of establishing exposure zones, proper decontamination and medical surveillance stations and procedures.

(VII) Review of the expected hazards including fire and explosions hazards, confined space hazards, electrical hazards, powered equipment hazards, motor vehicle hazards, and walking-working surface hazards.

(VIII) Awareness and knowledge of the competencies for the Hazardous Materials Technician covered in the National Fire Protection Association's Standard No. 472, Professional Competence of Responders to Hazardous Materials Incidents.

(D) Hazardous materials specialist.

(I) Review of and demonstration of competency in performing the applicable skills of WAC 296-62-41010.

(II) Hands-on experience with retrieval and use of written and electronic information relative to response decision

making including, but not limited to, the U.S. Department of Transportation's Emergency Response Guidebook (ERG), manufacturer material safety data sheets, CHEMTREC/CANUTEC, shipper or manufacturer contacts, computer data bases and response models, and other relevant sources of information addressing hazardous substance releases. Familiarization with WAC 296-800-170, the chemical hazard communication standard.

(III) Review of the principles and practices for analyzing an incident to determine the hazardous substances present, their physical and chemical properties, and the likely behavior of the hazardous substance and its container, vessel, or vehicle.

(IV) Review of the principles and practices for identification of the types of hazardous substance transportation containers, vessels and vehicles involved in the release; selecting and using the various types of equipment available for plugging or patching transportation containers, vessels or vehicles; organizing and directing the use of multiple teams of hazardous material technicians and selecting the appropriate strategy for approaching release sites and containing or stopping the release.

(V) Review of procedures for implementing continuing response actions consistent with the local emergency response plan, the organization's standard operating procedures, including knowledge of the available public and private response resources, establishment of an incident command post, direction of hazardous material technician teams, and extended emergency notification procedures and follow-up communications.

(VI) Review of the principles and practice for proper selection and use of personal protective equipment.

(VII) Review of the principles and practices of establishing exposure zones and proper decontamination, monitoring and medical surveillance stations and procedures.

(VIII) Review of the expected hazards including fire and explosions hazards, confined space hazards, electrical hazards, powered equipment hazards, motor vehicle hazards, and walking-working surface hazards.

(IX) Awareness and knowledge of the competencies for the Off-site Specialist Employee covered in the National Fire Protection Association's Standard No. 472, Professional Competence of Responders to Hazardous Materials Incidents.

(E) Incident commander.

The incident commander is the individual who, at any one time, is responsible for and in control of the response effort. This individual is the person responsible for the direction and coordination of the response effort. An incident commander's position should be occupied by the most senior, appropriately trained individual present at the response site. Yet, as necessary and appropriate by the level of response provided, the position may be occupied by many individuals during a particular response as the need for greater authority, responsibility, or training increases. It is possible for the first responder at the awareness level to assume the duties of incident commander until a more senior and appropriately trained individual arrives at the response site.

Therefore, any emergency responder expected to perform as an incident commander should be trained to fulfill the

obligations of the position at the level of response they will be providing including the following:

(I) Ability to analyze a hazardous substance incident to determine the magnitude of the response problem.

(II) Ability to plan and implement an appropriate response plan within the capabilities of available personnel and equipment.

(III) Ability to implement a response to favorably change the outcome of the incident in a manner consistent with the local emergency response plan and the organization's standard operating procedures.

(IV) Ability to evaluate the progress of the emergency response to ensure that the response objectives are being met safely, effectively, and efficiently.

(V) Ability to adjust the response plan to the conditions of the response and to notify higher levels of response when required by the changes to the response plan.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-62-41086, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-07-097, § 296-62-41086, filed 3/23/99, effective 6/23/99.]

Chapter 296-63 WAC

RIGHT TO KNOW FEE ASSESSMENT

WAC

296-63-009

Exemption requests.

WAC 296-63-009 Exemption requests. (1) Employers who do not have hazardous chemicals at their workplace may submit a written request for exemption to the department. Submission of an exemption request does not relieve an employer of his/her obligation to pay the fee assessment until such time as the request is approved. Employers granted exemptions will be removed from the listing of employers to be assessed a fee beginning with the current billing period.

(2) Exemptions shall only be considered for an employer's entire workplace consisting of all activities reported to the department under the same employer identification number.

(3) Each request for exemption must contain the following information:

- (a) Firm name and employer identification number;
- (b) Complete mailing address;
- (c) Complete location (such as street) address;

(d) A certified statement in the form required by RCW 9A.72.085 that a hazardous chemical survey of the employer's premises has been completed by a qualified person, the identity and qualifications of the person completing the survey, and that no hazardous chemicals as defined by WAC 296-800-170 are present at the workplace.

(4) The department may schedule an on-site inspection to determine the validity of the exemption request.

(5) The employer shall provide to the department within five working days of receiving a request from the department, any additional information identified by the department as necessary for evaluating the exemption request.

(6) Exemption requests shall be mailed to:

Right to Know Program
Department of Labor and Industries
P.O. Box 44620
Olympia, Washington 98504-4620

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-63-009, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.70.170 and 49.17.040. 98-02-029, § 296-63-009, filed 12/31/97, effective 1/31/98. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-23-003 (Order 86-38), § 296-63-009, filed 11/6/86.]

Chapter 296-67 WAC

SAFETY STANDARDS FOR PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS

WAC

296-67-005

296-67-053

296-67-061

296-67-291

Definitions.

Emergency planning and response.

Trade secrets.

Appendix C—Compliance guidelines and recommendations for process safety management (nonmandatory).

WAC 296-67-005 Definitions. "Atmospheric tank" means a storage tank which has been designed to operate at pressures from atmospheric through 0.5 p.s.i.g. (pounds per square inch gauge, 3.45 Kpa).

"Boiling point" means the boiling point of a liquid at a pressure of 14.7 pounds per square inch absolute (p.s.i.a.) (760 mm.). For the purposes of this part, where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, the 10 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.

"Catastrophic release" means a major uncontrolled emission, fire, or explosion, involving one or more highly hazardous chemicals, that presents serious danger to employees in the workplace.

"Facility" means the buildings, containers, or equipment which contain a process.

"Highly hazardous chemical" means a substance possessing toxic, reactive, flammable, or explosive properties and specified by WAC 296-67-001 (2)(a).

"Hot work" means work involving electric or gas welding, cutting, brazing, or similar flame or spark-producing operations.

"Normally unoccupied remote facility" means a facility which is operated, maintained, or serviced by employees who visit the facility only periodically to check its operation and to perform necessary operating or maintenance tasks. No employees are permanently stationed at the facility. Facilities meeting this definition are not contiguous with, and must be geographically remote from all other buildings, processes, or persons.

"Process" means any activity involving a highly hazardous chemical including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities. For purposes of this definition, any group of vessels which are interconnected and separate vessels which are located such that a highly hazardous chemical

could be involved in a potential release shall be considered a single process.

"Replacement in kind" means a replacement which satisfies the design specification.

"Trade secret" means any confidential formula, pattern, process, device, information, or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Chapter 296-62 WAC, Part B-1, sets out the criteria to be used in evaluating trade secrets.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-67-005, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-21-075 (Order 93-06), § 296-67-005, filed 10/20/93, effective 12/1/93; 92-17-022 (Order 92-06), § 296-67-005, filed 8/10/92, effective 9/10/92.]

WAC 296-67-053 Emergency planning and response.

The employer shall establish and implement an emergency action plan for the entire plant in accordance with the provisions of WAC 296-24-567. In addition, the emergency action plan shall include procedures for handling small releases. Employers covered under this standard may also be subject to the hazardous waste and emergency response provisions contained in WAC 296-800-170.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-67-053, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 92-17-022 (Order 92-06), § 296-67-053, filed 8/10/92, effective 9/10/92.]

WAC 296-67-061 Trade secrets. (1) Employers shall make all information necessary to comply with the section available to those persons responsible for compiling the process safety information (required by WAC 296-67-013), those assisting in the development of the process hazard analysis (required by WAC 296-67-017), those responsible for developing the operating procedures (required by WAC 296-67-021), and those involved in incident investigations (required by WAC 296-67-049), emergency planning and response (WAC 296-67-053) and compliance audits (WAC 296-67-057) without regard to possible trade secret status of such information.

(2) Nothing in this section shall preclude the employer from requiring the persons to whom the information is made available under WAC 296-67-061 to enter into confidentiality agreements not to disclose the information as set forth in WAC 296-62-053.

(3) Subject to the rules and procedures set forth in WAC 296-62-053, employees and their designated representatives shall have access to trade secret information contained within the process hazard analysis and other documents required to be developed by this standard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-67-061, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 92-17-022 (Order 92-06), § 296-67-061, filed 8/10/92, effective 9/10/92.]

WAC 296-67-291 Appendix C—Compliance guidelines and recommendations for process safety management (nonmandatory). This appendix serves as a nonmandatory guideline to assist employers and employees in complying with the requirements of this section, as well as

provides other helpful recommendations and information. Examples presented in this appendix are not the only means of achieving the performance goals in the standard. This appendix neither adds nor detracts from the requirements of the standard.

(1) Introduction to process safety management. The major objective of process safety management of highly hazardous chemicals is to prevent unwanted releases of hazardous chemicals especially into locations which could expose employees and others to serious hazards. An effective process safety management program requires a systematic approach to evaluating the whole process. Using this approach the process design, process technology, operational and maintenance activities and procedures, nonroutine activities and procedures, emergency preparedness plans and procedures, training programs, and other elements which impact the process are all considered in the evaluation. The various lines of defense that have been incorporated into the design and operation of the process to prevent or mitigate the release of hazardous chemicals need to be evaluated and strengthened to assure their effectiveness at each level. Process safety management is the proactive identification, evaluation and mitigation or prevention of chemical releases that could occur as a result of failures in process, procedures, or equipment. The process safety management standard targets highly hazardous chemicals that have the potential to cause a catastrophic incident. This standard as a whole is to aid employers in their efforts to prevent or mitigate episodic chemical releases that could lead to a catastrophe in the workplace and possibly to the surrounding community. To control these types of hazards, employers need to develop the necessary expertise, experiences, judgment, and proactive initiative within their workforce to properly implement and maintain an effective process safety management program as envisioned in the WISHA standard. This WISHA standard is required by the Clean Air Act amendments as is the Environmental Protection Agency's Risk Management Plan. Employers, who merge the two sets of requirements into their process safety management program, will better assure full compliance with each as well as enhancing their relationship with the local community. While WISHA believes process safety management will have a positive effect on the safety of employees in workplaces and also offers other potential benefits to employers (increased productivity), smaller businesses which may have limited resources available to them at this time, might consider alternative avenues of decreasing the risks associated with highly hazardous chemicals at their workplaces. One method which might be considered is the reduction in the inventory of the highly hazardous chemical. This reduction in inventory will result in a reduction of the risk or potential for a catastrophic incident. Also, employers including small employers may be able to establish more efficient inventory control by reducing the quantities of highly hazardous chemicals on site below the established threshold quantities. This reduction can be accomplished by ordering smaller shipments and maintaining the minimum inventory necessary for efficient and safe operation. When reduced inventory is not feasible, then the employer might consider dispersing inventory to several locations on site. Dispersing storage into locations where a release in one location will not

cause a release in another location is a practical method to also reduce the risk or potential for catastrophic incidents.

(2) Employee involvement in process safety management. Section 304 of the Clean Air Act amendments states that employers are to consult with their employees and their representatives regarding the employers efforts in the development and implementation of the process safety management program elements and hazard assessments. Section 304 also requires employers to train and educate their employees and to inform affected employees of the findings from incident investigations required by the process safety management program. Many employers, under their safety and health programs, have already established means and methods to keep employees and their representatives informed about relevant safety and health issues and employers may be able to adapt these practices and procedures to meet their obligations under this standard. Employers who have not implemented an occupational safety and health program may wish to form a safety and health committee of employees and management representatives to help the employer meet the obligations specified by this standard. These committees can become a significant ally in helping the employer to implement and maintain an effective process safety management program for all employees.

(3) Process safety information. Complete and accurate written information concerning process chemicals, process technology, and process equipment is essential to an effective process safety management program and to a process hazards analysis. The compiled information will be a necessary resource to a variety of users including the team that will perform the process hazards analysis as required under WAC 296-67-017; those developing the training programs and the operating procedures; contractors whose employees will be working with the process; those conducting the prestartup reviews; local emergency preparedness planners; and incurrence and enforcement officials. The information to be compiled about the chemicals, including process intermediates, needs to be comprehensive enough for an accurate assessment of the fire and explosion characteristics, reactivity hazards, the safety and health hazards to workers, and the corrosion and erosion effects on the process equipment and monitoring tools. Current material safety data sheet (MSDS) information can be used to help meet this requirement which must be supplemented with process chemistry information including runaway reaction and over pressure hazards if applicable. Process technology information will be a part of the process safety information package and it is expected that it will include diagrams of the type shown in WAC 296-67-289, Appendix B of this part as well as employer established criteria for maximum inventory levels for process chemicals; limits beyond which would be considered upset conditions; and a qualitative estimate of the consequences or results of deviation that could occur if operating beyond the established process limits. Employers are encouraged to use diagrams which will help users understand the process. A block flow diagram is used to show the major process equipment and interconnecting process flow lines and show flow rates, stream composition, temperatures, and pressures when necessary for clarity. The block flow diagram is a simplified diagram. Process flow diagrams are more complex and will

show all main flow streams including valves to enhance the understanding of the process, as well as pressures and temperatures on all feed and product lines within all major vessels, in and out of headers and heat exchangers, and points of pressure and temperature control. Also, materials of construction information, pump capacities and pressure heads, compressor horsepower and vessel design pressures and temperatures are shown when necessary for clarity. In addition, major components of control loops are usually shown along with key utilities on process flow diagrams. Piping and instrument diagrams (P&IDs) may be the more appropriate type of diagrams to show some of the above details and to display the information for the piping designer and engineering staff. The P&IDs are to be used to describe the relationships between equipment and instrumentation as well as other relevant information that will enhance clarity. Computer software programs which do P&IDs or other diagrams useful to the information package, may be used to help meet this requirement. The information pertaining to process equipment design must be documented. In other words, what were the codes and standards relied on to establish good engineering practice. These codes and standards are published by such organizations as the American Society of Mechanical Engineers, American Petroleum Institute, American National Standards Institute, National Fire Protection Association, American Society for Testing and Materials, National Board of Boiler and Pressure Vessel Inspectors, National Association of Corrosion Engineers, American Society of Exchange Manufacturers Association, and model building code groups. In addition, various engineering societies issue technical reports which impact process design. For example, the American Institute of Chemical Engineers has published technical reports on topics such as two phase flow for venting devices. This type of technically recognized report would constitute good engineering practice. For existing equipment designed and constructed many years ago in accordance with the codes and standards available at that time and no longer in general use today, the employer must document which codes and standards were used and that the design and construction along with the testing, inspection and operation are still suitable for the intended use. Where the process technology requires a design which departs from the applicable codes and standards, the employer must document that the design and construction is suitable for the intended purpose.

(4) Process hazard analysis. A process hazard analysis (PHA), sometimes called a process hazard evaluation, is one of the most important elements of the process safety management program. A PHA is an organized and systematic effort to identify and analyze the significance of potential hazards associated with the processing or handling of highly hazardous chemicals. A PHA provides information which will assist employers and employees in making decisions for improving safety and reducing the consequences of unwanted or unplanned releases of hazardous chemicals. A PHA is directed toward analyzing potential causes and consequences of fires, explosions, releases of toxic or flammable chemicals and major spills of hazardous chemicals. The PHA focuses on equipment, instrumentation, utilities, human actions (routine and nonroutine), and external factors that might impact the process. These considerations assist in determining the

hazards and potential failure points or failure modes in a process. The selection of a PHA methodology or technique will be influenced by many factors including the amount of existing knowledge about the process. Is it a process that has been operated for a long period of time with little or no innovation and extensive experience has been generated with its use? Or, is it a new process or one which has been changed frequently by the inclusion of innovative features? Also, the size and complexity of the process will influence the decision as to the appropriate PHA methodology to use. All PHA methodologies are subject to certain limitations. For example, the checklist methodology works well when the process is very stable and no changes are made, but it is not as effective when the process has undergone extensive change. The checklist may miss the most recent changes and consequently the changes would not be evaluated. Another limitation to be considered concerns the assumptions made by the team or analyst. The PHA is dependent on good judgment and the assumptions made during the study need to be documented and understood by the team and reviewer and kept for a future PHA. The team conducting the PHA need to understand the methodology that is going to be used. A PHA team can vary in size from two people to a number of people with varied operational and technical backgrounds. Some team members may only be a part of the team for a limited time. The team leader needs to be fully knowledgeable in the proper implementation of the PHA methodology that is to be used and should be impartial in the evaluation. The other full or part time team members need to provide the team with expertise in areas such as process technology, process design, operating procedures and practices, including how the work is actually performed, alarms, emergency procedures, instrumentation, maintenance procedures, both routine and non-routine tasks, including how the tasks are authorized, procurement of parts and supplies, safety and health, and any other relevant subject as the need dictates. At least one team member must be familiar with the process. The ideal team will have an intimate knowledge of the standards, codes, specifications and regulations applicable to the process being studied. The selected team members need to be compatible and the team leader needs to be able to manage the team, and the PHA study. The team needs to be able to work together while benefiting from the expertise of others on the team or outside the team, to resolve issues, and to forge a consensus on the findings of the study and recommendations. The application of a PHA to a process may involve the use of different methodologies for various parts of the process. For example, a process involving a series of unit operations of varying sizes, complexities, and ages may use different methodologies and team members for each operation. Then the conclusions can be integrated into one final study and evaluation. A more specific example is the use of a checklist PHA for a standard boiler or heat exchanger and the use of a hazard and operability PHA for the overall process. Also, for batch type processes like custom batch operations, a generic PHA of a representative batch may be used where there are only small changes of monomer or other ingredient ratios and the chemistry is documented for the full range and ratio of batch ingredients. Another process that might consider using a generic type of PHA is a gas plant. Often these plants are simply

moved from site to site and therefore, a generic PHA may be used for these movable plants. Also, when an employer has several similar size gas plants and no sour gas is being processed at the site, then a generic PHA is feasible as long as the variations of the individual sites are accounted for in the PHA. Finally, when an employer has a large continuous process which has several control rooms for different portions of the process such as for a distillation tower and a blending operation, the employer may wish to do each segment separately and then integrate the final results. Additionally, small businesses which are covered by this rule, will often have processes that have less storage volume, less capacity, and less complicated than processes at a large facility. Therefore, WISHA would anticipate that the less complex methodologies would be used to meet the process hazard analysis criteria in the standard. These process hazard analyses can be done in less time and with a few people being involved. A less complex process generally means that less data, P&IDs, and process information is needed to perform a process hazard analysis. Many small businesses have processes that are not unique, such as cold storage lockers or water treatment facilities. Where employer associations have a number of members with such facilities, a generic PHA, evolved from a checklist or what-if questions, could be developed and used by each employer effectively to reflect his/her particular process; this would simplify compliance for them. When the employer has a number of processes which require a PHA, the employer must set up a priority system of which PHAs to conduct first. A preliminary or gross hazard analysis may be useful in prioritizing the processes that the employer has determined are subject to coverage by the process safety management standard. Consideration should first be given to those processes with the potential of adversely affecting the largest number of employees. This prioritizing should consider the potential severity of a chemical release, the number of potentially affected employees, the operating history of the process such as the frequency of chemical releases, the age of the process and any other relevant factors. These factors would suggest a ranking order and would suggest either using a weighing factor system or a systematic ranking method. The use of a preliminary hazard analysis would assist an employer in determining which process should be of the highest priority and thereby the employer would obtain the greatest improvement in safety at the facility. Detailed guidance on the content and application of process hazard analysis methodologies is available from the American Institute of Chemical Engineers' Center for Chemical Process Safety (see WAC 296-67-293, Appendix D).

(5) Operating procedures and practices. Operating procedures describe tasks to be performed, data to be recorded, operating conditions to be maintained, samples to be collected, and safety and health precautions to be taken. The procedures need to be technically accurate, understandable to employees, and revised periodically to ensure that they reflect current operations. The process safety information package is to be used as a resource to better assure that the operating procedures and practices are consistent with the known hazards of the chemicals in the process and that the operating parameters are accurate. Operating procedures should be reviewed by engineering staff and operating per-

sonnel to ensure that they are accurate and provide practical instructions on how to actually carry out job duties safely. Operating procedures will include specific instructions or details on what steps are to be taken or followed in carrying out the stated procedures. These operating instructions for each procedure should include the applicable safety precautions and should contain appropriate information on safety implications. For example, the operating procedures addressing operating parameters will contain operating instructions about pressure limits, temperature ranges, flow rates, what to do when an upset condition occurs, what alarms and instruments are pertinent if an upset condition occurs, and other subjects. Another example of using operating instructions to properly implement operating procedures is in starting up or shutting down the process. In these cases, different parameters will be required from those of normal operation. These operating instructions need to clearly indicate the distinctions between startup and normal operations such as the appropriate allowances for heating up a unit to reach the normal operating parameters. Also the operating instructions need to describe the proper method for increasing the temperature of the unit until the normal operating temperature parameters are achieved. Computerized process control systems add complexity to operating instructions. These operating instructions need to describe the logic of the software as well as the relationship between the equipment and the control system; otherwise, it may not be apparent to the operator. Operating procedures and instructions are important for training operating personnel. The operating procedures are often viewed as the standard operating practices (SOPs) for operations. Control room personnel and operating staff, in general, need to have a full understanding of operating procedures. If workers are not fluent in English then procedures and instructions need to be prepared in a second language understood by the workers. In addition, operating procedures need to be changed when there is a change in the process as a result of the management of change procedures. The consequences of operating procedure changes need to be fully evaluated and the information conveyed to the personnel. For example, mechanical changes to the process made by the maintenance department (like changing a valve from steel to brass or other subtle changes) need to be evaluated to determine if operating procedures and practices also need to be changed. All management of change actions must be coordinated and integrated with current operating procedures and operating personnel must be oriented to the changes in procedures before the change is made. When the process is shut down in order to make a change, then the operating procedures must be updated before startup of the process. Training in how to handle upset conditions must be accomplished as well as what operating personnel are to do in emergencies such as when a pump seal fails or a pipeline ruptures. Communication between operating personnel and workers performing work within the process area, such as nonroutine tasks, also must be maintained. The hazards of the tasks are to be conveyed to operating personnel in accordance with established procedures and to those performing the actual tasks. When the work is completed, operating personnel should be informed to provide closure on the job.

(6) Employee training. All employees, including maintenance and contractor employees, involved with highly hazardous chemicals need to fully understand the safety and health hazards of the chemicals and processes they work with for the protection of themselves, their fellow employees and the citizens of nearby communities. Training conducted in compliance with WAC 296-800-170, chemical hazard communication program standard, will help employees to be more knowledgeable about the chemicals they work with as well as familiarize them with reading and understanding MSDS. However, additional training in subjects such as operating procedures and safety work practices, emergency evacuation and response, safety procedures, routine and non-routine work authorization activities, and other areas pertinent to process safety and health will need to be covered by an employer's training program. In establishing their training programs, employers must clearly define the employees to be trained and what subjects are to be covered in their training. Employers in setting up their training program will need to clearly establish the goals and objectives they wish to achieve with the training that they provide to their employees. The learning goals or objectives should be written in clear measurable terms before the training begins. These goals and objectives need to be tailored to each of the specific training modules or segments. Employers should describe the important actions and conditions under which the employee will demonstrate competence or knowledge as well as what is acceptable performance. Hands-on-training where employees are able to use their senses beyond listening, will enhance learning. For example, operating personnel, who will work in a control room or at control panels, would benefit by being trained at a simulated control panel or panels. Upset conditions of various types could be displayed on the simulator, and then the employee could go through the proper operating procedures to bring the simulator panel back to the normal operating parameters. A training environment could be created to help the trainee feel the full reality of the situation but, of course, under controlled conditions. This realistic type of training can be very effective in teaching employees correct procedures while allowing them to also see the consequences of what might happen if they do not follow established operating procedures. Other training techniques using videos or on-the-job training can also be very effective for teaching other job tasks, duties, or other important information. An effective training program will allow the employee to fully participate in the training process and to practice their skill or knowledge. Employers need to periodically evaluate their training programs to see if the necessary skills, knowledge, and routines are being properly understood and implemented by their trained employees. The means or methods for evaluating the training should be developed along with the training program goals and objectives. Training program evaluation will help employers to determine the amount of training their employees understood, and whether the desired results were obtained. If, after the evaluation, it appears that the trained employees are not at the level of knowledge and skill that was expected, the employer will need to revise the training program, provide retraining, or provide more frequent refresher training sessions until the deficiency is resolved. Those who conducted the training and those who received the training

should also be consulted as to how best to improve the training process. If there is a language barrier, the language known to the trainees should be used to reinforce the training messages and information. Careful consideration must be given to assure that employees including maintenance and contract employees receive current and updated training. For example, if changes are made to a process, impacted employees must be trained in the changes and understand the effects of the changes on their job tasks (e.g., any new operating procedures pertinent to their tasks). Additionally, as already discussed the evaluation of the employee's absorption of training will certainly influence the need for training.

(7) Contractors. Employers who use contractors to perform work in and around processes that involve highly hazardous chemicals, will need to establish a screening process so that they hire and use contractors who accomplish the desired job tasks without compromising the safety and health of employees at a facility. For contractors, whose safety performance on the job is not known to the hiring employer, the employer will need to obtain information on injury and illness rates and experience and should obtain contractor references. Additionally, the employer must assure that the contractor has the appropriate job skills, knowledge and certifications (such as for pressure vessel welders). Contractor work methods and experiences should be evaluated. For example, does the contractor conducting demolition work swing loads over operating processes or does the contractor avoid such hazards? Maintaining a site injury and illness log for contractors is another method employers must use to track and maintain current knowledge of work activities involving contract employees working on or adjacent to covered processes. Injury and illness logs of both the employer's employees and contract employees allow an employer to have full knowledge of process injury and illness experience. This log will also contain information which will be of use to those auditing process safety management compliance and those involved in incident investigations. Contract employees must perform their work safely. Considering that contractors often perform very specialized and potentially hazardous tasks such as confined space entry activities and nonroutine repair activities it is quite important that their activities be controlled while they are working on or near a covered process. A permit system or work authorization system for these activities would also be helpful to all affected employers. The use of a work authorization system keeps an employer informed of contract employee activities, and as a benefit the employer will have better coordination and more management control over the work being performed in the process area. A well run and well maintained process where employee safety is fully recognized will benefit all of those who work in the facility whether they be contract employees or employees of the owner.

(8) Prestartup safety. For new processes, the employer will find a PHA helpful in improving the design and construction of the process from a reliability and quality point of view. The safe operation of the new process will be enhanced by making use of the PHA recommendations before final installations are completed. P&IDs are to be completed along with having the operating procedures in place and the operating staff trained to run the process before startup. The initial

startup procedures and normal operating procedures need to be fully evaluated as part of the prestart review to assure a safe transfer into the normal operating mode for meeting the process parameters. For existing processes that have been shutdown for turnaround, or modification, etc., the employer must assure that any changes other than "replacement in kind" made to the process during shutdown go through the management of change procedures. P&IDs will need to be updated as necessary, as well as operating procedures and instructions. If the changes made to the process during shutdown are significant and impact the training program, then operating personnel as well as employees engaged in routine and nonroutine work in the process area may need some refresher or additional training in light of the changes. Any incident investigation recommendations, compliance audits or PHA recommendations need to be reviewed as well to see what impacts they may have on the process before beginning the startup.

(9) Mechanical integrity. Employers will need to review their maintenance programs and schedules to see if there are areas where "breakdown" maintenance is used rather than an ongoing mechanical integrity program. Equipment used to process, store, or handle highly hazardous chemicals needs to be designed, constructed, installed, and maintained to minimize the risk of releases of such chemicals. This requires that a mechanical integrity program be in place to assure the continued integrity of process equipment. Elements of a mechanical integrity program include the identification and categorization of equipment and instrumentation, inspections and tests, testing and inspection frequencies, development of maintenance procedures, training of maintenance personnel, the establishment of criteria for acceptable test results, documentation of test and inspection results, and documentation of manufacturer recommendations as to meantime to failure for equipment and instrumentation. The first line of defense an employer has available is to operate and maintain the process as designed, and to keep the chemicals contained. This line of defense is backed up by the next line of defense which is the controlled release of chemicals through venting to scrubbers or flares, or to surge or overflow tanks which are designed to receive such chemicals, etc. These lines of defense are the primary lines of defense or means to prevent unwanted releases. The secondary lines of defense would include fixed fire protection systems like sprinklers, water spray, or deluge systems, monitor guns, etc., dikes, designed drainage systems, and other systems which would control or mitigate hazardous chemicals once an unwanted release occurs. These primary and secondary lines of defense are what the mechanical integrity program needs to protect and strengthen these primary and secondary lines of defenses where appropriate. The first step of an effective mechanical integrity program is to compile and categorize a list of process equipment and instrumentation for inclusion in the program. This list would include pressure vessels, storage tanks, process piping, relief and vent systems, fire protection system components, emergency shutdown systems, and alarms and interlocks and pumps. For the categorization of instrumentation and the listed equipment the employer would prioritize which pieces of equipment require closer scrutiny than others. Meantime to failure of various instrumentation and

equipment parts would be known from the manufacturer's data or the employer's experience with the parts, which would then influence the inspection and testing frequency and associated procedures. Also, applicable codes and standards such as the National Board Inspection Code, or those from the American Society for Testing and Material, American Petroleum Institute, National Fire Protection Association, American National Standards Institute, American Society of Mechanical Engineers, and other groups, provide information to help establish an effective testing and inspection frequency, as well as appropriate methodologies. The applicable codes and standards provide criteria for external inspections for such items as foundation and supports, anchor bolts, concrete or steel supports, guy wires, nozzles and sprinklers, pipe hangers, grounding connections, protective coatings and insulation, and external metal surfaces of piping and vessels, etc. These codes and standards also provide information on methodologies for internal inspection, and a frequency formula based on the corrosion rate of the materials of construction. Also, erosion both internal and external needs to be considered along with corrosion effects for piping and valves. Where the corrosion rate is not known, a maximum inspection frequency is recommended, and methods of developing the corrosion rate are available in the codes. Internal inspections need to cover items such as vessel shell, bottom and head; metallic linings; nonmetallic linings; thickness measurements for vessels and piping; inspection for erosion, corrosion, cracking and bulges; internal equipment like trays, baffles, sensors, and screens for erosion, corrosion or cracking and other deficiencies. Some of these inspections may be performed by state or local government inspectors under state and local statutes. However, each employer needs to develop procedures to ensure that tests and inspections are conducted properly and that consistency is maintained even where different employees may be involved. Appropriate training is to be provided to maintenance personnel to ensure that they understand the preventive maintenance program procedures, safe practices, and the proper use and application of special equipment or unique tools that may be required. This training is part of the overall training program called for in the standard. A quality assurance system is needed to help ensure that the proper materials of construction are used, that fabrication and inspection procedures are proper, and that installation procedures recognize field installation concerns. The quality assurance program is an essential part of the mechanical integrity program and will help to maintain the primary and secondary lines of defense that have been designed into the process to prevent unwanted chemical releases or those which control or mitigate a release. "As built" drawings, together with certifications of coded vessels and other equipment, and materials of construction need to be verified and retained in the quality assurance documentation. Equipment installation jobs need to be properly inspected in the field for use of proper materials and procedures and to assure that qualified craftsmen are used to do the job. The use of appropriate gaskets, packing, bolts, valves, lubricants, and welding rods need to be verified in the field. Also procedures for installation of safety devices need to be verified, such as the torque on the bolts on ruptured disc installations, uniform torque on flange bolts, proper installation of pump seals, etc.

If the quality of parts is a problem, it may be appropriate to conduct audits of the equipment supplier's facilities to better assure proper purchases of required equipment which is suitable for its intended service. Any changes in equipment that may become necessary will need to go through the management of change procedures.

(10) Nonroutine work authorizations. Nonroutine work which is conducted in process areas needs to be controlled by the employer in a consistent manner. The hazards identified involving the work that is to be accomplished must be communicated to those doing the work, but also to those operating personnel whose work could affect the safety of the process. A work authorization notice or permit must have a procedure that describes the steps the maintenance supervisor, contractor representative or other person needs to follow to obtain the necessary clearance to get the job started. The work authorization procedures need to reference and coordinate, as applicable, lockout/tagout procedures, line breaking procedures, confined space entry procedures and hot work authorizations. This procedure also needs to provide clear steps to follow once the job is completed in order to provide closure for those that need to know the job is now completed and equipment can be returned to normal.

(11) Managing change. To properly manage changes to process chemicals, technology, equipment and facilities, one must define what is meant by change. In this process safety management standard, change includes all modifications to equipment, procedures, raw materials and processing conditions other than "replacement in kind." These changes need to be properly managed by identifying and reviewing them prior to implementation of the change. For example, the operating procedures contain the operating parameters (pressure limits, temperature ranges, flow rates, etc.) and the importance of operating within these limits. While the operator must have the flexibility to maintain safe operation within the established parameters, any operation outside of these parameters requires review and approval by a written management of change procedure. Management of change covers such as changes in process technology and changes to equipment and instrumentation. Changes in process technology can result from changes in production rates, raw materials, experimentation, equipment unavailability, new equipment, new product development, change in catalyst and changes in operating conditions to improve yield or quality. Equipment changes include among others change in materials of construction, equipment specifications, piping prearrangements, experimental equipment, computer program revisions and changes in alarms and interlocks. Employers need to establish means and methods to detect both technical changes and mechanical changes. Temporary changes have caused a number of catastrophes over the years, and employers need to establish ways to detect temporary changes as well as those that are permanent. It is important that a time limit for temporary changes be established and monitored since, without control, these changes may tend to become permanent. Temporary changes are subject to the management of change provisions. In addition, the management of change procedures are used to insure that the equipment and procedures are returned to their original or designed conditions at the end of the temporary change. Proper documentation and review of these changes is

invaluable in assuring that the safety and health considerations are being incorporated into the operating procedures and the process. Employers may wish to develop a form or clearance sheet to facilitate the processing of changes through the management of change procedures. A typical change form may include a description and the purpose of the change, the technical basis for the change, safety and health considerations, documentation of changes for the operating procedures, maintenance procedures, inspection and testing, P&IDs, electrical classification, training and communications, prestartup inspection, duration if a temporary change, approvals and authorization. Where the impact of the change is minor and well understood, a check list reviewed by an authorized person with proper communication to others who are affected may be sufficient. However, for a more complex or significant design change, a hazard evaluation procedure with approvals by operations, maintenance, and safety departments may be appropriate. Changes in documents such as P&IDs, raw materials, operating procedures, mechanical integrity programs, electrical classifications, etc., need to be noted so that these revisions can be made permanent when the drawings and procedure manuals are updated. Copies of process changes need to be kept in an accessible location to ensure that design changes are available to operating personnel as well as to PHA team members when a PHA is being done or one is being updated.

(12) Investigation of incidents. Incident investigation is the process of identifying the underlying causes of incidents and implementing steps to prevent similar events from occurring. The intent of an incident investigation is for employers to learn from past experiences and thus avoid repeating past mistakes. The incidents for which WISHA expects employers to become aware and to investigate are the types of events which result in or could reasonably have resulted in a catastrophic release. Some of the events are sometimes referred to as "near misses," meaning that a serious consequence did not occur, but could have. Employers need to develop in-house capability to investigate incidents that occur in their facilities. A team needs to be assembled by the employer and trained in the techniques of investigation including how to conduct interviews of witnesses, needed documentation and report writing. A multidisciplinary team is better able to gather the facts of the event and to analyze them and develop plausible scenarios as to what happened, and why. Team members should be selected on the basis of their training, knowledge and ability to contribute to a team effort to fully investigate the incident. Employees in the process area where the incident occurred should be consulted, interviewed, or made a member of the team. Their knowledge of the events form a significant set of facts about the incident which occurred. The report, its findings and recommendations are to be shared with those who can benefit from the information. The cooperation of employees is essential to an effective incident investigation. The focus of the investigation should be to obtain facts, and not to place blame. The team and the investigation process should clearly deal with all involved individuals in a fair, open, and consistent manner.

(13) Emergency preparedness. Each employer must address what actions employees are to take when there is an unwanted release of highly hazardous chemicals. Emergency

preparedness or the employer's tertiary (third) lines of defense are those that will be relied on along with the secondary lines of defense when the primary lines of defense which are used to prevent an unwanted release fail to stop the release. Employers will need to decide if they want employees to handle and stop small or minor incidental releases. Whether they wish to mobilize the available resources at the plant and have them brought to bear on a more significant release. Or whether employers want their employees to evacuate the danger area and promptly escape to a preplanned safe zone area, and allow the local community emergency response organizations to handle the release. Or whether the employer wants to use some combination of these actions. Employers will need to select how many different emergency preparedness or tertiary lines of defense they plan to have and then develop the necessary plans and procedures, and appropriately train employees in their emergency duties and responsibilities and then implement these lines of defense. Employers at a minimum must have an emergency action plan which will facilitate the prompt evacuation of employees due to an unwanted release of a highly hazardous chemical. This means that the employer will have a plan that will be activated by an alarm system to alert employees when to evacuate and, that employees who are physically impaired, will have the necessary support and assistance to get them to the safe zone as well. The intent of these requirements is to alert and move employees to a safe zone quickly. Delaying alarms or confusing alarms are to be avoided. The use of process control centers or similar process buildings in the process area as safe areas is discouraged. Recent catastrophes have shown that a large life loss has occurred in these structures because of where they have been sited and because they are not necessarily designed to withstand over-pressures from shockwaves resulting from explosions in the process area. Unwanted incidental releases of highly hazardous chemicals in the process area must be addressed by the employer as to what actions employees are to take. If the employer wants employees to evacuate the area, then the emergency action plan will be activated. For outdoor processes where wind direction is important for selecting the safe route to a refuge area, the employer should place a wind direction indicator such as a wind sock or pennant at the highest point that can be seen throughout the process area. Employees can move in the direction of cross wind to upwind to gain safe access to the refuge area by knowing the wind direction. If the employer wants specific employees in the release area to control or stop the minor emergency or incidental release, these actions must be planned for in advance and procedures developed and implemented. Preplanning for handling incidental releases for minor emergencies in the process area needs to be done, appropriate equipment for the hazards must be provided, and training conducted for those employees who will perform the emergency work before they respond to handle an actual release. The employer's training program, including the hazard communication standard training is to address the training needs for employees who are expected to handle incidental or minor releases. Preplanning for releases that are more serious than incidental releases is another important line of defense to be used by the employer. When a serious release of a highly hazardous chemical occurs, the employer

through preplanning will have determined in advance what actions employees are to take. The evacuation of the immediate release area and other areas as necessary would be accomplished under the emergency action plan. If the employer wishes to use plant personnel such as a fire brigade, spill control team, a hazardous materials team, or use employees to render aid to those in the immediate release area and control or mitigate the incident, these actions are covered by WAC 296-62-300, the hazardous waste operations and emergency response (HAZWOPER) standard. If outside assistance is necessary, such as through mutual aid agreements between employers or local government emergency response organizations, these emergency responders are also covered by HAZWOPER. The safety and health protections required for emergency responders are the responsibility of their employers and of the on-scene incident commander. Responders may be working under very hazardous conditions and therefore the objective is to have them competently led by an on-scene incident commander and the commander's staff, properly equipped to do their assigned work safely, and fully trained to carry out their duties safely before they respond to an emergency. Drills, training exercises, or simulations with the local community emergency response planners and responder organizations is one means to obtain better preparedness. This close cooperation and coordination between plant and local community emergency preparedness managers will also aid the employer in complying with the Environmental Protection Agency's risk management plan criteria. One effective way for medium to large facilities to enhance coordination and communication during emergencies for on plant operations and with local community organizations is for employers to establish and equip an emergency control center. The emergency control center would be sited in a safe zone area so that it could be occupied throughout the duration of an emergency. The center would serve as the major communication link between the on-scene incident commander and plant or corporate management as well as with the local community officials. The communication equipment in the emergency control center should include a network to receive and transmit information by telephone, radio, or other means. It is important to have a backup communication network in case of power failure or one communication means fails. The center should also be equipped with the plant layout and community maps, utility drawings including fire water, emergency lighting, appropriate reference materials such as a government agency notification list, company personnel phone list, SARA Title III reports and material safety data sheets, emergency plans and procedures manual, a listing with the location of emergency response equipment, mutual aid information, and access to meteorological or weather condition data and any dispersion modeling data.

(14) Compliance audits. Employers need to select a trained individual or assemble a trained team of people to audit the process safety management system and program. A small process or plant may need only one knowledgeable person to conduct an audit. The audit is to include an evaluation of the design and effectiveness of the process safety management system and a field inspection of the safety and health conditions and practices to verify that the employer's systems are effectively implemented. The audit should be conducted

or led by a person knowledgeable in audit techniques and who is impartial towards the facility or area being audited. The essential elements of an audit program include planning, staffing, conducting the audit, evaluation and corrective action, follow-up and documentation. Planning in advance is essential to the success of the auditing process. Each employer needs to establish the format, staffing, scheduling, and verification methods prior to conducting the audit. The format should be designed to provide the lead auditor with a procedure or checklist which details the requirements of each section of the standard. The names of the audit team members should be listed as part of the format as well. The checklist, if properly designed, could serve as the verification sheet which provides the auditor with the necessary information to expedite the review and assure that no requirements of the standard are omitted. This verification sheet format could also identify those elements that will require evaluation or a response to correct deficiencies. This sheet could also be used for developing the follow-up and documentation requirements. The selection of effective audit team members is critical to the success of the program. Team members should be chosen for their experience, knowledge, and training and should be familiar with the processes and with auditing techniques, practices, and procedures. The size of the team will vary depending on the size and complexity of the process under consideration. For a large, complex, highly instrumented plant, it may be desirable to have team members with expertise in process engineering and design, process chemistry, instrumentation and computer controls, electrical hazards and classifications, safety and health disciplines, maintenance, emergency preparedness, warehousing or shipping, and process safety auditing. The team may use part-time members to provide for the depth of expertise required as well as for what is actually done or followed, compared to what is written. An effective audit includes a review of the relevant documentation and process safety information, inspection of the physical facilities, and interviews with all levels of plant personnel. Utilizing the audit procedure and checklist developed in the preplanning stage, the audit team can systematically analyze compliance with the provisions of the standard and any other corporate policies that are relevant. For example, the audit team will review all aspects of the training program as part of the overall audit. The team will review the written training program for adequacy of content, frequency of training, effectiveness of training in terms of its goals and objectives as well as to how it fits into meeting the standard's requirements, documentation, etc. Through interviews, the team can determine the employee's knowledge and awareness of the safety procedures, duties, rules, emergency response assignments, etc. During the inspection, the team can observe actual practices such as safety and health policies, procedures, and work authorization practices. This approach enables the team to identify deficiencies and determine where corrective actions or improvements are necessary. An audit is a technique used to gather sufficient facts and information, including statistical information, to verify compliance with standards. Auditors should select as part of their preplanning a sample size sufficient to give a degree of confidence that the audit reflects the level of compliance with the standard. The audit team, through this systematic analy-

sis, should document areas which require corrective action as well as those areas where the process safety management system is effective and working in an effective manner. This provides a record of the audit procedures and findings, and serves as a baseline of operation data for future audits. It will assist future auditors in determining changes or trends from previous audits. Corrective action is one of the most important parts of the audit. It includes not only addressing the identified deficiencies, but also planning, followup, and documentation. The corrective action process normally begins with a management review of the audit findings. The purpose of this review is to determine what actions are appropriate, and to establish priorities, timetables, resource allocations, and requirements and responsibilities. In some cases, corrective action may involve a simple change in procedure or minor maintenance effort to remedy the concern. Management of change procedures need to be used, as appropriate, even for what may seem to be a minor change. Many of the deficiencies can be acted on promptly, while some may require engineering studies or in-depth review of actual procedures and practices. There may be instances where no action is necessary and this is a valid response to an audit finding. All actions taken, including an explanation where no action is taken on a finding, needs to be documented as to what was done and why. It is important to assure that each deficiency identified is addressed, the corrective action to be taken noted, and the audit person or team responsible be properly documented by the employer. To control the corrective action process, the employer should consider the use of a tracking system. This tracking system might include periodic status reports shared with affected levels of management, specific reports such as completion of an engineering study, and a final implementation report to provide closure for audit findings that have been through management of change, if appropriate, and then shared with affected employees and management. This type of tracking system provides the employer with the status of the corrective action. It also provides the documentation required to verify that appropriate corrective actions were taken on deficiencies identified in the audit.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-67-291, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-21-075 (Order 93-06), § 296-67-291, filed 10/20/93, effective 12/1/93; 92-17-022 (Order 92-06), § 296-67-291, filed 8/10/92, effective 9/10/92.]

Chapter 296-78 WAC

SAFETY STANDARDS FOR SAWMILLS AND WOODWORKING OPERATIONS

WAC

296-78-500	Foreword.
296-78-515	Management's responsibility.
296-78-540	First-aid training and certification.
296-78-545	First-aid supplies.
296-78-56501	Log dumps and ponds.
296-78-56505	Boats and mechanical devices on waters.
296-78-670	Glue machines.
296-78-71001	General.
296-78-71003	Floor and wall openings.
296-78-71009	Stairways and ladders.
296-78-71011	Egress and exit.
296-78-71015	Tanks and chemicals.
296-78-71017	Dry kilns.
296-78-71019	Exhaust systems.
296-78-71023	Lighting.

296-78-730	Electrical service and equipment.
296-78-735	Elevators, moving walks.
296-78-795	Crane cages.
296-78-84005	Dry kilns.

WAC 296-78-500 Foreword. (1) General requirements. The chapter 296-78 WAC shall apply to and include safety requirements for all installations where the primary manufacturing of wood building products takes place. The installations may be a permanent fixed establishment or a portable operation. These operations shall include but are not limited to log and lumber handling, sawing, trimming and planing, plywood or veneer manufacturing, canting operations, waste or residual handling, operation of dry kilns, finishing, shipping, storage, yard and yard equipment, and for power tools and affiliated equipment used in connection with such operation. WAC 296-78-450 shall apply to shake and shingle manufacturing. The provisions of WAC 296-78-500 through 296-78-84011 are also applicable in shake and shingle manufacturing except in instances of conflict with the requirements of WAC 296-78-705. (Rev. 1-28-76.)

(2) 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 296-78 WAC, shall apply.

(3) 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 chapter 296-350 WAC.

(4) No safety program will run itself. To be successful, the wholehearted interest of the employees' group (labor unions) and management must not only be behind the program, but the fact must also be readily apparent to all.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-500, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-500, filed 8/27/81.]

WAC 296-78-515 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) The employer shall develop and maintain a chemical hazard communication program as required by WAC 296-

800-170, 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.

(3) Management shall not assign mechanics, millwrights, or other persons to work on equipment by themselves when there is a probability that the person could fall from elevated work locations or equipment or that a person could be pinned down by heavy parts or equipment so that they could not call for or obtain assistance if the need arises.

Note: This subsection does not apply to operators of motor vehicles, watchperson or certain other jobs which, by their nature, are singular employee assignments. However, a definite procedure for checking the welfare of all employees during their working hours shall be instituted and all employees so advised.

(4) 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 if available 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.

(5) 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 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 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.

(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 inpatient 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 a department 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.

(6) A system for maintaining records of occupational injuries and illnesses as prescribed by chapter 296-27 WAC.

Note: Recordable cases include:

- (a) Every occupational death.
- (b) Every industrial illness.
- (c) Every occupational injury that involves one of the following:
 - (i) Unconsciousness.
 - (ii) Inability to perform all phases of regular job.
 - (iii) Inability to work full time on regular job.
 - (iv) Temporary assignment to another job.
 - (v) Medical treatment beyond first aid.

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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-515, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-78-515, filed 9/30/94, effective 11/20/94; 91-24-017 (Order 91-07), § 296-78-515, filed 11/22/91, effective 12/24/91; 89-11-035 (Order 89-03), § 296-78-515, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240, 81-18-029 (Order 81-21), § 296-78-515, filed 8/27/81.]

WAC 296-78-540 First-aid training and certification.

The employer must ensure that first-aid trained personnel are available to help employees who are injured or who become acutely ill on the job. The employer must meet this requirement by maintaining first-aid trained staff on the job site. The employer must ensure that:

(1) Each person in charge of employees has first-aid training; or another person with first-aid training is present or available to the employees. Such training must be successfully completed every two years as required in WAC 296-800-150;

(2) Documentation of first-aid training is kept as required in WAC 296-800-150;

(3) Emergency telephone numbers are adequately posted;

(4) First-aid training includes the core elements contained in WAC 296-800-150.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-540, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-78-540, filed 12/7/99, effective 2/1/00. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240, 81-18-029 (Order 81-21), § 296-78-540, filed 8/27/81.]

WAC 296-78-545 First-aid supplies. The first-aid kits and supplies requirements of WAC 296-800-150 apply within the scope of chapter 296-78 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-545, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-78-545, filed 12/7/99, effective 2/1/00. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240, 81-18-029 (Order 81-21), § 296-78-545, filed 8/27/81.]

WAC 296-78-56501 Log dumps and ponds. (1) Log dumps, booms, ponds or storage areas, if used at night, shall be illuminated in accordance with the requirements of WAC 296-800-210, safety and health core rules.

(2) A log dump shall be constructed at each log pond or decking ground. Log trucks shall not be unloaded by use of peavies or by hand.

(a) The roadbed shall be of hard packed gravel, heavy planking or equivalent material and shall be maintained at all times. Roadbeds at log dumps shall be of width and evenness to insure safe operation of equipment.

(b) A mechanical unloading device shall be provided and used for unloading logs. Log unloading areas shall be arranged and maintained to provide a safe working area.

(c) Signs prohibiting unauthorized foot or vehicle traffic in log unloading and storage areas shall be posted.

(d) At no time shall one person be permitted to work alone on a log dump, a booming or rafting grounds, or a log pond.

(3) Water log dumps. Ungrounded electrically powered hoists using handheld remote control in grounded locations, such as log dumps or mill log lifts, shall be actuated by circuits operating at less than 50 volts to ground.

(4)(a) A brow log, skid timbers or the equivalent shall be installed on all log dumps.

(b) Where logs are unloaded onto skids, sufficient space shall be provided between the top of the skids and the ground to accommodate the body of a person.

(c) All truck dumps shall be built with not more than six inches variation of level from side to side.

(5)(a) All truck log dumps shall be equipped with a positive safeguard to prevent logs from leaving the load on the side opposite the brow log. Jill pokes shall not be used on truck log dumps.

(b) Unloading lines shall be attached and tightened or other positive safeguard in place before binder chains are released at any log dump.

(c) Stakes and chocks which trip shall be constructed in such manner that the tripping mechanism that releases the stake or chocks is activated at the opposite side of the load being tripped.

(d) Binders shall be released only from the side on which the unloader operates, except when released by remote control devices or except when person making release is protected by racks or stanchions or other equivalent means.

(e) Loads on which a binder is fouled by the unloading machine shall have an extra binder or metal band of equal strength placed around the load, or the load shall be otherwise secured so that the fouled binder can be safely removed.

(f) Unloading lines, crotch lines, or equally effective means shall be arranged and used in a manner to minimize the possibility of any log swinging or rolling back.

(6)(a) In unloading operations, the operator of unloading machine shall have an unobstructed view of the vehicle and the logs being unloaded.

(b) Unloading lines shall be arranged so that it is not necessary for the employees to attach them from the pond or dump site of the load except when entire loads are lifted from the log-transporting vehicle.

(7) All log dumps shall be kept reasonably free of bark and other debris.

(8) Employees shall remain in the clear until all moving equipment has come to a complete stop.

(9) Artificial log ponds subject to unhealthy stagnation shall be drained, cleansed, and water changed at least once every six months.

(10) All employees whose regular work requires walking on logs shall wear spiked or calked shoes, except when working in snow.

(11) 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:

(i) When working behind standard height and strength guardrails;

(ii) When working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water;

(iii) When wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water;

(iv) When water depth is known to be chest-deep or less.

(b) Prior to and after each use, personal floating 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 this subsection (11), 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.

(12)(a) Wooden pike poles shall be of continuous, straight grained No. 1 material. Defective poles, blunt or dull pikes shall not be used.

(b) Aluminum or other metal poles shall not be used where hazard of coming in contact with live electric wires exists.

(13)(a) Walkways and floats shall be provided and security anchored to provide safe passage for workers.

(b) Permanent cable swifters shall be so arranged that it will not be necessary to roll boom sticks in order to attach or detach them.

(c) Inspection of cable or dogging lines shall be made as necessary to determine when repair or removal from service is necessary.

(14)(a) Decks of floats or other walkways shall be kept above the waterline at all times and shall be capable of supporting four times the load to be imposed.

(b) Floating donkeys or other power-driven machinery used on booms shall be placed on a raft or float with enough buoyancy to keep the deck above water.

(15)(a) All regular boom sticks and foot logs shall be reasonably straight, have all protruding knots and bark removed, and shall be capable of supporting above the water-

line at either end, any necessary weight of workers and equipment.

(b) Stiff booms shall be two float logs wide secured by boom chains or other connecting devices, and of a width adequate for the working needs. Walking surfaces shall be free of loose material and maintained in good repair.

(c) Boom sticks shall be fastened together with crossties or couplings.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-56501, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 89-11-035 (Order 89-03), § 296-78-56501, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56501, filed 8/27/81.]

WAC 296-78-56505 Boats and mechanical devices on waters. (1) The applicable provisions of the Standard for Fire Protection for Motorcraft, NFPA No. 302-1994, shall be complied with. Prior to starting the boat motor, any spilled fuel shall be removed and vapors shall be exhausted from any area in which they may accumulate.

(2) The bilge area shall be kept clean and oil, grease, fuel, or highly combustible materials shall not be allowed to accumulate.

(3) Adequate ventilation equipment shall be provided and used for the bilge area to prevent the accumulation of toxic or explosive gases or vapors.

(4) Adequate ventilation equipment shall be provided and used for the cabin area on enclosed cabin-type boats to prevent an accumulation of harmful gases or vapors.

(5) Deck and cabin lighting shall be provided and used where necessary to provide safe levels of illumination aboard boats. Boats operated during the period from sunset to sunrise, or in conditions of restricted visibility, shall display navigation lights as required by the United States Coast Guard. Searchlights or floodlights shall be provided to facilitate safe navigation and to illuminate working or boarding areas adjacent to the craft.

(6) Decks of pond boats shall be covered with nonslip material. On craft used by workers wearing calked shoes, all areas where the operator or workers must stand or walk shall be made of or be covered with wood or other suitable matting or nonslip material and such covering shall be maintained in good condition.

(7) Each boat shall be provided with a fire extinguisher and life ring with at least fifty feet of one-fourth inch line attached. On log broncs, boomscoters, or other small boomboats where all occupants are required to wear life saving devices and a life ring would present a tripping hazard, the life ring may be omitted.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(8)(a) Along docks, walkways, or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with at least ninety feet of one-fourth inch line attached, shall be provided. The life rings shall be spaced at intervals not to exceed two hundred 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 at least ninety feet of line attached,

shall be provided in the immediate vicinity of the work assigned.

(c) When work is assigned over water where the vertical drop from the accidental fall would exceed fifty feet, special arrangements shall be made with and approved by the department of labor and industries prior to such assignment.

(d) Lines attached to life rings on fixed locations shall be at least ninety feet in length, at least one-fourth inch in diameter, and have a minimum breaking strength of five hundred pounds. Similar lines attached to life rings on boats shall be at least fifty feet in length.

(e) Life rings must be United States Coast Guard approved thirty-inch size.

(f) Life rings and attached lines shall be maintained to retain at least seventy-five percent of their designed buoyancy and strength.

(g) Log broncs, boomscoters, and boomboats shall not be loaded with personnel or equipment so as to adversely affect their stability or seaworthiness.

(h) Boats shall not be operated at an excessive speed or handled recklessly.

(i) Boat fuel shall be transported and stored in approved containers. Refer to WAC 296-24-58501(19) for definition of approved.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-78-56505, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-78-56505, filed 8/20/96, effective 10/15/96; 88-23-054 (Order 88-25), § 296-78-56505, filed 11/14/88. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-56505, filed 8/27/81.]

WAC 296-78-670 Glue machines. (1) Personal protective equipment as required by the safety and health core rules, WAC 296-800-160, and the general occupational health standard, WAC 296-62-11021, and proper washing facilities with noncaustic soap and sterilizers, shall be provided for all employees handling glue. Rubber gloves and other personal equipment must be sterilized when transferred from one person to another.

(2) Glue spreaders shall be enclosed on the in-running side, leaving only sufficient space to insert the stock.

(3) All glue spreaders shall be equipped with a panic bar or equivalent type device that can be reached from either the infeed or outfeed side of the spreader to shut-off the power in an emergency situation. Such device shall be installed on existing glue spreaders no later than April 1, 1982, and be standard equipment on any glue spreader purchased after January 1, 1982.

(4) All glue mixing and handling rooms where located above work areas shall have water tight floors.

(5) All glue rooms shall be provided with ventilation in accordance with WAC 296-62-110 through 296-62-11013, of the general occupational health standard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-670, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-78-670, filed 9/30/94, effective 11/20/94. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-670, filed 8/27/81.]

WAC 296-78-71001 General. (1) Construction when not specifically covered in these standards shall be governed

by such other standards adopted by the department of labor and industries as may apply.

(2) All buildings, docks, tramways, walkways, log dumps and other structures shall be so designed, constructed, and maintained as to provide a safety factor of four. This means that all members shall be capable of supporting four times the maximum load to be imposed. This provision refers to buildings, docks and so forth 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.

(3) Basements on ground floors under mills shall be evenly surfaced, free from unnecessary obstructions and debris, and provided with lighting facilities in compliance with the requirements of the safety and health core rules, WAC 296-800-210.

(4) All engines, motors, transmission machinery or operating equipment installed in mill basements or ground floors shall be equipped with standard safeguards for the protection of workers.

(5) Hazard marking. Physical hazard marking shall be as specified in WAC 296-24-135 through 296-24-13503 of the general safety and health standards.

(6) Flooring of buildings, ramps and walkways not subject to supporting motive equipment shall be of not less than two-inch wood planking or material of equivalent structural strength.

(7) Flooring of buildings, ramps, docks, trestles and other structure required to support motive equipment shall be of not less than full two and one-half inch wood planing or material of equivalent structural strength. However, where flooring is covered by steel floor plates, two inch wood planking or material of equivalent structural strength may be used.

(8) Walkways, docks, and platforms.

(a) Walkways, docks and platforms shall be constructed and maintained in accordance with the requirements of WAC 296-24-735 through 296-24-75011 and WAC 296-800-270.

(b) Maintenance. Walkways shall be evenly floored and kept in good repair.

(c) Where elevated platforms are used they shall be equipped with stairways or ladders in accordance with WAC 296-24-765 through 296-24-81013, and WAC 296-800-250 and 296-800-290.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71001, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71001, filed 8/27/81.]

WAC 296-78-71003 Floor and wall openings. (1) All floor and wall openings either temporary or permanent, shall be protected as required by WAC 296-24-750 through 296-24-75011 and WAC 296-800-260.

(2) 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 telltails shall be installed to hang within five and one-half feet of the ground or floor level.

(3) 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71003, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-78-71003, filed 8/20/96, effective 10/15/96. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71003, filed 8/27/81.]

WAC 296-78-71009 Stairways and ladders. (1) Stairways shall be used in preference over ladders wherever possible. Stairways or ladders, whichever is used, shall be constructed and maintained in accordance with the provisions of WAC 296-24-75009 through 296-24-81013, and WAC 296-800-250 and 296-800-290.

(2) Doors shall not open directly on a flight of stairs.

(3) Permanent ladders shall be fastened securely at both top and bottom.

(4) Portable ladders shall not be used upon footing other than suitable type.

(5) Hooks or other means of securing portable ladders when in use, shall be provided.

(6) Portable ladders shall not be used for oiling machinery which is in motion.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71009, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71009, filed 8/27/81.]

WAC 296-78-71011 Egress and exit. (1) In all enclosed buildings, means of egress shall be provided in accordance with the provisions of WAC 296-24-550 through 296-24-56531 and WAC 296-800-310.

(2) All swinging doors shall be provided with windows, the bottom of which shall be not more than forty-eight inches above the floor. One window shall be provided for each section of double swinging doors. All such windows shall be of shatter proof or safety glass unless otherwise protected against breakage.

(3) Outside exits shall open outward. Where sliding doors are used as exits, an inner door not less than two feet six inches by six feet shall be cut inside each of the main doors and arranged to open outward.

(4) At least two fire escapes or substantial outside stairways, shall be provided for mill buildings where the floor level is more than eight feet above the ground.

(a) Buildings over one hundred fifty feet in length shall have at least one additional fire escape or substantial outside stairway for each additional one hundred fifty feet of length or fraction thereof.

(b) Passageways to fire escapes or outside stairways shall be marked and kept free of obstructions at all times.

(c) Fire protection. The requirements of WAC 296-24-585 through 296-24-62003 of the general safety and health standard, and WAC 296-800-300 of the safety and health core rules, shall be complied with in providing the necessary fire protection for sawmills.

(d) Fire drills shall be held at least quarterly and shall be documented.

(5) Where a doorway opens upon a roadway, railroad track, or upon a tramway or dock over which vehicles travel, a barricade or other safeguard and a warning sign shall be placed to prevent workers from stepping directly into moving traffic.

(6) Tramways and trestles shall be substantially supported by piling or framed bent construction which shall be frequently inspected and maintained in good repair at all times. Tramways or trestles used both for vehicular and pedestrian traffic shall have a walkway with standard hand rail at the outer edge and shear timber on the inner edge, and shall provide three feet clearance to vehicles. When walkways cross over other thoroughfares, they shall be solidly fenced at the outer edge to a height of 42 inches over such thoroughfares.

(7) Where tramways and trestles are built over railroads they shall have a vertical clearance of twenty-two feet above the top of the rails. When constructed over carrier docks or roads, they shall have a vertical clearance of not less than six feet above the drivers foot rest on the carrier, and in no event shall this clearance be less than twelve feet from the surface of the lower roadway or dock.

(8) Walkways (either temporary or permanent) shall be not less than twenty-four inches wide and two inches thick, nominal size, securely fastened at each end. When such walkways are used on an incline the angle shall not be greater than twenty degrees from horizontal.

(9) Walkways from the shore or dock to floats or barges shall be securely fastened at the shore end only and clear space provided for the other end to adjust itself to the height of the water.

(10) Cleats of one by four inch material shall be fastened securely across walkways at uniform intervals of eighteen inches whenever the grade is sufficient to create a slipping hazard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71011, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71011, filed 8/27/81.]

WAC 296-78-71015 Tanks and chemicals. (1) All open vats and tanks into which workers may fall shall be guarded with standard railings or screen guards in all cases where such guarding is possible with regard to practical operation.

(2) Foundations of elevated tanks shall be accessible for inspections. When the tank platform is more than five feet above the ground a stairway or ladder shall be permanently attached.

(3) Every open tank over five feet in height shall be equipped with fixed standard ladders both inside and out, extending from the bottom to the rim of the tank arranged to be accessible to each other, so far as local conditions permit.

(4) The use of chemicals for treating of lumber for prevention of sap stain or mold or as preservatives, shall conform to the requirements of WAC 296-62-11021, open surface tanks.

(a) Storage, handling, and use of chemicals. Threshold limits. Employees shall not be exposed to airborne concentration of toxic dusts, vapors, mists or gases that exceed the

threshold limit values set forth in chapter 296-24 WAC, Part A-2, general safety and health standards, and chapter 296-62 WAC, Part E, general occupational health standards.

(b) Protective equipment. The use of chemicals shall be controlled so as to protect employees from harmful exposure to toxic materials. Where necessary, employees shall be provided with and required to wear such protective equipment as will afford adequate protection against harmful exposure as required by chapter 296-24 WAC, Part A-2, general safety and health standards, and chapter 296-62 WAC, Part E, general occupational health standards.

(5)(a) Means shall be provided and used to collect any excess of chemicals used in treating lumber so as to protect workers from accidental contact with harmful concentrations of toxic chemicals or fumes.

(b) Dip tanks containing flammable or combustible liquids shall be constructed, maintained and used in accordance with WAC 296-24-405 of the general safety and health standards.

(c) An evacuation plan shall be developed and implemented for all employees working in the vicinity of dip tanks using flammable and/or combustible liquids. A copy of the plan shall be available at the establishment for inspection at all times. Every employee shall be made aware of the evacuation plan and know what to do in the event of an emergency and be evacuated in accordance with the plan. The plan shall be reviewed with employees at least quarterly and documented.

(d) When automatic foam, automatic carbon dioxide or automatic dry chemical extinguishing systems are used, an alarm device shall be activated to alert employees in the dip tank area before and during the activation of the system. The following combinations of extinguishment systems when used in conjunction with the evacuation plan as stated above will be acceptable in lieu of bottom drains:

(i) A dip tank cover with an automatic foam extinguishing system under the cover, or an automatic carbon dioxide system, or an automatic dry chemical extinguishing system, or an automatic water spray extinguishing system;

(ii) An automatic dry chemical extinguishing system with an automatic carbon dioxide system or a second automatic dry chemical extinguishing system or an automatic foam extinguishing system;

(iii) An automatic carbon dioxide system with a second automatic carbon dioxide system or an automatic foam extinguishing system.

(e) The automatic water spray extinguishing systems, automatic foam extinguishing systems, and dip tank covers shall conform with the requirements of WAC 296-24-405. The automatic carbon dioxide systems and dry chemical extinguishing system shall conform with the requirements of WAC 296-24-615 and 296-24-620.

(6) Where workers are engaged in the treating of lumber with chemicals or are required to handle lumber or other materials so treated, the workers shall be provided with, at no cost to the worker, and required to use such protective equipment as will provide complete protection against contact with toxic chemicals or fumes therefrom.

(7) Sanitation requirements. The requirements of WAC 296-800-220 and 296-800-230 (safety and health core rules), shall govern sanitation practices.

(8) The sides of steam vats and soaking pits unless otherwise guarded shall extend forty-two inches above the floor level. The floor adjacent thereto shall be of nonslip construction.

(9) Large steam vats or soaking pits, divided into sections, shall be provided with substantial walkways between each section, each walkway to be provided with standard railings which may be removable if necessary.

(10) Covers shall be removed only from that portion of the steaming vats on which workers are working and a portable railing shall be placed at this point to protect the operators.

(11) Workers shall not ride or step on logs in steam vats.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71015, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-78-71015, filed 8/20/96, effective 10/15/96; 94-20-057 (Order 94-16), § 296-78-71015, filed 9/30/94, effective 11/20/94. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71015, filed 8/27/81.]

WAC 296-78-71017 Dry kilns. (1) Dry kilns shall be so constructed upon solid foundations that tracks will not sag. Dry kilns shall be provided with suitable walkways. Each kiln shall have doors that operate from the inside and be provided with escape doors of adequate height and width to accommodate an average size man, that also operates from the inside, and shall be located in or near the main door. Escape doors shall swing in the direction of exit. Kiln doors and door carriers shall be fitted with safety devices to prevent the doors or carriers from falling.

(2) Ladders. A fixed ladder, in accordance with the requirements of WAC 296-24-810 through 296-24-81013 of the general safety and health standards and WAC 296-800-290 of the safety and health core rules, or other means shall be provided to permit access to the roof. Where controls and machinery are mounted on the roof, a permanent stairway with standard handrail shall be installed in accordance with the requirements of WAC 296-800-290.

(3) A heated room shall be provided for the use of the kiln operator in inclement weather. He should remain in such room for at least ten minutes after leaving a hot kiln before going to cold outside air.

(4) Where operating pits are used, they shall be well ventilated, drained and lighted. Substantial gratings shall be installed at the kiln floor line. Steam lines shall be provided with insulation wherever exposed to contact by employees. Fans shall be enclosed by standard safeguards.

(5) Mechanical equipment. All belts, pulleys, blowers, and other exposed moving equipment used in or about kilns shall be guarded in accordance with the requirements of WAC 296-24-205 through 296-24-20533 of the general safety and health standards.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71017, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-78-71017, filed 8/20/96, effective 10/15/96. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71017, filed 8/27/81.]

WAC 296-78-71019 Exhaust systems. (1) Air requirements in buildings, where persons are habitually employed, shall meet the requirements of the general occupational health standard, WAC 296-62-100 through 296-62-11013.

(2) Where the natural ventilation is not sufficient to remove dust, fumes or vapors that create or constitute a hazard, additional means of removal shall be provided.

(3) All mills containing one or more machines whose operations create dust, shavings, chips or slivers during a period of time equal to or greater than one-fourth of the working day or shift, shall be equipped with a collecting system either continuous or automatic in action and of sufficient strength and capacity to thoroughly remove such refuse from the points of operation of the machines and the work areas.

(4) Each woodworking machine that creates dust, shavings, chips, or slivers shall be equipped with an exhaust or conveyor system located and adjusted to remove the maximum amount of refuse from the point of operation and immediate vicinity.

(5) Blower, collecting and exhaust systems shall be designed, constructed and maintained in accordance with American National Standards Z33.1 - 1961 (for the installation of blower and exhaust systems for dust, stock and vapor removal or conveying) and Z12.2 - 1962 (R1969) (code for the prevention of dust explosions in woodworking and wood flour manufacturing plants).

(6) Fans used for ventilating shall be of ample capacity, as evidenced by the performance schedules of the manufacturers, and shall be guarded when exposed to contact. Hoods, dust conveyors, dust collectors and other accessory equipment shall be large enough to insure free intake and discharge.

(7) The outlet or discharge of all ventilating equipment shall be so arranged that at no time will the dust, vapors, gases or other air borne impurities discharged, create or constitute a hazard.

(8) Where a hood is used to form a part or all of the guard required on a given machine, it shall be constructed of not less than ten U.S. gauge sheet metal, or if of cast iron it shall be not less than three-sixteenths inches in thickness.

(9) All exhaust pipes shall be of such construction and internal dimensions as to minimize the possibility of clogging. They shall be readily accessible for cleaning.

(10) All exhaust pipes shall empty into settling or dust chambers which shall effectively prevent the dust or refuse from entering any work area. Such settling or dust chambers shall be so designed and operated as to reduce to a minimum the danger of fire or dust explosions.

(11) In lieu of a general ventilating system, exhaust or blower units may be installed on the dust or fume producing machine, provided the required protection is secured thereby.

(12) When proper ventilation is not provided, and temporary hazardous conditions are therefore encountered, the employer shall furnish approved respiratory and visual equipment: Provided, however, That the exposure to such hazard shall not be for more than two hours duration. Protective measures and equipment shall meet the requirements of the general occupational health standard, chapter 296-62 WAC, Part E.

(13) Provisions for the daily removal of refuse shall be made in all operations not required to have an exhaust system, or having refuse too heavy, or bulky, or otherwise unsuitable to be handled by an exhaust system.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71019, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-78-71019, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71019, filed 8/27/81.]

WAC 296-78-71023 Lighting. The lighting and illumination requirements of the safety and health core rules, WAC 296-800-210, shall apply.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-71023, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-78-71023, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-71023, filed 8/27/81.]

WAC 296-78-730 Electrical service and equipment.

(1) Electrical service and equipment shall be constructed, maintained, inspected and operated according to chapter 296-24 WAC, General safety and health standards, Part L, and WAC 296-800-280 of the safety and health core rules.

(2) Repairs. Electrical repairs shall be made only by authorized and qualified personnel.

(3) Identification. Marks of identification on electrical equipment shall be clearly visible.

(4) Protective equipment. Rubber protective equipment shall be provided as required by WAC 296-24-092(1) of the general safety and health standard.

(5) Open switches. Before working on electrical equipment, switches shall be open and shall be locked out.

(6) Concealed conductors. Where electrical conductors are known to be concealed, no work shall be performed until such conductors are located.

(7) Overload relays. Overload relays shall be reset by authorized qualified personnel only.

(8) Passageways to panels. Passageways to switch centers or panels shall at all times be kept free from obstruction. Not less than three feet of clear space shall be maintained in front of switch centers or panels at all times.

(9) Bridging fuses. Fuses shall not be doubled or bridged.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-730, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-78-730, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-730, filed 8/27/81.]

WAC 296-78-735 Elevators, moving walks. Elevators, moving walks and other lifting devices intended for either passenger or freight service shall be constructed, maintained, inspected and operated in accordance with the provisions of chapter 70.87 RCW, WAC 296-24-875 through 296-24-90009 of the general safety and health standards, and those specific standards which are applicable from the division of building and construction safety inspection services, elevator section.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-735, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW

49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-735, filed 8/27/81.]

WAC 296-78-795 Crane cages. (1) Safe means of escape shall be provided for operators of all cranes in all operating locations. Rope ladders shall not be used as a regular means of access but may be installed as an emergency escape device to be used in the event of fire, mechanical breakdown or other emergency.

(2) The operator's cage shall be located at a place from which signals can be clearly distinguishable, and shall be securely fastened in a place and well braced to minimize vibration. It shall be large enough to allow ample room for the control equipment and the operator. The operator shall not be required to step over an open space of more than eighteen inches when entering the cage.

(3) Cab operated cranes shall be equipped with a portable fire extinguisher which meets the requirements of WAC 296-24-590 through 296-24-59007 and WAC 296-800-300.

(4) In establishments where continuous loud noises prevail such as caused by the operation of pneumatic tools, steam exhausts from boilers, etc., adequate signals shall be installed on cranes or one or more employees shall be placed on the floor for each crane operated to give warning to other employees of the approach of a crane with a load. Where there are more than two cranes on the same runway or within the same building structure, signaling devices are required to give warning to other employees of the approach of a crane with a load.

(5) Cages of cranes subjected to heat from below shall be of noncombustible construction and shall have a steel plate shield not less than one-eighth inch thick, placed not less than six inches below the bottom of the floor of the cage.

(6) Outside crane cages shall be enclosed. There shall be windows on three sides of the cage. The windows in the front and the side opposite the door shall be the full width of the cage.

(7) The floor of the cage on out-door cranes shall be extended to form an entrance landing which shall be equipped with a handrail and toeboard constructed to the specifications of WAC 296-78-790 of this chapter.

(8) A copy of the rules for operators shall be permanently posted in the cages of all cage-operated cranes.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-795, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-795, filed 8/27/81.]

WAC 296-78-84005 Dry kilns. (1) Transfer, kiln and dolly tracks shall be properly maintained at all times and shall have a grade of not more than one and one-fourth percent. Bumpers or stops shall be installed at the ends of all tracks capable of stopping a normal load for which the track is installed. A means shall be provided for chocking or blocking cars.

(2) Doors.

(a) Main kiln doors. Main kiln doors shall be provided with a method of holding them open while kiln is being loaded.

(b) Counterweights on vertical lift doors shall be boxed or otherwise guarded.

(c) Means shall be provided to firmly secure main doors, when they are disengaged from carriers and hangers, to prevent toppling.

(3) Kilns whose operation requires inside inspection shall be maintained with not less than eighteen inches clearance between loaded cars and the walls of the kiln. The requirements for personal protective equipment specified in WAC 296-800-160, safety and health core rules, and chapter 296-62 WAC, Part E, general occupational health standards, shall be complied with.

(4) Kiln loads shall be equipped or arranged for easy attachment and detachment of transfer cables. Means for stopping kiln cars shall be available at all times.

(5) Cars shall not be moved until tracks are clear and workers are out of the bight of transfer lines.

(6) When kiln or dolly loads of lumber are permitted to coast through or adjacent to any work area, audible warning shall be given.

(7) Stickers shall not be allowed to protrude more than two inches from the sides of kiln stacks.

(8) Yards and storage areas shall be kept reasonably free of debris and unnecessary obstruction. Warning signs shall be conspicuously posted wherever there is danger from moving vehicles or equipment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-84005, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-78-84005, filed 8/20/96, effective 10/15/96; 94-20-057 (Order 94-16), § 296-78-84005, filed 9/30/94, effective 11/20/94. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84005, filed 8/27/81.]

Chapter 296-79 WAC

SAFETY STANDARDS FOR PULP, PAPER, AND PAPERBOARD MILLS AND CONVERTERS

WAC

296-79-010	Scope and application.
296-79-020	General requirements.
296-79-040	Fire protection, ignition sources and means of egress.
296-79-050	Personal protection clothing and equipment.
296-79-090	Electrical equipment and distribution.
296-79-100	Floors, platforms, stairways, ladders, loading docks.
296-79-120	Scaffolds, construction, use and maintenance.
296-79-300	Machine room equipment and procedures.

WAC 296-79-010 Scope and application. (1) This chapter applies to establishments, firms, persons and corporations that manufacture, process, store, finish, or convert pulp, paper or paperboard and includes all buildings, machinery, and equipment.

(2) This chapter shall augment the Washington state general safety and health standards (chapter 296-24 WAC), general occupational health standards (chapter 296-62 WAC), and safety and health core rules (chapter 296-800 WAC). 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 296-79 WAC, shall prevail.

(3) The rules contained in this chapter are minimum requirements and the use of additional guards, or other means, methods or procedures may be needed to make the work or place of work safe.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-010, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-010, filed 8/3/99, effective 11/3/99; Order 74-24, § 296-79-010, filed 5/6/74; Order 70-6, § 296-79-010, filed 7/10/70, effective 8/10/70.]

WAC 296-79-020 General requirements. (1) House-keeping.

(a) Floors must be kept reasonably clear of spilled or leaking oil, grease, water, broke, etc., that may cause slipping, tripping or falling. Nonskid type surfacing must be installed in vehicular or pedestrian traffic areas where slipping hazards otherwise would exist.

In areas where it is not possible to keep the floor free of materials which cause a slipping hazard, mats, cleats, or other suitable materials which will effectively minimize or eliminate the hazard must be installed.

(b) Hoses, cords, slings or similar items or equipment must be stored in such a manner that they will not create a hazard.

(2) Storage and transportation of materials. Materials, objects or equipment must be stored or transported by methods which will prevent them from falling, tipping or rolling.

(3) Warning of open manholes or excavations. Open manholes or excavations must be:

- Roped off, barricaded, or adequately safeguarded when located in or adjacent to walkways, aiseways, or roadways.

- Provided with warning lights or lanterns during periods of darkness or reduced visibility.

(4) Training. Employees must receive proper instruction and be familiar with safe operating procedures:

(a) Before they supervise the operation, or make adjustments to any machine or equipment.

(b) To be able to cope with emergencies arising from breaks, ruptures, or spills which would create a hazardous condition.

(c) For lifting and moving objects. Mechanical devices should be used or employees should ask for assistance in lifting or moving heavy objects.

(d) On prompt reporting of any faulty equipment or hazardous condition to the person in charge.

(5) Working alone. When an employee is assigned to work alone in a remote or isolated area, procedures must be developed to ensure:

- That the employee reports by use of radio or telephone to someone periodically; or

- At reasonable intervals a designated person must check on the employee; and

- All persons involved in working alone are advised of the procedures to be followed.

(6) Exits from hazardous areas. Where physically and reasonably possible, there must be at least two unobstructed exits from any hazardous area. Such exits should be on opposite walls.

(7) Safe work area. Sufficient clearance must be maintained between machines to allow employees a safe work area.

(8) Protection from overhead hazard. Warning signs/devices must be:

- Placed in conspicuous locations below areas where overhead work is being done and

(b) Counterweights on vertical lift doors shall be boxed or otherwise guarded.

(c) Means shall be provided to firmly secure main doors, when they are disengaged from carriers and hangers, to prevent toppling.

(3) Kilns whose operation requires inside inspection shall be maintained with not less than eighteen inches clearance between loaded cars and the walls of the kiln. The requirements for personal protective equipment specified in WAC 296-800-160, safety and health core rules, and chapter 296-62 WAC, Part E, general occupational health standards, shall be complied with.

(4) Kiln loads shall be equipped or arranged for easy attachment and detachment of transfer cables. Means for stopping kiln cars shall be available at all times.

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(6) When kiln or dolly loads of lumber are permitted to coast through or adjacent to any work area, audible warning shall be given.

(7) Stickers shall not be allowed to protrude more than two inches from the sides of kiln stacks.

(8) Yards and storage areas shall be kept reasonably free of debris and unnecessary obstruction. Warning signs shall be conspicuously posted wherever there is danger from moving vehicles or equipment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-78-84005, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 96-17-056, § 296-78-84005, filed 8/20/96, effective 10/15/96; 94-20-057 (Order 94-16), § 296-78-84005, filed 9/30/94, effective 11/20/94. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-78-84005, filed 8/27/81.]

Chapter 296-79 WAC

SAFETY STANDARDS FOR PULP, PAPER, AND PAPERBOARD MILLS AND CONVERTERS

WAC

296-79-010	Scope and application.
296-79-020	General requirements.
296-79-040	Fire protection, ignition sources and means of egress.
296-79-050	Personal protection clothing and equipment.
296-79-090	Electrical equipment and distribution.
296-79-100	Floors, platforms, stairways, ladders, loading docks.
296-79-120	Scaffolds, construction, use and maintenance.
296-79-300	Machine room equipment and procedures.

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(2) This chapter shall augment the Washington state general safety and health standards (chapter 296-24 WAC), general occupational health standards (chapter 296-62 WAC), and safety and health core rules (chapter 296-800 WAC). 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 296-79 WAC, shall prevail.

(3) The rules contained in this chapter are minimum requirements and the use of additional guards, or other means, methods or procedures may be needed to make the work or place of work safe.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-010, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-010, filed 8/3/99, effective 11/3/99; Order 74-24, § 296-79-010, filed 5/6/74; Order 70-6, § 296-79-010, filed 7/10/70, effective 8/10/70.]

WAC 296-79-020 General requirements. (1) House-keeping.

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In areas where it is not possible to keep the floor free of materials which cause a slipping hazard, mats, cleats, or other suitable materials which will effectively minimize or eliminate the hazard must be installed.

(b) Hoses, cords, slings or similar items or equipment must be stored in such a manner that they will not create a hazard.

(2) Storage and transportation of materials. Materials, objects or equipment must be stored or transported by methods which will prevent them from falling, tipping or rolling.

(3) Warning of open manholes or excavations. Open manholes or excavations must be:

- Roped off, barricaded, or adequately safeguarded when located in or adjacent to walkways, aiseways, or roadways.

- Provided with warning lights or lanterns during periods of darkness or reduced visibility.

(4) Training. Employees must receive proper instruction and be familiar with safe operating procedures:

(a) Before they supervise the operation, or make adjustments to any machine or equipment.

(b) To be able to cope with emergencies arising from breaks, ruptures, or spills which would create a hazardous condition.

(c) For lifting and moving objects. Mechanical devices should be used or employees should ask for assistance in lifting or moving heavy objects.

(d) On prompt reporting of any faulty equipment or hazardous condition to the person in charge.

(5) Working alone. When an employee is assigned to work alone in a remote or isolated area, procedures must be developed to ensure:

- That the employee reports by use of radio or telephone to someone periodically; or

- At reasonable intervals a designated person must check on the employee; and

- All persons involved in working alone are advised of the procedures to be followed.

(6) Exits from hazardous areas. Where physically and reasonably possible, there must be at least two unobstructed exits from any hazardous area. Such exits should be on opposite walls.

(7) Safe work area. Sufficient clearance must be maintained between machines to allow employees a safe work area.

(8) Protection from overhead hazard. Warning signs/devices must be:

- Placed in conspicuous locations below areas where overhead work is being done and

- Removed promptly when work is completed and the overhead hazard no longer exists.

(9) Welding areas protected.

(a) Areas in which welding is being done must be screened or barricaded to protect persons from flash burns, when practical.

(b) If the welding process cannot be isolated, all persons who may be exposed to the hazard of arc flash must be properly protected.

(10) Testing safety devices. Brakes, back stops, anti-run-away devices, overload releases, emergency stops, and other safety devices must be inspected and tested frequently to ensure that all are operative and maintained in good repair.

(11) Starting and stopping devices.

- Electrically or manually operated power starting or stopping devices must be provided within easy reach of the operator from the normal operating position.

- If necessary for safety of the operation, the machine must be so equipped that retarding or braking action can be applied at the time of or after the source of power is deactivated.

(12) Interlocks:

Interlocks that affect the safety of employees must not be bypassed except where the employer demonstrates that alternate procedures or devices provide a level of safety for employees equivalent to that provided by the safety interlock. Interlocks are considered to be bypassed anytime the designed control strategy is bypassed by means including, but not limited to, a temporary wiring change, physical interference or a temporary software change of "force."

Prior to bypassing a safety interlock the employer must:

- Develop a written procedure detailing how the bypass will be accomplished and the alternate means of protecting employees.

- Inform affected employees of all pertinent information including at a minimum the reason for the change, the date of the change, who is responsible for the change, and approximately how long the change will be in effect.

- Post appropriate warning of the change on the equipment or area.

(13) Designing control systems. Employers must ensure that all control systems are designed to:

- Ensure that the system does not create an unsafe state that endangers personnel.

- Ensure that when control systems fail, the equipment being controlled fails to a safe state.

- Have an independent method to safely stop the process or equipment, such as a hardwired emergency stop button or other controls that deenergize the system, or independent methods to force the system to a safe state.

(14) Compressed air.

(a) Compressed air must not be used for cleaning clothing that is being worn, or if it will endanger persons in the area.

(b) Sections of high pressure air hoses must be properly coupled and have safety chains or equivalent safety device attached between the sections (30 psi or more is high pressure air).

(15) Punch bars. Open pipes must not be used as punch bars if the use would create a hazard.

(16) Saw table limit stop or extension. Employees must be protected from contact with the front edge of a circular saw by:

- A limit stop which will prevent the forward swing of the cutting edge from extending beyond the edge of the table or

- Installation of a table extension.

(17) Powder-actuated tools.

- Powder-actuated tool design, construction, operation and use shall comply with all requirements specified in "safety requirements for powder actuated fastening systems," (see chapter 296-24 WAC, Part H-1).

- A careful check must be made to ensure that no cartridges or charges are left where they could enter equipment or be accidentally discharged in any area where they could create a fire or explosion hazard.

(18) Ladders required on waterfront docks. Employers must ensure that either permanent ladders or portable ladders:

- Are readily available for emergency use on all waterfront docks.

- Extend from the face of the dock to the water line at its lowest elevation.

- Are installed at intervals not to exceed 400 feet.

- Are noticeable by painting the dock area immediately adjacent to the ladder with a bright color which contrasts with the surrounding area.

- Have been secured with a suitable method.

Note: When working on or around water also see WAC 296-800-160.

(19) Prevent overhang while removing materials. Extreme care must be taken to prevent material from creating an overhang while removing the materials from piles or bins.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-020, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-020, filed 8/3/99, effective 11/3/99. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-79-020, filed 6/11/82; Order 77-12, § 296-79-020, filed 7/11/77; Order 74-24, § 296-79-020, filed 5/6/74; Order 70-6, § 296-79-020, filed 7/10/70, effective 8/10/70.]

WAC 296-79-040 Fire protection, ignition sources and means of egress. For fire protection, ignition source, and means of egress requirements see chapter 296-24 WAC, Part G-1, G-2 and G-3 and WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-040, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-040, filed 8/3/99, effective 11/3/99; Order 74-24, § 296-79-040, filed 5/6/74; Order 70-6, § 296-79-040, filed 7/10/70, effective 8/10/70.]

WAC 296-79-050 Personal protection clothing and equipment. See WAC 296-800-160 for additional personal protective equipment requirements.

(1) Rings or other jewelry that could create a hazard should not be worn by employees while in the performance of their work.

(2) Protective footwear.

- Employees who work in areas where there is a possibility of foot injury due to falling or rolling objects must wear safety type footwear.

- Employers will supply shoe guards and toe protectors.

- Employers must also make safety shoes available for purchase by employees at not more than actual cost to the employer.

(3) Calks or other suitable footwear that will afford reasonable protection from slipping must be:

- Worn while working on logs.
- Made available at not more than actual cost to the employer.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-050, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-050, filed 8/3/99, effective 11/3/99. Statutory Authority: Chapter 49.17 RCW. 94-20-057 (Order 94-16), § 296-79-050, filed 9/30/94, effective 11/20/94; 89-11-035 (Order 89-03), § 296-79-050, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-79-050, filed 11/30/83; 82-13-045 (Order 82-22), § 296-79-050, filed 6/11/82; Order 74-24, § 296-79-050, filed 5/6/74; Order 70-6, § 296-79-050, filed 7/10/70, effective 8/10/70.]

WAC 296-79-090 Electrical equipment and distribution. All electrical installations and electrical utilization equipment must comply with chapter 296-24 WAC, Part L, and WAC 296-800-280.

(1) Operator controlled devices. Push buttons, selector switches, remote control switches, automatic circuit activating devices, and other control circuit type devices must be marked to indicate their function and the equipment they control.

(2) Posting equipment automatically activated or remotely controlled. If it will create a hazard to personnel, equipment which is automatically activated or remotely controlled must be posted, warning persons that machine may start automatically.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-090, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-090, filed 8/3/99, effective 11/3/99. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-79-090, filed 11/22/91, effective 12/24/91; Order 74-24, § 296-79-090, filed 5/6/74; Order 70-6, § 296-79-090, filed 7/10/70, effective 8/10/70.]

WAC 296-79-100 Floors, platforms, stairways, ladders, loading docks. See chapter 296-24 WAC, Part J, and chapter 296-800 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-100, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-100, filed 8/3/99, effective 11/3/99; Order 74-24, § 296-79-100, filed 5/6/74; Order 70-6, § 296-79-100, filed 7/10/70, effective 8/10/70.]

WAC 296-79-120 Scaffolds, construction, use and maintenance. See General safety and health standards, chapter 296-24 WAC, Part J-2 or Safety standards for construction work, chapter 296-155 WAC, Part J-1.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-120, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-120, filed 8/3/99, effective 11/3/99; Order 74-24, § 296-79-120, filed 5/6/74; Order 70-6, § 296-79-120, filed 7/10/70, effective 8/10/70.]

WAC 296-79-300 Machine room equipment and procedures. (1) Pulp and paper machines must be equipped with emergency stopping control(s) which can be actuated quickly from all normal operating stations. If useful for the safety of personnel, the stopping control(s) must be interlocked with adequate retarding or braking action to stop the machine as

quickly as is practical. The devices must consist of push buttons for electric motive power (or electrically operated engine stops), pull cords connected directly to the prime mover, control clutches, or other devices.

(2) Steps and footwalks along the fourdrinier/forming and press section must have nonslip surfacing and be complete with standard handrails, when practical.

(3) If a machine must be lubricated while in operation an automatic lubricating device must be provided or oil cups and grease fittings must be provided which can be serviced safely without exposing the worker to any hazards.

(4) All levers carrying weights must be so constructed that weights will not slip or fall off.

(5) Guarding inrunning nip points.

(a) The drums on pulp and paper machine winders.

(i) These drums must be provided with suitable guards to prevent a person from being caught between the roll and the front drum on the winder when the pinch point is on the operator's side.

(ii) Such guards must be interlocked with the drive mechanism to prevent the winder from running while the guard is not in place. Except that the winder may be wired to allow it to run at thread or jog speed only for adjustment and start-up purposes while the guard is not in position.

(iii) A zero speed switch or locking device must be installed to prevent the guard from being removed while the roll is turning above thread or jog speed.

(b) Rewinders.

When rewinding large rolls and the nip point is adjacent to the normal work area.

- The nip point must be protected by a barrier guard and

- Such guard must be interlocked with the drive mechanism to prevent operating the machine above thread or jog speed without the guard in place and

- A zero speed switch must be installed to prevent the guard from being raised while the roll is turning.

(c) Inrunning nips where paper is not being fed into a calender must be guarded.

(6) An audible alarm must be sounded prior to starting up any section of a pulp or paper machine. Sufficient time must be allowed between activation of the alarm system and start-up of the equipment to allow any persons to clear the hazardous area.

(7) When starting up a dryer section, steam to heat the drums must be introduced slowly and while the drums are revolving.

(8) A safe method must be used when starting paper into the nip of drum type reels or calender stacks. This may be accomplished by the use of feeder belts, carrier ropes, air carriage or other device or instrument.

- A rope carrying system should be used wherever possible at points of transfer, or

- Sheaves should be spaced so that they do not create a nip point with each other and the sheave and its support should be capable of withstanding the speed and breaking strength of the rope for which they are intended.

(9) Employees must not feed a stack with any hand held device which is capable of going through the nip.

(10) Employees must not attempt to remove a broken carrier rope from a dryer while the section is running at operating speed.

(11) Employees must stop the dryer to remove a wrap except in cases where it can be safely removed by using air or other safe means.

(12) To remove deposits from rolls, a specially designed scraper or tool shall be used. Scraping of rolls must be performed on the outgoing nip side.

(13) Doctor blades.

(a) Cleaning. Employees must not place their hands between the sharp edge of an unloaded doctor blade and the roll while cleaning the doctor blade.

(b) Doctor blades must have the sharp edges properly guarded during transportation and storage.

(c) Special protective gloves must be provided and must be worn by employees when filing or handling sharp edged doctor blades.

(14) Handling reels.

(a) Reels must stop rotating before being lifted away from reel frame.

Crane hooks must not be used to stop a turning reel.

(b) Exposed rotating reel shafts with square block ends must be guarded.

(c) The crane operator must ascertain that reels are properly seated at winder stand or at reel arms before they disengage the hooks.

(d) On stored reels, a clearance of at least 8 inches between the reels of paper must be maintained.

(15) All winder shafts must be equipped with a winder collar guide. The winder must have a guide rail to align the shaft for easy entrance into the opened rewind shaft bearing housing. If winder shafts are too heavy for manual handling, mechanical equipment must be used.

(16) Shaftless winders must be provided with a barrier guard of sufficient strength and size to confine the rolls in the event they become dislodged while running.

(17) All calender stacks and spreader bars must be grounded according to chapter 296-24 WAC, Part L, and WAC 296-800-280 as protection against shock induced by static electricity.

(18) Nonskid type surface required.

(a) All exposed sole plates between dryers, calenders, reels, and rewinders must have a nonskid type surface.

(b) A nonskid type surface must be provided in the work areas around the winders or rewinders.

(19) If a powered roll ejector is used it should be interlocked to prevent accidental actuation until the receiving platform or roll lowering table is in position to receive the roll.

(20) Employees must keep clear of hazardous areas around the lowerator, especially all lowerator openings in a floor and where roll is being discharged.

(21) Provision must be made to hold the rider roll when in a raised position unless counterbalancing eliminates the hazard.

(22) Drain openings in pits. Flush floor drain openings larger than 3 inches in diameter in the bottom of pits must be guarded to prevent workers from stepping through, while working in this area.

(23) Employees must not enter into or climb on any paper machine roll that is subject to free turning unless a positive locking device has been installed to prevent the roll from turning.

(24) The employer must ensure sufficient inspection and nondestructive examination of reel spool and calender roll journals. The type and frequency of testing must be adequate to detect indications of failure. Any reel spool or calender roll journal found to have an indication of failure must be removed from service. Nondestructive examination personnel must be qualified in accordance with SNT-TC 1A.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-79-300, filed 5/9/01, effective 9/1/01; 99-16-083, § 296-79-300, filed 8/3/99, effective 11/3/99. Statutory Authority: Chapter 49.17 RCW. 91-24-017 (Order 91-07), § 296-79-300, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040, 49.17.240, and chapters 43.22 and 42.30 RCW. 81-03-007 (Order 80-31), § 296-79-300, filed 1/8/81; Order 76-7, § 296-79-300, filed 3/1/76; Order 74-24, § 296-79-300, filed 5/6/74; Order 70-6, § 296-79-300, filed 7/10/70, effective 8/10/70.]

Chapter 296-96 WAC

SAFETY REGULATIONS AND FEES FOR ALL ELEVATORS, DUMBWAITERS, ESCALATORS AND OTHER CONVEYANCES

(Formerly chapters 296-81, 296-82, 296-84, 296-85, 296-87, 296-89, 296-91, 296-93A, 296-94, 296-95, and 296-100 WAC)

WAC

296-96-01010	What are the permit fees for conveyances other than material lifts and hoists and how are they calculated?
296-96-01027	Are initial installation permit fees refundable?
296-96-01030	What is the process for installation and alteration plan approval?
296-96-01035	Are there inspection fees?
296-96-01040	What is the fee for testing and inspecting regular elevators used as temporary personnel elevators?
296-96-01045	What are the inspection requirements and fees for conveyances in private residences?
296-96-01050	How do I get a supplemental inspection?
296-96-01055	Are technical services available and what is the fee?
296-96-01060	Can I request an after hours inspection and what is the fee?
296-96-01065	What are the annual operating permits fees?

WAC 296-96-01010 What are the permit fees for conveyances other than material lifts and hoists and how are they calculated? Permit fees are based on the total cost of the conveyance and labor to install. The following permit fees apply to the construction, alteration, or relocation of all conveyances except for material lifts:

TOTAL COST OF CONVEYANCE	FEE
\$250 to and including \$1,000	\$31.30
\$1,001 to and including \$15,000	
For the first \$1,001	44.20
Each additional \$1,000 or fraction thereof	8.70
\$15,001 to and including \$100,000	
For first \$15,001	169.90
For each additional \$1,000 or fraction thereof	5.60
OVER \$100,001	
For the first \$100,001	714.40
For each additional \$1,000 or fraction thereof	4.60

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01010, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020,

70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01010, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01027 Are initial installation permit fees refundable? Your initial installation permit fees are refundable minus a processing fee unless your permits have expired. No refunds will be issued for expired permits. All requests for refunds must be submitted in writing to the elevator section and must identify the specific permits for which the refunds are requested.

The processing fee for a refund is\$26.70

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01027, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01027, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01030 What is the process for installation and alteration plan approval? Prior to the start of construction, you must submit to the department for approval two copies of plans for new installations or major alterations. To be approved, the plan must comply with the latest adopted edition of the American Society of Mechanical Engineers (ASME) A17.1, the National Electrical Code (NEC) and applicable Washington Administrative Codes (WAC). In addition, the plans must include all information necessary in determining whether each installation/alteration complies with all applicable codes. You must keep a copy of the approved plan on the job site until the department has witnessed all acceptance tests. Any alterations to the approved plan must be submitted to the department for approval before a final inspection will be conducted. The nonrefundable fees for reviewing your plans are:

For each installation/major alteration.\$22.80
If more than two sets of plans are submitted, the fee for each additional set\$22.80

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01030, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01030, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01035 Are there inspection fees? The initial inspection of a conveyance or for the initial inspection of construction, alteration or relocation of a conveyance is included with your permit fee. Once the department has approved the conveyance you will be issued a permit that is valid for 30-days. Prior to the expiration of the 30-day permit the application for an annual operating permit and the appropriate fees must be paid to the department. Once the department has received the appropriate fees and application you will be issued your first annual operating permit. You are required to renew your annual operating permit yearly.

The following exceptions do require a fee:

REINSPECTION

	FEE
If a conveyance does not pass an initial inspection and a second inspection is required, the fee for each conveyance reinspected is	\$81.00
If any additional reinspections are required, the fee for each conveyance reinspected	\$104.60

The department may waive reinspection fees.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01035, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01035, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01040 What is the fee for testing and inspecting regular elevators used as temporary personnel elevators? (1) The fee for the inspecting and testing of regular elevators used as temporary personnel elevators is \$69.40, in addition to any other fees required in this chapter. This fee purchases a 30-day temporary use permit that may be renewed at the department's discretion.

(2) When this temporary use permit is purchased, a notice declaring that the equipment has not received final approval from the department must be conspicuously posted on the elevator.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01040, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01040, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01045 What are the inspection requirements and fees for conveyances in private residences? (1) Chapter 70.87 RCW requires the department to inspect all new, altered or relocated conveyances operated exclusively for single-family use in private residences. Prior to inspection, you must complete a permit application as described in WAC 296-96-01005 and pay the appropriate fee listed in WAC 296-96-01010.

(2) Chapter 70.87 RCW allows the department to inspect conveyances operated exclusively for single-family use in private residences when the department is investigating an accident or an alleged or apparent violation of the statute or these rules.

(3) No annual inspection and operating permit is required for a private residence conveyance operated exclusively for single-family use unless the owner requests it. When an owner requests an inspection and an annual operating permit, the following fee must be paid prior to an inspection:

TYPE OF CONVEYANCE	FEE
Each inclined stairway chair lift in private residence	\$16.90
Each inclined wheel chair lift in a private residence	22.80
Each vertical wheel chair lift in a private residence	28.80
Each dumbwaiter in a private residence.	22.80
Each inclined elevator at a private residence.	81.00

Each private residence elevator	52.20
Duplication of a lost, damaged or stolen operating permit	5.10

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01045, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01045, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01050 How do I get a supplemental inspection? Any person, firm, corporation or governmental agency can request a supplemental inspection from the department by paying a fee of \$299.80 per day plus the standard per diem and mileage allowance granted to department inspectors.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01050, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01050, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01055 Are technical services available and what is the fee? You may request elevator field technical services from the department by paying a fee of \$57.80 per hour plus the standard per diem and mileage allowance granted to department inspectors. These field technical services may include code evaluation, code consultation, plan examination, code interpretation and clarification of technical data relating to the application of the department's conveyance rules. Field technical services do not include inspections.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01055, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01055, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01060 Can I request an after hours inspection and what is the fee? You may request an inspection outside of normal business hours, which are 7:00 a.m. to 5:00 p.m., if an inspector is available and the inspection is authorized by the department. The minimum fee for an after-hours inspection is \$72.70 per hour plus the standard per diem and mileage allowance granted to department inspectors. This fee is in addition to any other fees required for your project.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01060, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01060, filed 12/22/00, effective 1/22/01.]

WAC 296-96-01065 What are the annual operating permits fees? An annual operating permit will be issued to you upon payment of the appropriate fee:

[2002 WAC Supp—page 1308]

TYPE OF CONVEYANCE	FEE
Each hydraulic elevator	\$80.90
Each roped-hydraulic elevator	104.60
plus for each hoistway opening in excess of two	7.90
Each cable elevator	104.60
plus for each hoistway opening in excess of two	7.90
Each cable elevator traveling more than 25 feet without an opening—for each 25 foot traveled	11.00
Each limited-use/limited-application (LULA) elevator	80.90
Each escalator	80.90
Each dumbwaiter in other than a private residence	52.20
Each material lift	69.40
Each incline elevator in other than a private residence	104.60
Each belt manlift	80.90
Each stair lift in other than a private residence	52.20
Each wheel chair lift in other than a private residence	52.20
Each personnel hoist	80.90
Each grain elevator personnel lift	80.90
Each material hoist	80.90
Each special purpose elevator	80.90
Each private residence elevator installed in other than a private residence	80.90
Each casket lift	80.90
Each sidewalk freight elevator	80.90
Each hand-powered manlift or freight elevator	52.20
Each boat launching elevator	80.90
Each auto parking elevator	80.90
Each moving walk	80.90
Duplication of a damaged, lost or stolen operating permit	5.10

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-96-01065, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.87.020, 70.87.030, 70.87.034, 70.87.120, 70.87.185 and chapter 70.87 RCW. 01-02-026, § 296-96-01065, filed 12/22/00, effective 1/22/01.]

Chapter 296-99 WAC

SAFETY STANDARDS FOR GRAIN HANDLING FACILITIES

WAC

296-99-010	What safety hazards does this chapter require the employer to control?
296-99-040	What practices must an employer follow for entry into grain storage structures?

WAC 296-99-010 What safety hazards does this chapter require the employer to control? This chapter directs the employer to control dust fires, explosions and other safety hazards in grain handling facilities including the waterfront dock areas at marine terminals (chapter 296-56 WAC will not apply).

All provisions from chapters 296-24, 296-62, and 296-800 WAC also apply. If rules in either of these chapters con-

flict with rules in chapter 296-99 WAC, chapter 296-99 WAC will prevail.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-99-010, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 97-22-065, § 296-99-010, filed 11/3/97, effective 1/1/98; 88-23-054 (Order 88-25), § 296-99-010, filed 11/14/88.]

WAC 296-99-040 What practices must an employer follow for entry into grain storage structures? This section applies to employee entry into all grain storage structures.

(1) The employer must ensure that the practice of walking down grain is prohibited. "Walking down grain" means an employee walks on grain to make it flow within or out from a grain storage structure, or an employee is on moving grain.

(2) The employer must ensure that during the entry and occupation of a storage structure the employee uses:

- A body harness with a lifeline; or
- A boatswain's chair that meets the requirements of Part J-2 of chapter 296-24 WAC whenever:

(a) The employee is exposed to a fall hazard such as when entering from the top or above the level of the stored grain; or

(b) The employee is exposed to an engulfment hazard such as when entering at the level of the stored grain, or while walking or standing on the grain. The lifeline must be rigged so that its position and length will prevent the employee from sinking below waist level.

(3) The employer must ensure that during the occupation of storage structures, including walking or standing on grain, employees are protected from hazards related to:

- Mechanical;
- Electrical;
- Hydraulic; and
- Pneumatic equipment.

By using safeguards, lockout-tagout, or other equally effective means. All provisions for the control of hazardous energy (lockout/tagout) from WAC 296-24-110 apply to this chapter.

(4) The employer must ensure that employees are prohibited from entering any storage structure where a build-up of grain overhead (bridging) or on the sides could fall and bury them.

(5) The employer must ensure, as minimum precautions, that employee entry and occupation of all grain storage structures including flat storage structures is done according to all applicable requirements of WAC 296-62-145, confined space, when the storage structure:

- Has limited or restricted means of entry and exit; and
- Is not designed for continuous employee occupancy.

(6) The employer may allow an employee to perform confined space entry work in grain storage structures without a permit if the employer's representative personally monitors the work to prevent employee exposure to illness or injury from atmospheric hazards during the entire operation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-99-040, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 97-22-065, § 296-99-040, filed 11/3/97, effective 1/1/98; 88-23-054 (Order 88-25), § 296-99-040, filed 11/14/88.]

Chapter 296-104 WAC

BOARD OF BOILER RULES—SUBSTANTIVE

WAC

296-104-010	Administration—What are the definitions of terms used in this chapter?
296-104-020	Administration—What are the filing requirements for boilers and pressure vessels before their installation?
296-104-040	Administration—When should inspectors submit inspection reports and on what forms?
296-104-045	Administration—What are the insurance companies' responsibilities?
296-104-055	Administration—What are the examination fees?
296-104-060	Administration—When shall inspectors' commissions be issued, suspended, or revoked?
296-104-065	Administration—How should a certified or commissioned inspector obtain a Washington state commission?
296-104-100	Inspection—How often must boilers and unfired pressure vessels be inspected?
296-104-102	Inspection—What are the standards for in-service inspection?
296-104-130	Inspection—When are inspection certificates valid?
296-104-151	Inspection—What are the requirements for rental boilers?
296-104-200	Construction—What are the standards for new construction?
296-104-205	Construction—What are the requirements for nonstandard new construction?
296-104-256	Installation—What inspections are required for reinstalled standard boilers or unfired pressure vessels?
296-104-265	Installation—What control and limit devices are required on boilers?
296-104-502	Repairs—What are the requirements for nonnuclear boilers and unfired pressure vessel repairs and alterations?
296-104-700	What are the inspection fees—Certificate fees—Expenses?

WAC 296-104-010 Administration—What are the definitions of terms used in this chapter? "Agriculture purposes" shall mean any act performed on a farm in production of crops or livestock, and shall include the storage of such crops and livestock in their natural state, but shall not be construed to include the processing or sale of crops or livestock.

"Attendant" shall mean the person in charge of the operation of a boiler or unfired pressure vessel.

"Automatic operation of a boiler" shall mean unattended control of feed water and fuel in order to maintain the pressure and temperature within the limits set. Controls must be such that the operation follows the demand without interruption. Manual restart may be required when the burner is off because of low water, flame failure, power failure, high temperatures or pressures.

"Board of boiler rules" or "board" shall mean the board created by law and empowered under RCW 70.79.010.

"Boiler and pressure vessel installation permit," shall mean a permit approved by the chief inspector before starting installation of any boiler and pressure vessel in this state.

Owner/user inspection agency's, Washington specials and rental boilers are exempt from "boiler and pressure vessel installation permit."

"Boilers and/or pressure vessels" - below are definitions for types of boilers and pressure vessels used in these regulations:

- "Condemned boiler or unfired pressure vessel" shall mean a boiler or unfired pressure vessel that has been inspected and declared unsafe or disquali-

fied by legal requirements by an inspector who has applied a stamping or marking designating its condemnation.

- **"Hot water heater"** shall mean a closed vessel designed to supply hot water for external use to the system. All vessels must be listed by a nationally recognized testing agency and shall not exceed any of the following limits:
 - * Pressure of 160 psi (1100 kpa);
 - * Temperature of 210 degrees F (99°C);
 - * Capacity of 120 U.S. gallons (454 liters);
 - * Input of 200,000 BTU/hr (58.58 kw).
 - * Hot water heaters exceeding 200,000 BTU/hr (58.58 kw) must be ASME code stamped.
 - * Each vessel shall be protected with an approved temperature and pressure safety relief valve.
 - **"Low pressure heating boiler"** shall mean a steam or vapor boiler operating at a pressure not exceeding 15 psig or a boiler in which water or other fluid is heated and intended for operation at pressures not exceeding 160 psig or temperatures not exceeding 250 degrees F by the direct application of energy from the combustion of fuels or from electricity, solar or nuclear energy including lined potable water heaters.
 - **"Nonstandard boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel that does not bear marking of the codes adopted in WAC 296-104-200.
 - **"Pool heaters"** shall be considered a boiler or unfired pressure vessel unless it meets all of the following criteria:
 - * Appliance used to heat water for swimming pools and spas.
 - * A flow switch shall be wired to shut off the heating source under a condition of low flow.
 - * There are no intervening stop valves on the inlet or outlet side of the unit. Any valves used for maintaining the appliance must be locked open during operation.
 - * Appliance is equipped with an ASME approved pressure relief device, with no intervening stop valves, set not to exceed the maximum allowable working pressure (MAWP) of the appliance.
 - * Unit is rated at less than 200,000 BTU/hr, and is operated at pressure and temperature no greater than 160 psig (1100 kpa) and 210°F (99°C), respectively.
 - * Heating source operation is wired in series with the circulating pump.
 - * Unit is built to the ASME code or approved by a nationally recognized testing laboratory.
 - **"Power boiler"** shall mean a boiler in which steam or other vapor is generated at a pressure of more than 15 psig for use external to itself or a boiler in which water or other fluid is heated and intended for operation at pressures in excess of 160 psig and/or temperatures in excess of 250 degrees F by the direct application of energy from the combustion of fuels or from electricity, solar or nuclear energy.
 - **"Reinstalled boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel removed from its original setting and reset at the same location or at a new location without change of ownership.
 - **"Rental boiler"** shall mean any power or low pressure heating boiler that is under a rental contract between owner and user.
 - **"Second hand boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel of which both the location and ownership have changed after primary use.
 - **"Standard boiler or unfired pressure vessel"** shall mean a boiler or unfired pressure vessel which bears the marking of the codes adopted in WAC 296-104-200.
 - **"Unfired pressure vessel"** shall mean a closed vessel under pressure excluding:
 - * Fired process tubular heaters;
 - * Pressure containers which are integral parts of components of rotating or reciprocating mechanical devices where the primary design considerations and/or stresses are derived from the functional requirements of the device;
 - * Piping whose primary function is to transport fluids from one location to another;
 - * Those vessels defined as low pressure heating boilers or power boilers.
 - **"Unfired steam boiler"** shall mean a pressure vessel in which steam is generated by an indirect application of heat. It shall not include pressure vessels known as evaporators, heat exchangers, or vessels in which steam is generated by the use of heat resulting from the operation of a processing system containing a number of pressure vessels, such as used in the manufacture of chemical and petroleum products, which will be classed as unfired pressure vessels.
- "Certificate of competency"** shall mean a certificate issued by the state board of boiler rules to a person who has passed an examination prescribed by the board of boiler rules.
- "Code, API-510"** shall mean the Pressure Vessel Inspection Code of the American Petroleum Institute with addenda and revisions, thereto made and approved by the institute which have been adopted by the board of boiler rules in accordance with the provisions of RCW 70.79.030.
- "Code, ASME"** shall mean the boiler and pressure vessel code of the American Society of Mechanical Engineers with amendments thereto made and approved by the council of the society which have been adopted by the board of boiler rules in accordance with the provisions of RCW 70.79.030.
- "Code, NBIC"** shall mean the National Board Inspection Code of the National Board of Boiler and Pressure Vessel Inspectors with addenda and revisions, thereto made and approved by the National Board of Boiler and Pressure Vessel Inspectors and adopted by the board of boiler rules in accordance with the provisions of RCW 70.79.030.
- "Commission"** shall mean an annual state commission/commission card issued to a person in the employ of the state, an insurance company or a company owner/user inspection agency holding a certificate of competency which authorizes them to perform inspections of boilers and/or unfired pressure vessels.
- "Department"** as used herein shall mean the department of labor and industries of the state of Washington.
- "Director"** shall mean the director of the department of labor and industries.
- "Domestic and/or residential purposes"** shall mean serving a private residence or an apartment house of less than six families.

"Existing installations" shall mean any boiler or unfired pressure vessel constructed, installed, placed in operation, or contracted for before January 1, 1952.

"Inspection, external" shall mean an inspection made while a boiler or unfired pressure vessel is in operation and includes the inspection and demonstration of controls and safety devices required by these rules.

"Inspection, internal" shall mean an inspection made when a boiler or unfired pressure vessel is shut down and handholes, manholes, or other inspection openings are open or removed for examination of the interior. An external ultrasonic examination of unfired pressure vessels less than 36" inside diameter shall constitute an internal inspection.

"Inspector" shall mean the chief boiler inspector, a deputy inspector, or a special inspector.

- **"Chief inspector"** shall mean the inspector appointed under RCW 70.79.100 who serves as the secretary to the board without a vote.
- **"Deputy inspector"** shall mean an inspector appointed under RCW 70.79.120.
- **"Special inspector"** shall mean an inspector holding a Washington commission identified under RCW 70.79.130.

"Nationwide engineering standard" shall mean a nationally accepted design method, formulae and practice acceptable to the board.

"Owner" or **"user"** shall mean a person, firm, or corporation owning or operating any boiler or unfired pressure vessel within the state.

"Owner/user inspection agency" shall mean an owner or user of boilers and/or pressure vessels that maintains an established inspection department, whose organization and inspection procedures meet the requirements of a nationally recognized standard acceptable to the department.

"Place of public assembly" or **"assembly hall"** shall mean a building or portion of a building used for the gathering together of 50 or more persons for such purposes as deliberation, education, instruction, worship, entertainment, amusement, drinking, or dining or waiting transportation. This shall also include child care centers (those agencies which operate for the care of thirteen or more children), public and private hospitals, nursing and boarding homes.

"Special design" shall mean a design using nationwide engineering standards other than the codes adopted in WAC 296-104-200 or other than allowed in WAC 296-104-230.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-010, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030, 70.79.040 and chapter 70.79 RCW. 00-21-024, § 296-104-010, filed 10/10/00, effective 11/13/00. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-010, filed 10/26/99, effective 11/26/99; 98-22-024, § 296-104-010, filed 10/28/98, effective 11/28/98; 96-21-081, § 296-104-010, filed 10/16/96, effective 11/16/96. Statutory Authority: RCW 70.79.040. 94-21-002, § 296-104-010, filed 10/5/94, effective 11/5/94; 93-12-014, § 296-104-010, filed 5/21/93, effective 6/21/93; 92-11-070, § 296-104-010, filed 5/20/92, effective 6/20/92. Statutory Authority: RCW 70.79.240. 88-01-064 (Order 87-25), § 296-104-010, filed 12/17/87. Statutory Authority: RCW 70.79.040 and 70.79.050. 86-01-088 (Order 85-26), § 296-104-010, filed 12/19/85; Order 72-11, § 296-104-010, filed 7/7/72; Part I, filed 3/23/60.]

WAC 296-104-020 Administration—What are the filing requirements for boilers and pressure vessels before their installation? "Boiler and pressure vessel installation permit," shall be submitted by the owner or agent and approved by the chief inspector. Manufacturers' data reports on boilers and pressure vessels shall be registered with the National Board of Boiler and Pressure Vessel Inspectors.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-020, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-020, filed 10/26/99, effective 11/26/99; 95-19-058, § 296-104-020, filed 9/15/95, effective 10/16/95; Order 74-37, § 296-104-020, filed 11/8/74; Part II, § 1, filed 3/23/60.]

WAC 296-104-040 Administration—When should inspectors submit inspection reports and on what forms? Inspectors shall submit reports of inspections of boilers and unfired pressure vessels on appropriate forms or media approved by the chief inspector. Routine reports of inspections shall be submitted within thirty days of inspection. Reports of reinspection after suspension of an inspection certificate shall be submitted by an inspector as soon as notice of corrective action has been received.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-040, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-040, filed 10/26/99, effective 11/26/99; 95-19-058, § 296-104-040, filed 9/15/95, effective 10/16/95; Order 74-37, § 296-104-040, filed 11/8/74; Part II, § 5, filed 3/23/60.]

WAC 296-104-045 Administration—What are the insurance companies' responsibilities? All insurance companies shall notify the chief inspector within thirty days of all boiler and/or unfired pressure vessel risks written, canceled, not renewed or suspended because of unsafe conditions. Special inspectors shall perform all in-service inspections of boilers and unfired pressure vessels insured by their employer. After a repair or alteration the in-service inspector is responsible to assure that proper documentation is completed and submitted to the department in accordance with the rules of the National Board Inspection Code (NBIC) as adopted in WAC 296-104-102.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-045, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-045, filed 10/26/99, effective 11/26/99; 95-19-058, § 296-104-045, filed 9/15/95, effective 10/16/95; Part II, § 6, filed 3/23/60.]

WAC 296-104-055 Administration—What are the examination fees? A fee of \$61.70 will be charged for each applicant sitting for an inspection examination(s). If an applicant fails to pass the examination this fee shall be good for one year during which a reexamination may be taken. Checks for examination fees shall be made payable to the state treasurer.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-12-034, § 296-104-055, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-055, filed 10/26/99, effective 11/26/99. Statutory Authority: RCW 70.79.040. 93-12-014, § 296-104-055, filed 5/21/93, effective 6/21/93. Statutory Authority: RCW 70.79.030 and 70.79.330. 82-24-025 (Order 82-36), § 296-104-055, filed 11/23/82, effective 12/23/82.]

tive 1/1/83; Order 74-37, § 296-104-055, filed 11/8/74; Part II, § 8, filed 3/23/60.]

WAC 296-104-060 Administration—When shall inspectors' commissions be issued, suspended, or revoked? The chief inspector shall issue a commission as a deputy or special inspector in accordance with RCW 70.79.120 and 70.79.130.

The fee for the special inspector commission is twenty-five dollars. The special inspector commission shall be held at the home office of the employing company and shall be valid for one year and may be renewed annually at the request of the employing company for a fee of ten dollars. The deputy inspector commission shall be held by the chief inspector. The deputy inspector commission shall be valid for one year and may be renewed annually at the request of the chief inspector. Inspectors shall carry identifying commission cards while they are inspecting. The state or employing company shall return the commission and the identifying commission card at once to the chief inspector when the inspector to whom the commission was issued is no longer in its employ, or at the request of the chief inspector.

The chief inspector may suspend or revoke a certificate of competency and commission issued to an inspector upon written notice to the inspector and to the inspector's employer for:

- Incompetency or untrustworthiness;
- Willful falsification of any matter or statement contained in the application, or in the report of any inspection; or
- For other sufficient reason.

The holder of a certificate of competency is entitled to a hearing before the board prior to the revocation or suspension of the certificate of competency. A person whose commission has been suspended, except for untrustworthiness, may apply to the board for reinstatement. A person whose commission has been revoked, except for untrustworthiness, may apply to the board to take a new examination for a commission after ninety days from the date of the revocation.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-060, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-060, filed 10/26/99, effective 11/26/99. Statutory Authority: RCW 70.79.040. 94-21-002, § 296-104-060, filed 10/5/94, effective 11/5/94. Statutory Authority: RCW 70.79.030 and 70.79.330. 82-24-025 (Order 82-36), § 296-104-060, filed 11/23/82, effective 1/1/83; Order 74-37, § 296-104-060, filed 11/8/74; Part II, § 9, filed 3/23/60.]

WAC 296-104-065 Administration—How should a certified or commissioned inspector obtain a Washington state commission? Upon the request of a boiler insurance company authorized to insure and insuring against loss from explosion of boilers and/or unfired pressure vessels in this state, or a company with an owner/user inspection agency, a commission as a special inspector of boilers and/or unfired pressure vessels shall be issued by the chief inspector to an inspector in the employ and supervision of such company provided the inspector has had the experience prescribed in RCW 70.79.130 and:

(1) Passed an examination covering the Washington state boilers and unfired pressure vessels law, chapters 70.79 RCW and 296-104 WAC; and

(2) Holds a certificate of competency or commission issued by a state which has adopted one or more sections of the ASME Code, or a national board commission, in either case having taken and passed a written examination equivalent to that required by the state of Washington; or

(3) Is certified by the American Petroleum Institute in accordance with API-510, having taken and passed a written examination equivalent to that required by the state of Washington. Certified API-510 inspectors who are specifically and temporarily in the direct employ of an owner/user inspection agency as set forth in RCW 70.79.130 are exempted from the exam requirement set forth in WAC 296-104-065(1).

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-065, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-065, filed 10/26/99, effective 11/26/99; 96-21-081, § 296-104-065, filed 10/16/96, effective 11/16/96. Statutory Authority: RCW 70.79.040. 94-21-002, § 296-104-065, filed 10/5/94, effective 11/5/94. Statutory Authority: RCW 70.79.030. 78-03-057 (Order 78-3), § 296-104-065, filed 2/22/78; Order 74-37, § 296-104-065, filed 11/8/74; Part II, § 10, filed 3/23/60.]

WAC 296-104-100 Inspection—How often must boilers and unfired pressure vessels be inspected? In accordance with RCW 70.79.080, 70.79.090, and 70.79.240 the following inspection requirements shall apply:

(1) **Power boilers** shall be inspected:

(a) Internally and externally while not under pressure - Annually.

(b) Externally while under pressure - Annually.

(2) **Organic vapor boilers** shall be inspected:

(a) Internally and externally while not under pressure - Biennially.

(b) Externally while under pressure - Annually.

(3) **Low pressure heating boilers** shall be inspected:

(a) Externally while under pressure - Biennially.

(b) Internally while not under pressure (except where construction does not permit an internal) - Every 4th year.

(c) Internally, all steam heating boilers will have as a minimum, an internal of their low water fuel cutoff - Biennially.

(d) Internally, none required for nonvapor boilers using glycol, oil or adequately treated with a corrosion inhibitor.

(4) **Hot water heaters** shall be inspected:

(a) Externally - Biennially.

(b) Internally - None required.

(5) **Unfired pressure vessels** shall be inspected:

(a) Externally - Biennially.

(b) Internally:

(i) When subject to corrosion and construction permits - Biennially. Vessels in an owner/user inspection program may follow intervals established by the NBIC or API-510 eighth edition with supplements, provided nondestructive examination (NDE) is performed at the biennial external inspection.

(ii) Pulp or paper dryer rolls may be inspected on a five-year basis in accordance with TAPPI TIP 0402-16 1999 edition, provided the owner has established a written inspection

program accepted by the inspector that requires the minimums in section 8 of TAPPI TIP 0402-16 1999 edition.

(iii) Vessels not subject to corrosion do not require an internal.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-100, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-100, filed 10/26/99, effective 11/26/99; 98-22-024, § 296-104-100, filed 10/28/98, effective 11/28/98; 95-19-058, § 296-104-100, filed 9/15/95, effective 10/16/95. Statutory Authority: RCW 70.79.040. 94-21-002, § 296-104-100, filed 10/5/94, effective 11/5/94; Part III, § 1, filed 3/23/60.]

WAC 296-104-102 Inspection—What are the standards for in-service inspection? (1) Where a conflict exists between the requirements of the standards listed below and this chapter, this chapter shall prevail.

(2) The standard for inspection of nonnuclear boilers, unfired pressure vessels, and safety devices is the National Board Inspection Code (NBIC), 2001 edition, with addenda. This code may be used on or after the date of issue and becomes mandatory twelve months after adoption by the board as specified in RCW 70.79.050(2).

(3) The standard for inspection of nuclear items is ASME section XI. The ASME Code edition and addenda shall be as specified in the owner in-service inspection program plan.

(4) Where a petroleum or chemical process industry owner/user inspection agency so chooses, the standard for inspection of unfired pressure vessels used by the owner shall be the API-510 Pressure Vessel Inspection Code, eighth edition, with supplements. This code may be used on or after the date of issue.

(5) TAPPI TIP 0402-16, dated 1999 may be used for both pulp dryers and paper machine dryers when requested by the owner. When requested by the owner, this document becomes a requirement and not a guideline.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-102, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-102, filed 10/26/99, effective 11/26/99; 98-22-024, § 296-104-102, filed 10/28/98, effective 11/28/98; 96-21-081, § 296-104-102, filed 10/16/96, effective 11/16/96. Statutory Authority: RCW 70.79.040. 94-21-002, § 296-104-102, filed 10/5/94, effective 11/5/94.]

WAC 296-104-130 Inspection—When are inspection certificates valid? An inspection certificate, issued in accordance with RCW 70.79.290, shall be valid until expiration unless some defect or condition affecting the safety of the boiler or unfired pressure vessel is disclosed or the conditions of RCW 70.79.300 apply.

When an agreement exists between the state and the city jurisdictions of Spokane or Seattle, the certificates for portable boilers and unfired pressure vessels will be considered valid.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-130, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-130, filed 10/26/99, effective 11/26/99; 95-19-058, § 296-104-130, filed 9/15/95, effective 10/16/95; Part III, § 7, filed 3/23/60.]

WAC 296-104-151 Inspection—What are the requirements for rental boilers? Every rental boiler used in the state of Washington will have an internal inspection completed once a year. An operating inspection under pressure shall be conducted by an inspector at each and every rental location before being placed into service. Rental boilers shall also meet the requirements of WAC 296-104-265.

A rental boiler, which has never been in rental service in the state of Washington, shall meet the requirements of WAC 296-104-256. Each operating inspection will be reported to the state of Washington using the standard inspection form and a copy of this report will be posted on the rental boiler.

Inspections will be the responsibility of the rental boiler owner but may be completed by the user's special inspector.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-151, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-151, filed 10/26/99, effective 11/26/99; 96-21-081, § 296-104-151, filed 10/16/96, effective 11/16/96.]

WAC 296-104-200 Construction—What are the standards for new construction? The standards for new construction are:

(1) ASME Boiler and Pressure Vessel Code, 2001 edition, with addenda Sections I, III, IV, VIII, X, and CSD-1 (as referenced in WAC 296-104-265(3));

(2) ASME/ANSI PVHO-1 (Standard for Pressure Vessels for Human Occupancy), 1997 edition; and

(3) Standards of construction approved by the chief inspector and meeting the National Board Criteria for Registration of Boilers, Pressure Vessels and Other Pressure Retaining Items.

These codes and standards may be used on or after the date of issue and become mandatory twelve months after adoption by the board as specified in RCW 70.79.050(2). The board recognizes that the ASME Code states that new editions of the code become mandatory on issue and that subsequent addenda become mandatory six months after the date of issue. For nuclear systems, components and parts the time period for addenda becoming mandatory is defined in the Code of Federal Regulations.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-200, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030, 70.79.040 and chapter 70.79 RCW. 00-21-024, § 296-104-200, filed 10/10/00, effective 11/13/00. Statutory Authority: RCW 70.79.030 and 70.79.040. 98-22-024, § 296-104-200, filed 10/28/98, effective 11/28/98; 97-20-109, § 296-104-200, filed 9/30/97, effective 10/31/97; 96-21-081, § 296-104-200, filed 10/16/96, effective 11/16/96. Statutory Authority: RCW 70.79.040. 93-12-014, § 296-104-200, filed 5/21/93, effective 6/21/93; 92-11-070, § 296-104-200, filed 5/20/92, effective 6/20/92; 91-11-107, § 296-104-200, filed 5/22/91, effective 6/22/91; 90-04-009, § 296-104-200, filed 1/26/90, effective 2/26/90. Statutory Authority: RCW 70.79.040 and 70.79.050. 86-01-088 (Order 85-26), § 296-104-200, filed 12/19/85. Statutory Authority: RCW 70.79.030 and 70.79.330. 84-11-016 (Order 84-09), § 296-104-200, filed 5/10/84; 82-24-025 (Order 82-36), § 296-104-200, filed 11/23/82, effective 1/1/83. Statutory Authority: RCW 70.79.030. 82-05-003 (Order 82-2), § 296-104-200, filed 2/4/82; 81-12-012 (Order 81-10), § 296-104-200, filed 5/28/81; 81-01-114 (Order 80-28), § 296-104-200, filed 12/24/80; 80-05-065 (Order 80-7), § 296-104-200, filed 4/23/80; 79-05-054 (Order 79-7), § 296-104-200, filed 4/30/79; 78-10-096 (Order 78-19), § 296-104-200, filed 10/3/78; Order 77-23, § 296-104-200, filed 11/8/77; Order 77-9, § 296-104-200, filed 5/26/77; Order 75-35, § 296-104-200, filed 10/29/75; Order 74-37, § 296-104-200, filed 11/8/74; Order 73-1, § 296-104-200, filed

3/22/73; Order 72-17, § 296-104-200, filed 9/28/72; Order 72-11, § 296-104-200, filed 7/7/72; Part IV, § 1, filed 3/23/60.]

WAC 296-104-205 Construction—What are the requirements for nonstandard new construction? Those boilers and unfired pressure vessels that are exempted by the codes adopted in WAC 296-104-200 due to volume, temperature or pressure requirements, and are not to be constructed to those codes, must be certified to a nationally recognized testing agency or constructed to WAC 296-104-230. See WAC 296-104-307 for safety pressure relief devices.

Other boilers and unfired pressure vessels that are not to be constructed to the codes adopted in WAC 296-104-200 may be treated as special designs at the discretion of the board. Nonstandard construction shall not be permitted to avoid standard construction.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-205, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030, 70.79.040 and chapter 70.79 RCW. 00-21-024, § 296-104-205, filed 10/10/00, effective 11/13/00. Statutory Authority: RCW 70.79.030 and 70.79.040. 96-21-081, § 296-104-205, filed 10/16/96, effective 11/16/96; Part IV, § 2, filed 3/23/60.]

WAC 296-104-256 Installation—What inspections are required for reinstalled standard boilers or unfired pressure vessels? When a stationary standard boiler or unfired pressure vessel is moved and reinstalled it must be inspected by an inspector. The following will be required:

- (1) The fittings and appliances must comply with the latest codes adopted in WAC 296-104-200.
- (2) An installation permit must be submitted in accordance with WAC 296-104-020.
- (3) For any boiler or unfired pressure vessel the following are required to be documented and submitted:
 - (a) A hydrostatic test up to 150% of the maximum allowable working pressure, MAWP.
 - (b) An internal inspection.
 - (c) An operational test.
 - (d) Any repairs deemed necessary.
 - (e) A complete history of inspection, operation and repairs.
- (4) The following are required unless waived by the inspector:
 - (a) Additional examination or nondestructive testing.
 - (b) A written evaluation by a professional engineer knowledgeable with boilers and pressure vessels, an ASME certificateholder, or a National Board R certificateholder.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-256, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030 and 70.79.040. 96-21-081, § 296-104-256, filed 10/16/96, effective 11/16/96.]

WAC 296-104-265 Installation—What control and limit devices are required on boilers? (1) Installations prior to June 1989: All automatically fired steam, vapor, or hot water boilers except boilers having a constant attendant who has no other duties while the boiler is in operation, shall be equipped with:

- (a) An automatic low-water fuel cut-off; and
- (b) An automatic water feeding device.

(c) All devices shall be designed so that they may be readily tested at frequent intervals.

(2) Installations after June 1989:

(a) All boilers that are automatically fired low pressure steam heating boilers, small power boilers, and power steam boilers without a constant attendant who has no other duties shall be equipped with:

(i) Two high steam pressure limit controls, the highest of which shall be provided with a manual reset.

(ii) Two low-water fuel cut-offs, one of which shall be provided with a manual reset device and independent of the feed water controller.

(iii) Coil type flash steam boilers may use two high-temperature limit controls, one of which shall have a manual reset. This is instead of the low-water fuel cut-off.

(iv) All control and limit devices shall be independently connected and electrically wired in series.

(b) All automatically fired hot water supply, low-pressure hot water heating boilers, and power hot water boilers shall be equipped with:

(i) Two high-temperature limit controls, the highest of which shall be provided with a manual reset.

(ii) One low-water fuel cut-off with a manual reset and independent of the feed water controller.

(iii) For coil type hot water boilers a low-water flow limit control installed in the circulating water line may be used instead of a low-water fuel cut-off.

(iv) All control and limit devices shall be independently connected and electrically wired in series.

(3) Installations or refits of gas, oil, or combinations of gas or oil after December 1998 shall have the following additional requirements:

(a) All boilers excluding lined potable water heaters of all BTU input installed or refitted after December 1998, with fuel input ratings of less than 12,500,000 BTU/hr which are fired by gas, oil, or a combination of gas or oil shall comply with the fuel train requirements defined in ASME CSD-1, as adopted in WAC 296-104-200 where applicable.

(b) Verification of fuel train compliance will be per CSD-1. A CSD-1 report will be filled out and signed by an authorized representative of the manufacturer and/or the installing contractor.

(c) The CSD-1 report must be made available to the authorized inspection agency or the inspector after which a certificate of operation may be issued. The report shall remain in the possession of the boiler owner.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-265, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030, 70.79.040 and chapter 70.79 RCW. 00-21-024, § 296-104-265, filed 10/10/00, effective 11/13/00. Statutory Authority: RCW 70.79.030 and 70.79.040. 98-22-024, § 296-104-265, filed 10/28/98, effective 11/28/98; 97-20-109, § 296-104-265, filed 9/30/97, effective 10/31/97. Statutory Authority: RCW 70.79.240. 88-01-064 (Order 87-25), § 296-104-265, filed 12/17/87; Part IV, § 14, filed 3/23/60.]

WAC 296-104-502 Repairs—What are the requirements for nonnuclear boilers and unfired pressure vessel repairs and alterations? Repairs and alterations to nonnuclear boilers and pressure vessels shall be made in accordance

with the rules of the National Board Inspection Code (NBIC) as adopted in WAC 296-104-102.

Repairs/alterations may be made by:

(1) An organization authorized by the jurisdiction and in possession of a valid Certificate of Authorization for use of the "R" symbol stamp, issued by the National Board provided such repairs/alterations are within the scope of the authorization.

(2) An organization authorized by the chief inspector and in possession of a valid ASME Certificate of Authorization provided such repairs/alterations are within the scope of the organization's Quality Control System. The chief inspector may limit or restrict repairs/alterations for cause.

Owner/user special inspectors may only accept repairs/alterations to boilers and unfired pressure vessels operated by their respective companies per RCW 70.79.130.

Documentation of repairs and alterations, in accordance with the requirements of the National Board Inspection Code (NBIC) as adopted in WAC 296-104-102, shall be submitted to the department.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-502, filed 11/30/01, effective 12/31/01. Statutory Authority: RCW 70.79.030, 70.79.040 and chapter 70.79 RCW. 00-21-024, § 296-104-502, filed 10/10/00, effective 11/13/00. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-22-026, § 296-104-502, filed 10/26/99, effective 11/26/99; 98-22-024, § 296-104-502, filed 10/28/98, effective 11/28/98. Statutory Authority: RCW 70.79.040. 94-21-002, § 296-104-502, filed 10/5/94, effective 11/5/94.]

WAC 296-104-700 What are the inspection fees—

Certificate fees—Expenses? The following fees shall be paid by, or on behalf of, the owner or user upon the completion of the inspection. The inspection fees apply to inspections made by inspectors employed by the state.

Heating boilers:	Internal	External
Cast iron—All sizes	27.80	22.20
All other boilers less than 500 sq. ft.	33.40	22.20
500 sq. ft. to 2500 sq. ft.	55.70	27.80
Each additional 2500 sq. ft. of total heating surface, or any portion thereof	22.20	11.10
Power boilers:	Internal	External
Less than 100 sq. ft.	27.80	22.20
100 sq. ft. to less than 500 sq. ft.	33.40	22.20
500 sq. ft. to 2500 sq. ft.	55.70	27.80
Each additional 2500 sq. ft. of total heating surface, or any portion thereof	22.20	11.10
Pressure vessels:		
Automatic utility hot water supply heaters per RCW 70.79.090		5.50
All other pressure vessels:		
Square feet shall be determined by multiplying the length of the shell by its diameter.		

	Internal	External
Less than 15 sq. ft.	22.20	16.70
	33.40	16.70
15 sq. ft. to less than 50 sq. ft.		
50 sq. ft. to 100 sq. ft.	38.90	22.20
	38.90	11.10
For each additional 100 sq. ft. or any portion thereof		
Certificate of inspection fees: For objects inspected, the certificate of inspection fee is \$16.70 per object.		
Boiler and pressure vessel installation/reinstallation permit (excludes inspection)		\$50.00
Nonnuclear shop inspections, field construction inspections, and special inspection services:		
For each hour or part of an hour up to 8 hours		33.40
For each hour or part of an hour in excess of 8 hours		50.10
Nuclear shop inspections, nuclear field construction inspections, and nuclear triennial shop survey and audit:		
For each hour or part of an hour up to 8 hours		50.10
For each hour or part of an hour in excess of 8 hours		77.90
Nonnuclear triennial shop survey and audit:		
When state is authorized inspection agency:		
For each hour or part of an hour up to 8 hours		33.40
For each hour or part of an hour in excess of 8 hours		50.10
When insurance company is authorized inspection agency:		
For each hour or part of an hour up to 8 hours		50.10
For each hour or part of an hour in excess of 8 hours		77.90
Expenses shall include:		
Travel time and mileage: The department shall charge for its inspectors' travel time from their offices to the inspection sites and return. The travel time shall be charged for at the same rate as that for the inspection, audit, or survey. The department shall also charge the current Washington office of financial management accepted mileage cost fees or the actual cost of purchased transportation. Hotel and meals: Actual cost not to exceed the office of financial management approved rate.		
Reinspection fee: Same as the fee for the previous inspection during which discrepancies were reported. The fee will be charged only if the discrepancies are not corrected		

before the reinspection. The fee shall not exceed \$26.70. Washington state specials: For each vessel to be considered by the board for a Washington state special certificate, a fee of \$308.60 must be paid to the department before the board meets to consider the vessel. The board may, at its discretion, prorate the fee when a number of vessels that are essentially the same are to be considered.

[Statutory Authority: RCW 70.79.030, 70.79.040, 70.79.150, 70.79.290, 70.79.330, 70.79.350, and chapter 70.79 RCW. 01-24-061, § 296-104-700, filed 11/30/01, effective 12/31/01; 01-12-034, § 296-104-700, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 70.79.030, 70.79.040 and chapter 70.79 RCW. 00-21-024, § 296-104-700, filed 10/10/00, effective 11/13/00. Statutory Authority: RCW 70.79.030 and 70.79.040. 99-08-049, § 296-104-700, filed 4/1/99, effective 5/2/99; 98-09-064, § 296-104-700, filed 4/20/98, effective 5/21/98. Statutory Authority: RCW 70.79.040. 93-12-014, § 296-104-700, filed 5/21/93, effective 6/21/93. Statutory Authority: RCW 70.79.030 and 70.79.330. 84-21-012 (Order 84-20), § 296-104-700, filed 10/5/84; 84-11-016 (Order 84-09), § 296-104-700, filed 5/10/84; 82-24-025 (Order 82-36), § 296-104-700, filed 11/23/82, effective 1/1/83; Order 77-23, § 296-104-700, filed 11/8/77; Emergency Order 77-22, § 296-104-700, filed 11/8/77.]

Chapter 296-131 WAC

AGRICULTURAL EMPLOYMENT STANDARDS

WAC

296-131-117 Minimum wages—Minors.

WAC 296-131-117 Minimum wages—Minors.

Except where a higher minimum wage is required by Washington state or federal law:

WAC 296-150C-3000 Commercial coach fees.

(1) Every employer shall pay to each employee who has reached their sixteenth or seventeenth year of age a rate of pay per hour which is equal to the hourly rate required by RCW 49.46.020 for employees eighteen years of age or older, whether computed on an hourly, commission, piecework, or other basis, except as may be otherwise provided under this chapter.

(2) Every employer shall pay to each employee who has not reached their sixteenth year of age a rate of pay per hour that is not less than eighty-five percent of the hourly rate required by RCW 49.46.020 for employees eighteen years of age or older, whether computed on an hourly, commission, piecework, or other basis, except as may be otherwise provided under this chapter.

(3) These minimum wage provisions shall not apply when a minor student is in a work place to carry out an occupational training experience assignment directly supervised on the premises by a school official or an employer under contract with a school, and when no appreciable benefit is rendered to the employer by the presence of the minor student.

[Statutory Authority: RCW 43.22.270, 49.46.020, and chapters 43.22, 49.30, and 49.46 RCW. 01-13-012, § 296-131-117, filed 6/11/01, effective 7/12/01.]

Chapter 296-150C WAC

COMMERCIAL COACHES

WAC

296-150C-3000 Commercial coach fees.

WAC 296-150C-3000 COMMERCIAL COACH FEES	
INITIAL FILING FEE	\$28.80
DESIGN PLAN FEES:	
INITIAL FEE - MASTER DESIGN	\$197.50
INITIAL FEE - ONE YEAR DESIGN	\$81.00
RENEWAL FEE	\$34.40
RESUBMIT FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan)	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
ELECTRICAL PLAN REVIEW (When required by WAC 296-46A-140. Plan review for educational, institutional or health care facilities and other buildings)	
Electrical Plan submission fee	\$57.80
Service/feeder Ampacity:	
0 - 100	\$25.70
101 - 200	\$32.10
201 - 400	\$59.90
401 - 600	\$70.70
601 - 800	\$91.00
801 - 1000	\$111.30
Over 1000	\$120.80
Over 600 volts surcharge	\$19.20
Thermostats:	
First	\$11.50
Each additional	\$3.00
Low voltage fire alarm and burglar alarm:	
Each control panel and up to four circuits or zones	\$10.50

WAC 296-150C-3000 COMMERCIAL COACH FEES	
Each additional circuit or zone	\$2.00
Generators, refer to appropriate service/feeder ampacity fees	
<i>Note: Altered services or feeders shall be charged the above rate per the service/feeder ampacity fees.</i>	
Supplemental submissions of plans (resubmittals, addendums, renewals, code updates, etc.) shall be charged per hour or fraction of an hour*	\$68.40
MEDICAL GAS PLAN REVIEW:	
SUBMISSION FEE	\$55.50
FIRST STATION	\$55.50
EACH ADDITIONAL STATION	\$20.50
RECIPROCAL PLAN REVIEW:	
INITIAL FEE - MASTER DESIGN	\$88.20
INITIAL FEE - ONE YEAR DESIGN	\$53.40
RENEWAL FEE	\$53.40
ADDENDUM	\$53.40
PLANS APPROVED BY PROFESSIONALS	\$40.30
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$11.00
DEPARTMENT INSPECTION FEES	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$57.80
TRAVEL (Per hour)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$57.80
TRAVEL (Per hour*)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION	\$16.90
EACH ADDITIONAL SECTION	\$11.00
ALTERATION	\$28.80
REISSUED-LOST/DAMAGED	\$11.00
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$57.80
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free copy per year upon request)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments	
** Per state guidelines	
*** Actual charges incurred	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150C-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: Chapters 43.22, 18.27, 70.87 and 19.28 RCW. 99-12-080, § 296-150C-3000, filed 5/28/99, effective 6/28/99. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-150C-3000, filed 5/29/98, effective 6/30/98. Statutory Authority: RCW 70.87.030, 18.27.070, [18.27.]075, 43.22.350, [43.22.]355, [43.22.]434 and [43.22.]480(2). 97-11-053, § 296-150C-3000, filed 5/20/97, effective 6/30/97. Statutory Authority: RCW 43.22.340, [43.22.]355, [43.22.]360, [43.22.]432, [43.22.]440 and [43.22.]480. 96-21-146, § 296-150C-3000, filed 10/23/96, effective 11/25/96.]

Chapter 296-150F WAC

FACTORY-BUILT HOUSING AND COMMERCIAL
STRUCTURES

WAC

296-150F-3000 Factory-built housing and commercial structure fees.

WAC 296-150F-3000 Factory-built housing and commercial structure fees.

WAC 296-150F-3000 FACTORY-BUILT HOUSING AND COMMERCIAL STRUCTURES	
INITIAL FILING FEE	\$40.30
DESIGN PLAN FEES:	
INITIAL FEE - MASTER DESIGN (CODE CYCLE)	\$197.50
INITIAL FEE - ONE YEAR DESIGN	\$115.90
RENEWAL FEE	\$40.30
RESUBMIT FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan.)	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
ELECTRICAL PLAN REVIEW (When required by WAC 296-46A-140, Plan review for educational, institutional or health care facilities and other buildings):	
Electrical Plan submission fee	\$57.80
Service/feeder Ampacity:	
0 - 100	\$25.70
101 - 200	\$32.10
201 - 400	\$59.90
401 - 600	\$70.70
601 - 800	\$91.00
801 - 1000	\$111.30
Over 1000	\$120.80
Over 600 volts surcharge	\$19.20
Thermostats:	
First	\$11.50
Each additional	\$3.00
Low voltage fire alarm and burglar alarm:	
Each control panel and up to four circuits or zones	\$10.50
Each additional circuit or zone	\$2.00
Generators, refer to appropriate service/feeder ampacity fees	
Note: Altered services or feeders shall be charged the above rate per the service/feeder ampacity fees.	
Supplemental submissions of plans (resubmittals, addendums, renewals, code updates, etc.) will be charged per hour or fraction of an hour*	\$68.40
MEDICAL GAS PLAN REVIEW:	
SUBMISSION FEE	\$55.50
FIRST STATION	\$55.50
EACH ADDITIONAL STATION	\$20.50
RECIPROCAL PLAN REVIEW:	
INITIAL FEE-MASTER DESIGN	\$88.20
INITIAL FEE-ONE YEAR DESIGN	\$53.40
RENEWAL FEE	\$53.40
ADDENDUM	\$53.40
PLANS APPROVED BY PROFESSIONALS	\$40.30
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$11.00
DEPARTMENT INSPECTION FEES	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$57.80
TRAVEL (Per hour*)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	

WAC 296-150F-3000 FACTORY-BUILT HOUSING AND COMMERCIAL STRUCTURES	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$57.80
TRAVEL (Per hour*)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION	\$162.50
EACH ADDITIONAL SECTION	\$15.90
REISSUED-LOST/DAMAGED	\$40.30
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$57.80
NOTIFICATION TO LOCAL ENFORCEMENT AGENCY (NLEA)	\$23.90
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free copy per year upon request)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments.	
** Per state guidelines.	
*** Actual charges incurred.	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150F-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: Chapters 43.22, 18.27, 70.87 and 19.28 RCW. 99-12-080, § 296-150F-3000, filed 5/28/99, effective 6/28/99. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-150F-3000, filed 5/29/98, effective 6/30/98. Statutory Authority: RCW 70.87.030, 18.27.070, [18.27.075, 43.22.350, [43.22.]355, [43.22.]434 and [43.22.]480(2). 97-11-053, § 296-150F-3000, filed 5/20/97, effective 6/30/97. Statutory Authority: RCW 43.22.340, [43.22.]355, [43.22.]360, [43.22.]432, [43.22.]440 and [43.22.]480. 96-21-146, § 296-150F-3000, filed 10/23/96, effective 11/25/96.]

Chapter 296-150M WAC MANUFACTURED HOMES

WAC

296-150M-3000 Manufactured home fees.

WAC 296-150M-3000 Manufactured home fees.

WAC 296-150M-3000 MANUFACTURED HOME FEES	
INITIAL FILING FEE	\$ 28.80
DESIGN PLAN FEES:	
STRUCTURAL ALTERATION-MASTER DESIGN (CODE CYCLE)	\$ 115.90
STRUCTURAL ALTERATION - ONE YEAR DESIGN	\$ 81.00
RENEWAL FEE	\$ 34.70
RESUBMITTAL FEE	\$ 57.80
ADDENDUM (Approval expires on the same date as original plan.)	\$ 57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
DEPARTMENT INSPECTION FEES:	
INSPECTION (Per hour*)	\$ 57.80
OTHER REQUIRED INSPECTIONS (Per hour*)	\$ 57.80
ALL REINSPECTIONS (Per hour*)	\$ 57.80
INSIGNIA FEES:	
ALTERATION	\$ 28.80
REISSUED - LOST/DAMAGED	\$ 16.90
IPIA	
DEPARTMENT AUDIT FEES	
REGULARLY SCHEDULED IPIA AUDIT:	
First inspection on each section (one time only)	\$ 26.40
Second and succeeding inspections of unlabelled sections (Per hour*)	\$ 57.80
OTHER IPIA FEES:	
Red tag removal during a regularly scheduled IPIA audit (Per hour* separate from other fees)	\$ 57.80
Red tag removal at a time other than a regularly scheduled IPIA audit (Per hour* plus travel time* and	

WAC 296-150M-3000 MANUFACTURED HOME FEES	
mileage**)	\$ 57.80
Increased frequency surveillance (Per hour* plus travel time* and mileage**)	\$ 57.80
Attendance at manufacturers training classes (Per hour* only)	\$ 57.80
Subpart "I" investigations (Per hour* plus travel time* and mileage**)	\$ 57.80
Alterations to a labelled unit (Per hour* plus travel time* and mileage**)	\$ 57.80
IPIA Issues/Responses (Per hour* Plus travel time* and mileage**)	\$ 57.80
Monthly surveillance during a regularly scheduled IPIA audit (Per hour* plus travel time* and mileage**)	\$ 57.80
Monthly surveillance at a time other than a regularly scheduled IPIA audit (Per hour* plus travel time* and mileage**)	\$ 57.80
Plant certifications, recertifications and addenda updates (Per hour* plus travel time* and mileage per each inspector)	\$ 57.80
Response to HBT Audit during a regularly scheduled IPIA audit (Per hour*)	\$ 57.80
Response to HBT Audit at a time other than a regularly scheduled IPIA audit (Per hour* plus travel time* and mileage**)	\$ 57.80
Alternative construction (AC) letter inspections at placement site (Per hour* plus travel time* and mileage**)	\$ 57.80
Replacement of HUD labels (Per hour* plus travel time* and mileage**)	\$ 57.80
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour plus travel time* and mileage**)	\$ 57.80
PUBLICATION PRINTING AND DISTRIBUTION OF RCWs AND WACs (One free copy per year upon request)	\$ 11.00
NOTE: Local jurisdictions may have other fees that apply.	
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments.	
** Per state guidelines.	
*** Actual charges incurred.	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150M-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 43.22.340, 43.22.350, 43.22.355, 43.22.360, 43.22.400, 43.22.432, 43.22.433, 43.22.434, 43.22.450, 43.22.480, and 43.22.485. 00-17-148, § 296-150M-3000, filed 8/22/00, effective 9/30/00. Statutory Authority: Chapters 43.22, 18.27, 70.87 and 19.28 RCW. 99-12-080, § 296-150M-3000, filed 5/28/99, effective 6/28/99. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-150M-3000, filed 5/29/98, effective 6/30/98. Statutory Authority: RCW 70.87.030, 18.27.070, [18.27.]075, 43.22.350, [43.22.]355, [43.22.]434 and [43.22.]480(2). 97-11-053, § 296-150M-3000, filed 5/20/97, effective 6/30/97. Statutory Authority: RCW 43.22.340, [43.22.]355, [43.22.]360, [43.22.]432, [43.22.]440 and [43.22.]480. 96-21-146, § 296-150M-3000, filed 10/23/96, effective 11/25/96.]

Chapter 296-150P WAC RECREATIONAL PARK TRAILERS

WAC

296-150P-3000 Recreational park trailer fees.

WAC 296-150P-3000 Recreational park trailer fees.

WAC 296-150P-3000 RECREATIONAL PARK TRAILER FEES	
INITIAL FILING FEE	\$28.80
DESIGN PLAN FEES:	
NEW PLAN REVIEW FEE WITHOUT STRUCTURAL REQUIREMENTS	\$81.00
NEW PLAN REVIEW FEE WITH STRUCTURAL REQUIREMENTS	\$106.90
RESUBMITTAL FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan.)	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
QUALITY CONTROL/MANUAL FEES:	
INITIAL APPROVAL	\$11.00
RESUBMITTAL FEE	\$57.80
ADDENDUM	\$57.80
DEPARTMENT AUDIT FEES:	
AUDIT (per hour)*	\$57.80
TRAVEL (per hour)*	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT INSPECTION FEES:	
INSPECTION (per hour)*	\$57.80
TRAVEL (per hour)*	\$57.80
PER DIEM**	
HOTEL***	

WAC 296-150P-3000 RECREATIONAL PARK TRAILER FEES	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
STATE CERTIFIED	\$10.80
ALTERATION	\$28.80
REISSUED-LOST/DAMAGED	\$10.80
OTHER FEES:	
FIELD TECHNICAL SERVICE (per hour* plus travel time* and mileage**)	\$57.80
PUBLICATION PRINTING AND DISTRIBUTION OF RCWs AND WACs (One free copy per year upon request)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments.	
** Per state guidelines.	
*** Actual charges incurred.	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150P-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 43.22.340, 43.22.350, 43.22.355, 43.22.360, 43.22.400, 43.22.432, 43.22.433, 43.22.434, 43.22.450, 43.22.480, and 43.22.485. 00-17-148, § 296-150P-3000, filed 8/22/00, effective 9/30/00. Statutory Authority: Chapters 43.22, 18.27, 70.87 and 19.28 RCW. 99-12-080, § 296-150P-3000, filed 5/28/99, effective 6/28/99. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-150P-3000, filed 5/29/98, effective 6/30/98. Statutory Authority: RCW 43.22.340 and 43.22.420. 97-16-043, § 296-150P-3000, filed 7/31/97, effective 12/1/97.]

Chapter 296-150R WAC RECREATIONAL VEHICLES

WAC

296-150R-3000 Recreational vehicle fees.

WAC 296-150R-3000 Recreational vehicle fees.

WAC 296-150R-3000 RECREATIONAL VEHICLE FEES	
STATE PLAN	
INITIAL FILING FEE	\$28.80
DESIGN PLAN FEES:	
NEW PLAN REVIEW FEE	\$81.00
RESUBMITTAL FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan.)	\$57.80
QUALITY CONTROL/MANUAL FEES:	
INITIAL APPROVAL	\$11.00
RESUBMITTAL FEE	\$57.80
ADDENDUM	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
DEPARTMENT AUDIT FEES:	
AUDIT (per hour)*	\$57.80
TRAVEL (per hour)*	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING	
AIRFARE***	
DEPARTMENT INSPECTION FEES:	
INSPECTION (per hour)*	\$57.80
TRAVEL (per hour)*	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
STATE CERTIFIED	\$10.50
ALTERATION	\$28.80
REISSUED-LOST/DAMAGED	\$10.50

WAC 296-150R-3000 RECREATIONAL VEHICLE FEES	
OTHER FEES:	
FIELD TECHNICAL SERVICE (per hour* plus travel time* and mileage**)	\$57.80
PUBLICATION PRINTING AND DISTRIBUTION OF RCWs AND WACs (One free copy per year)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments.	
** Per state guidelines.	
*** Actual charges incurred.	
WAC 296-150R-3000 RECREATIONAL VEHICLE FEES	
SELF CERTIFICATION	
INITIAL FILING FEE	\$28.80
DESIGN PLAN FEES:	
NEW PLAN REVIEW FEE (one time fee)	\$81.00
RESUBMITTAL FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan.)	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
SELF CERTIFICATION/MANUAL FEES:	
INITIAL APPROVAL	\$11.00
RESUBMITTAL FEE	\$57.80
ADDENDUM	\$57.80
DEPARTMENT AUDIT FEES:	
AUDIT (per hour)*	\$57.80
TRAVEL (per hour)*	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING	
AIRFARE***	
DEPARTMENT INSPECTION FEES:	
INSPECTION (per hour)*	\$57.80
TRAVEL (per hour)*	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
SELF CERTIFIED	\$10.50
ALTERATION	\$28.80
REISSUED-LOST/DAMAGED	\$10.50
OTHER FEES:	
FIELD TECHNICAL SERVICE (per hour* plus travel time* and mileage**)	\$57.80
PUBLICATION PRINTING AND DISTRIBUTION OF RCWs AND WACs (One free copy per year)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments.	
** Per state guidelines.	
*** Actual charges incurred.	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150R-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 43.22.340, 43.22.350, 43.22.355, 43.22.360, 43.22.400, 43.22.432, 43.22.433, 43.22.434, 43.22.450, 43.22.480, and 43.22.485. 00-17-148, § 296-150R-3000, filed 8/22/00, effective 9/30/00. Statutory Authority: Chapters 43.22, 18.27, 70.87 and 19.28 RCW. 99-12-080, § 296-150R-3000, filed 5/28/99, effective 6/28/99. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-150R-3000, filed 5/29/98, effective 6/30/98. Statutory Authority: RCW 43.22.340 and 43.22.420. 97-16-043, § 296-150R-3000, filed 7/31/97, effective 12/1/97. Statutory Authority: RCW 43.22.340, [43.22.]355, [43.22.]360, [43.22.]432, [43.22.]440 and [43.22.]480. 96-21-146, § 296-150R-3000, filed 10/23/96, effective 11/25/96.]

Chapter 296-150T WAC

FACTORY-BUILT TEMPORARY WORKER
HOUSING STRUCTURES

WAC

296-150T-3000 Factory-built temporary worker housing fees.

WAC 296-150T-3000 Factory-built temporary worker housing fees.

WAC 296-150T-3000 TEMPORARY WORKER HOUSING FEES	
INITIAL FILING FEE	\$40.30
DESIGN PLAN FEES:	
INITIAL ONE YEAR DESIGN	\$115.90
RENEWAL FEE	\$40.30
RESUBMIT FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan)	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
Supplemental submissions of plans (resubmittals, addendums, renewals, code updates, etc.) shall be charged per hour or fraction of an hour*	\$68.40
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$11.00
DEPARTMENT INSPECTION FEES	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$57.80
TRAVEL (Per hour*)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$57.80
TRAVEL (Per hour*)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION	\$162.50
EACH ADDITIONAL SECTION	\$15.90
REISSUED-LOST/DAMAGED	\$40.30
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$57.80
NOTIFICATION TO LOCAL ENFORCEMENT AGENCY (NLEA)	\$23.90
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free per year)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments	
** Per state guidelines	
*** Actual charges incurred	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150T-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 43.22.480. 99-12-079, § 296-150T-3000, filed 5/28/99, effective 6/28/99.]

Chapter 296-150V WAC
CONVERSION VENDOR UNITS AND MEDICAL
UNITS

WAC

296-150V-3000 Conversion vendor units and medical units—Fees.

WAC 296-150V-3000 Conversion vendor units and medical units—Fees.

WAC 296-150V-3000 CONVERSION VENDOR UNITS AND MEDICAL UNITS	
INITIAL FILING FEE	\$28.80
DESIGN PLAN FEES:	
INITIAL FEE - MASTER DESIGN	\$197.50
INITIAL FEE - ONE YEAR DESIGN	\$81.00
RENEWAL FEE	\$34.70
RESUBMIT FEE	\$57.80
ADDENDUM (Approval expires on same date as original plan)	\$57.80
ELECTRONIC PLAN SUBMITTAL FEE \$4.50 per page for the first set of plans and \$0.30 per page for each additional set of plans. These fees are in addition to any applicable design plan fees required under this section.	
RECIPROCAL PLAN REVIEW: (Pending)	
INITIAL FEE - MASTER DESIGN	\$88.20
INITIAL FEE - ONE YEAR DESIGN	\$53.40
RENEWAL FEE	\$53.40
ADDENDUM	\$53.40
APPROVAL OF EACH SET OF DESIGN PLANS BEYOND FIRST TWO SETS	\$11.00
DEPARTMENT INSPECTION FEES:	
INSPECTION/REINSPECTION (Per hour* plus travel time* and mileage**)	\$57.80
TRAVEL (Per hour)*	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
DEPARTMENT AUDIT FEES:	
AUDIT (Per hour*)	\$57.80
TRAVEL (Per hour*)	\$57.80
PER DIEM**	
HOTEL***	
MILEAGE**	
RENTAL CAR***	
PARKING***	
AIRFARE***	
INSIGNIA FEES:	
FIRST SECTION	\$16.90
ALTERATION	\$28.80
REISSUED-LOST/DAMAGED	\$11.00
OTHER FEES:	
FIELD TECHNICAL SERVICE (Per hour* plus travel time* and mileage**)	\$57.80
PUBLICATION PRINTING AND DISTRIBUTION OF RCW'S AND WAC'S (One free copy per year upon request)	\$11.00
* Minimum charge of 1 hour; time spent greater than 1 hour is charged in 1/2 hour increments.	
** Per state guidelines.	
*** Actual charges incurred.	

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-150V-3000, filed 5/29/01, effective 6/29/01. Statutory Authority: Chapter 43.22 RCW. 99-18-069, § 296-150V-3000, filed 8/31/99, effective 10/1/99.]

Chapter 296-155 WAC

SAFETY STANDARDS FOR CONSTRUCTION WORK

WAC

296-155-005	Purpose and scope.
296-155-110	Accident prevention program.
296-155-120	First-aid training and certification.
296-155-125	First-aid supplies.
296-155-130	First-aid station.
296-155-140	Sanitation.
296-155-17321	Hygiene facilities and practices.
296-155-17323	Communication of hazards to employees.
296-155-174	Cadmium.
296-155-17609	Exposure assessment.
296-155-17615	Protective work clothing and equipment.
296-155-17625	Employee information and training.
296-155-180	Hazard communication.
296-155-200	General requirements.
296-155-20301	Definitions.
296-155-205	Head protection.
296-155-260	Fire protection.
296-155-270	Flammable and combustible liquids.
296-155-275	Liquefied petroleum gas (LP-gas).
296-155-305	Signaling and flaggers.
296-155-407	Protective clothing.
296-155-525	Cranes and derricks.
296-155-575	Helicopters and helicopter cranes.
296-155-625	Site clearing.
296-155-730	Tunnels and shafts.
296-155-745	Compressed air.

WAC 296-155-005 Purpose and scope. (1) The standards included in this chapter apply throughout the state of Washington, to any and all work places subject to the Washington Industrial Safety and Health Act (chapter 49.17 RCW), where construction, alteration, demolition, related inspection, and/or maintenance and repair work, including painting and decorating, is performed. These standards are minimum safety requirements with which all industries must comply when engaged in the above listed types of work.

(2) If a provision of this chapter conflicts with a provision of the general safety and health standard (chapter 296-24 WAC), the general occupational health standard (chapter 296-62 WAC), or the safety and health core rules (chapter 296-800 WAC), the provision of this chapter shall prevail. When a provision of this chapter conflicts with a provision of another vertical safety standard applying to the place of work, the provisions of the vertical standard of specific application shall prevail.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-005, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-005, filed 1/21/86. 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), § 296-155-005, filed 11/13/80; Order 76-29, § 296-155-005, filed 9/30/76; Order 74-26, § 296-155-005, filed 5/7/74, effective 6/6/74.]

WAC 296-155-110 Accident prevention program. (1) Exemptions. Workers of employers whose primary business is other than construction, who are engaged solely in maintenance and repair work, including painting and decorating, are exempt from the requirement of this section provided:

(a) The maintenance and repair work, including painting and decorating, is being performed on the employer's premises, or facility.

(b) The length of the project does not exceed one week.

(c) The employer is in compliance with the requirements of WAC 296-800-140 Accident prevention program, and WAC 296-800-130, Safety committees and safety meetings.

(2) Each employer shall develop a formal accident-prevention program, tailored to the needs of the particular plant or operation and to the type of hazard involved. The department may be contacted for assistance in developing appropriate programs.

(3) The following are the minimal program elements for all employers:

A safety orientation program describing the employer's safety program and including:

(a) How, where, and when to report injuries, including instruction as to the location of first-aid facilities.

(b) How to report unsafe conditions and practices.

(c) The use and care of required personal protective equipment.

(d) The proper actions to take in event of emergencies including the routes of exiting from areas during emergencies.

(e) Identification of the hazardous gases, chemicals, or materials involved along with the instructions on the safe use and emergency action following accidental exposure.

(f) A description of the employer's total safety program.

(g) An on-the-job review of the practices necessary to perform the initial job assignments in a safe manner.

(4) Each accident-prevention program shall be outlined in written format.

(5) Every employer shall conduct crew leader-crew safety meetings as follows:

(a) Crew leader-crew safety meetings shall be held at the beginning of each job, and at least weekly thereafter.

(b) Crew leader-crew meetings shall be tailored to the particular operation.

(6) Crew leader-crew safety meetings shall address the following:

(a) A review of any walk-around safety inspection conducted since the last safety meeting.

(b) A review of any citation to assist in correction of hazards.

(c) An evaluation of any accident investigations conducted since the last meeting to determine if the cause of the unsafe acts or unsafe conditions involved were properly identified and corrected.

(d) Attendance shall be documented.

(e) Subjects discussed shall be documented.

Note: Subcontractors and their employees may, with the permission of the general contractor, elect to fulfill the requirements of subsection (5)(a) and (b) of this section by attending the prime contractors crew leader-crew safety meeting. Any of the requirements of subsections (6)(a), (b), (c), and (7) of this section not satisfied by the prime contractors safety meetings shall be the responsibility of the individual employers.

(7) Minutes of each crew leader-crew meeting shall be prepared and a copy shall be maintained at the location where the majority of the employees of each construction site report for work each day.

(8) Minutes of crew leader-crew safety meetings shall be retained by the employer for at least one year and shall be

made available for review by personnel of the department, upon request.

(9) Every employer shall conduct walk-around safety inspections as follows:

(a) At the beginning of each job, and at least weekly thereafter, a walk-around safety inspection shall be conducted jointly by one member of management and one employee, elected by the employees, as their authorized representative.

(b) The employer shall document walk-around safety inspections and such documentation shall be available for inspection by personnel of the department.

(c) Records of walk-around inspections shall be maintained by the employer until the completion of the job.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-110, filed 5/9/01, effective 9/1/01; 00-08-078, § 296-155-110, filed 4/4/00, effective 7/1/00. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-110, filed 7/20/94, effective 9/20/94; 92-09-148 (Order 92-01), § 296-155-110, filed 4/22/92, effective 5/25/92. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-110, filed 1/21/86; Order 74-26, § 296-155-110, filed 5/7/74, effective 6/6/74.]

WAC 296-155-120 First-aid training and certification. This section is designed to assure that all employees in this state are afforded quick and effective first-aid attention in the event of an on the job injury. To achieve this purpose the presence of personnel trained in first-aid procedures at or near those places where employees are working is required. Compliance with the provisions of this section may require the presence of more than one first-aid trained person.

(1) The first-aid training requirements of the safety and health core rules, chapter 296-800 WAC, apply within the scope of chapter 296-155 WAC.

(2) Each employer must have available at all worksites, where a crew is present, a person or persons holding a valid first-aid certificate.

(3) All crew leaders, supervisors or persons in direct charge of one or more employees must have a valid first-aid certificate.

(4) For the purposes of this section, a crew means a group of two or more employees working at any worksite.

Note: The requirement that all crew leaders, supervisors or person in direct charge of one or more employees (subsection (3) of this section) applies even if other first-aid trained person(s) are available. In emergencies, crew leaders will be permitted to work up to thirty days without having the required certificate, providing an employee in the crew or another crew leaders in the immediate work area has the necessary certificate.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-120, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-155-120, filed 12/7/99, effective 2/1/00. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-120, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-120, filed 1/21/86; Order 74-26, § 296-155-120, filed 5/7/74, effective 6/6/74.]

WAC 296-155-125 First-aid supplies. (1) The first-aid kits and supplies requirements of the safety and health core rules, chapter 296-800 WAC, apply within the scope of chapter 296-155 WAC.

(2) All vehicles used to transport work crews must be equipped with first-aid supplies.

(3) When practical, a poster must be fastened and maintained either on or in the cover of each first-aid kit and at or near all phones plainly stating the worksite address or location, and the phone numbers of emergency medical responders for the worksite.

(4) Requirements of WAC 296-62-130, Emergency washing facilities, apply within the scope of chapter 296-155 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-125, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-155-125, filed 12/7/99, effective 2/1/00. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-125, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-125, filed 1/21/86; Order 74-26, § 296-155-125, filed 5/7/74, effective 6/6/74.]

WAC 296-155-130 First-aid station. Employers with fifty or more employees per shift at one location must establish a first-aid station in accordance with the requirements in chapter 296-800 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-130, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-155-130, filed 12/7/99, effective 2/1/00. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-130, filed 1/21/86; Order 74-26, § 296-155-130, filed 5/7/74, effective 6/6/74.]

WAC 296-155-140 Sanitation. (1) Potable water.

(a) An adequate supply of potable water shall be provided in all places of employment.

(b) Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. Water shall not be dipped from containers.

(c) Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

(d) The common drinking cup is prohibited.

(e) Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

(f) All water containers used to furnish drinking water shall be thoroughly cleaned at least once each week or more often as conditions require.

(g) The requirements of this subsection do not apply to mobile crews or to normally unattended work locations as long as employees working at these locations have transportation immediately available, within the normal course of their duties, to nearby facilities otherwise meeting the requirements of this section.

(h) The following definitions apply:

(i) Mobile crew: A work crew that routinely moves to a different work location periodically. Normally a mobile crew is not at the same location all day.

(ii) Normally unattended work location: An unattended site that is visited occasionally by one or more employees.

(iii) Nearby facility: A sanitary facility that is within three minutes travel by the transportation provided.

(iv) "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.

(2) Wash water.

(a) Clean, tepid wash water, between 70 and 100 degrees Fahrenheit, shall be provided at all construction sites.

(b) Individual hand towels shall be provided. Both a sanitary container for the unused towels and a receptacle for disposal of used towels shall be provided.

(c) Hand soap, industrial hand cleaner or similar cleansing agents shall be provided. Cleansing agents shall be adequate to remove any paints, coatings, herbicides, insecticides or other contaminants.

(d) The requirements of this subsection do not apply to mobile crews or to normally unattended work locations as long as employees working at these locations have transportation immediately available, within the normal course of their duties, to nearby facilities otherwise meeting the requirements of this section.

(e) Gasoline or solvents shall not be used for personal cleaning.

(f) Wash water areas will be maintained in a dry condition. Slipping or other hazards shall be eliminated from the wash water area before it is acceptable for use.

(3) Nonpotable water.

(a) Outlets for nonpotable water, such as water for industrial or fire fighting purposes only, shall be identified by signs meeting the requirements of Part E of this chapter, to indicate clearly that the water is unsafe and is not to be used for drinking, washing or cooking purposes.

(b) There shall be no cross-connection, open or potential, between a system furnishing potable water, a system furnishing nonpotable water or a system furnishing wash water.

(4) Toilets.

(a) The provisions of this section apply to both portable chemical toilets and to flush toilets, except where flush toilets are used the requirements of WAC 296-800-230 shall apply instead of (b) of this subsection.

(b) Accessible toilets shall be provided for employees according to the following table:

TABLE B-1

<u>Number of Employees</u>	<u>Toilets Required</u>
1 - 10	1
11 - 25	2
26 - 40	3
41 - 60	4
61 - 80	5
Over 80	one additional toilet for each additional twenty employees or any fraction thereof.

(c) When the employer provides both flush and portable chemical toilets, the number of employees allowed to be served by the flush toilets, per WAC 296-800-230 will be calculated. That number will be subtracted from the total number of employees and the employer will be required to provide an adequate number of portable chemical toilets for the

number of remaining employees, as required by (b) of this subsection.

(d) Toilets shall be maintained in clean, sanitary and functional condition. Internal latches shall be provided to secure the units from inadvertent entry. Where there are twenty or more employees consisting of both sexes, facilities shall be provided for each sex.

(i) Each unit shall be properly cleaned on a routine basis.

(ii) Chemicals, toilet tissue and sanitary seat covers shall be maintained in a supply sufficient for use during the entire shift.

(iii) Any defective or inadequate unit shall be immediately removed from service.

(e) Specifications. The following specifications apply:

(i) A noncaustic chemical toilet (portable chemical toilet is) a self-contained unit equipped with a waste receiving chemical holding container.

(ii) Portable chemical toilets consisting of only a holding tank, commonly referred to as "elevator units" or "elevator toilets" are not acceptable. "Elevator units" may be used if they are individually located in a lockable room which affords privacy. When this type unit is used in a private individual lockable room the entire room will be considered a toilet facility, as such the room will meet all requirements of toilet facilities and be inspected in accordance with subsection (5)(b)(iii) of this section.

(iii) Rooms, buildings or shelters housing toilets shall be of sound construction, easy to clean, provide shelter and provide privacy. The toilet rooms shall be ventilated to the outside and adequately lighted. All openings into the toilet room shall be covered with 16-mesh screen.

(iv) Toilets shall be serviced on a regular schedule. Servicing shall include the use of a disinfectant for cleaning urinals and seats, removing waste from containers, recharging containers with an odor controlling chemical and installing an adequate supply of toilet tissue and seat covers.

(v) Service shall be performed in accordance with local codes by approved servicing organizations. Waste shall be disposed of or discharged in accordance with requirements of local health department regulations.

(vi) Waste containers shall be fabricated from impervious materials, e.g. plastic, steel, fiberglass or their equivalent. Containers shall be water tight and capable of containing the chemical waste in a sanitary manner. The container shall be fitted to the building in a manner so as to prevent insects from entering from the exterior of the building. Containers shall be adequate in size to be used by the number of persons, according to the schedule for minimum requirements, without filling the container to more than half of its volume before regularly scheduled servicing.

(vii) Removal of waste shall be handled in a clean and sanitary manner by means of a vacuum hose and received by a leak-proof tank truck. All valves on the tank shall be leak-proof.

(viii) Provisions shall be made so service trucks have a clear approach and convenient access to the toilets to be serviced.

(ix) Disposal of waste from tank trucks shall be in accordance with local health department requirements. In the absence of provisions by local health departments, waste

must be disposed of through municipal or district sanitary sewage systems. Municipal or area sanitary sewage districts shall provide sewage disposal locations and facilities which are adequate and convenient for duly authorized toilet service organizations.

(f) The requirements of this subsection do not apply to mobile crews or to normally unattended work locations as long as employees working at these locations have transportation immediately available, within the normal course of their duties, to nearby facilities otherwise meeting the requirements of this section.

(5)(a) On multi-employer worksites, the prime contractor shall ensure that the requirements of this section are met. Each employer is responsible for seeing that facilities for their own employees are provided.

(b) Each employer shall ensure, at the beginning of each shift, that the sanitation facilities required by this section are inspected. If any facility or unit fails to meet the following requirements, immediate corrective action shall be taken. Such action shall be documented and maintained at the site for at least 72 hours. Inspection shall establish:

(i) Potable water: Sufficient supply of water, sufficient supply of cups, container integrity, cleanliness of unit and area, capacity of trash receptacle (empty).

(ii) Wash water: Sufficient supply of clean water, proper temperature, sufficient supply of towels, sufficient supply of cleansing agents, container integrity, cleanliness of unit and area without the presence of physical hazards, capacity of trash receptacle (empty).

(iii) Toilets: Sufficient supply of toilet tissue and sanitary seat covers, capacity and condition of chemical agent, capacity and condition of holding tank, cleanliness of unit and area without the presence of physical hazards, physical and structural condition of unit, condition of lock, condition of toilet seat and tissue holder, absence of all foreign debris.

(c) The location of the facilities required by subsections (1), (2) and (4) of this section shall be as close as practical to the highest concentration of employees.

(i) On multistory structures they shall be furnished on every third floor.

(ii) At all sites they shall be located within 200 feet horizontally of all employees.

(iii) The requirements of subsection (5)(c)(i) and (ii) do not apply to mobile crews or to normally unattended work locations as long as employees working at these locations have transportation immediately available, within the normal course of their duties, to nearby facilities otherwise meeting the requirements of this section.

(6) Food handling. All employees' food service facilities and operations shall meet the applicable laws, ordinances and regulations of the jurisdictions in which they are located.

(7) Temporary sleeping quarters. When temporary sleeping quarters are provided, they shall be heated, ventilated and lighted.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-140, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-140, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-155-140, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-140, filed 1/21/86; Order 74-26, § 296-155-140, filed 5/7/74, effective 6/6/74.]

WAC 296-155-17321 Hygiene facilities and practices. (1) General.

(a) The employer shall provide decontamination areas for employees required to work in regulated areas or required by WAC 296-155-17319 to wear protective clothing. Exception: In lieu of the decontamination area requirement specified in this subsection, the employer may permit employees engaged in small scale, short duration operations, to clean their protective clothing or dispose of the protective clothing before such employees leave the area where the work was performed.

(b) Change areas. The employer shall ensure that change areas are equipped with separate storage facilities for protective clothing and street clothing, in accordance with WAC 296-24-12011.

(c) Equipment area. The equipment area shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective clothing and equipment.

(2) Shower area.

(a) Where feasible, shower facilities shall be provided which comply with WAC 296-24-12010 wherever the possibility of employee exposure to airborne levels of MDA in excess of the permissible exposure limit exists.

(b) Where dermal exposure to MDA occurs, the employer shall ensure that materials spilled or deposited on the skin are removed as soon as possible by methods which do not facilitate the dermal absorption of MDA.

(3) Lunch areas.

(a) Whenever food or beverages are consumed at the worksite and employees are exposed to MDA the employer shall provide clean lunch areas where MDA levels are below the action level and where no dermal exposure to MDA can occur.

(b) The employer shall ensure that employees wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics.

(c) The employer shall ensure that employees do not enter lunch facilities with contaminated protective work clothing or equipment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-17321, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-155-17321, filed 2/3/93, effective 3/15/93.]

WAC 296-155-17323 Communication of hazards to employees. (1) Signs and labels.

(a) The employer shall post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER MDA MAY CAUSE CANCER LIVER TOXIN
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
MAY BE REQUIRED TO BE WORN IN THIS AREA

(b) The employer shall ensure that labels or other appropriate forms of warning are provided for containers of MDA within the workplace. The labels shall comply with the

requirements of WAC 296-800-170 and shall include one of the following legends:

- (i) For pure MDA

DANGER CONTAINS MDA MAY CAUSE CANCER LIVER TOXIN

- (ii) For mixtures containing MDA

DANGER CONTAINS MDA CONTAINS MATERIALS
WHICH MAY CAUSE CANCER LIVER TOXIN

(2) Material safety data sheets (MSDS). Employers shall obtain or develop, and shall provide access to their employees to, a material safety data sheet (MSDS) for MDA.

- (3) Information and training.

(a) The employer shall provide employees with information and training on MDA, in accordance with WAC 296-800-170, at the time of initial assignment and at least annually thereafter.

(b) In addition to the information required under WAC 296-800-170, the employer shall:

(i) Provide an explanation of the contents of this section, including Appendices A and B of this section, and indicate to employees where a copy of the standard is available;

(ii) Describe the medical surveillance program required under WAC 296-155-17327, and explain the information contained in Appendix C of this standard; and

(iii) Describe the medical removal provision required under WAC 296-155-17327.

- (4) Access to training materials.

(a) The employer shall make readily available to all affected employees, without cost, all written materials relating to the employee training program, including a copy of this regulation.

(b) The employer shall provide to the director, upon request, all information and training materials relating to the employee information and training program.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-17323, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-04-111 (Order 92-15), § 296-155-17323, filed 2/3/93, effective 3/15/93.]

WAC 296-155-174 Cadmium. (1) Scope. This standard applies to all occupational exposures to cadmium and cadmium compounds, in all forms, in all construction work where an employee may potentially be exposed to cadmium. Construction work is defined as work involving construction, alteration, and/or repair, including but not limited to the following:

(a) Wrecking, demolition, or salvage of structures where cadmium or materials containing cadmium are present;

(b) Use of cadmium containing-paints and cutting, brazing, burning, grinding, or welding on surfaces that were painted with cadmium-containing paints;

(c) Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain cadmium, or materials containing cadmium;

(d) Cadmium welding; cutting and welding cadmium-plated steel; brazing or welding with cadmium alloys;

(e) Installation of products containing cadmium;

(f) Electrical grounding with cadmium-welding, or electrical work using cadmium-coated conduit;

(g) Maintaining or retrofitting cadmium-coated equipment;

(h) Cadmium contamination/emergency cleanup; and

(i) Transportation, disposal, storage, or containment of cadmium or materials containing cadmium on the site or location at which construction activities are performed.

- (2) Definitions.

(a) Action level (AL) is defined as an airborne concentration of cadmium of 2.5 micrograms per cubic meter of air ($2.5 \mu\text{g}/\text{m}^3$), calculated as an 8-hour time-weighted average (TWA).

(b) Authorized person means any person authorized by the employer and required by work duties to be present in regulated areas or any person authorized by WISHA or regulations issued under it to be in regulated areas.

(c) Competent person, in accordance with WAC 296-155-012(4), means a person designated by the employer to act on the employer's behalf who is capable of identifying existing and potential cadmium hazards in the workplace and the proper methods to control them in order to protect workers, and has the authority necessary to take prompt corrective measures to eliminate or control such hazards. The duties of a competent person include at least the following: Determining prior to the performance of work whether cadmium is present in the workplace; establishing, where necessary, regulated areas and assuring that access to and from those areas is limited to authorized employees; assuring the adequacy of any employee exposure monitoring required by this standard; assuring that all employees exposed to air cadmium levels above the PEL wear appropriate personal protective equipment and are trained in the use of appropriate methods of exposure control; assuring that proper hygiene facilities are provided and that workers are trained to use those facilities; and assuring that the engineering controls required by this standard are implemented, maintained in proper operating condition, and functioning properly.

(d) Director means the director of the department of labor and industries or authorized representative.

(e) Employee exposure and similar language referring to the air cadmium level to which an employee is exposed means the exposure to airborne cadmium that would occur if the employee were not using respiratory protective equipment.

(f) Final medical determination is the written medical opinion of the employee's health status by the examining physician under subsection (12)(c) through (l) of this section or, if multiple physician review under subsection (12)(m) of this section or the alternative physician determination under subsection (12)(n) of this section is invoked, it is the final, written medical finding, recommendation or determination that emerges from that process.

(g) High-efficiency particulate air (HEPA) filter means a filter capable of trapping and retaining at least 99.97 percent of mono-dispersed particles of 0.3 micrometers in diameter.

(h) Regulated area means an area demarcated by the employer where an employee's exposure to airborne concentrations of cadmium exceeds, or can reasonably be expected to exceed the permissible exposure limit (PEL).

(i) This section means this cadmium standard.

(3) Permissible exposure limit (PEL). The employer shall assure that no employee is exposed to an airborne concentration of cadmium in excess of five micrograms per cubic meter of air ($5 \mu\text{g}/\text{m}^3$), calculated as an 8-hour time-weighted average exposure (TWA).

(4) Exposure monitoring

(a) General.

(i) Prior to the performance of any construction work where employees may be potentially exposed to cadmium, the employer shall establish the applicability of this standard by determining whether cadmium is present in the workplace and whether there is the possibility that employee exposures will be at or above the action level. The employer shall designate a competent person who shall make this determination. Investigation and material testing techniques shall be used, as appropriate, in the determination. Investigation shall include a review of relevant plans, past reports, material safety data sheets, and other available records, and consultations with the property owner and discussions with appropriate individuals and agencies.

(ii) Where cadmium has been determined to be present in the workplace, and it has been determined that there is a possibility the employee's exposure will be at or above the action level, the competent person shall identify employees potentially exposed to cadmium at or above the action level.

(iii) Determinations of employee exposure shall be made from breathing-zone air samples that reflect the monitored employee's regular, daily 8-hour TWA exposure to cadmium.

(iv) Eight-hour TWA exposures shall be determined for each employee on the basis of one or more personal breathing-zone air samples reflecting full shift exposure on each shift, for each job classification, in each work area. Where several employees perform the same job tasks, in the same job classification, on the same shift, in the same work area, and the length, duration, and level of cadmium exposures are similar, an employer may sample a representative fraction of the employees instead of all employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) expected to have the highest cadmium exposures.

(b) Specific.

(i) Initial monitoring. Except as provided for in (b)(iii) of this subsection, where a determination conducted under (a)(i) of this subsection shows the possibility of employee exposure to cadmium at or above the action level, the employer shall conduct exposure monitoring as soon as practicable that is representative of the exposure for each employee in the workplace who is or may be exposed to cadmium at or above the action level.

(ii) In addition, if the employee periodically performs tasks that may expose the employee to a higher concentration of airborne cadmium, the employee shall be monitored while performing those tasks.

(iii) Where the employer has objective data, as defined in subsection (14)(b) of this section, demonstrating that employee exposure to cadmium will not exceed airborne concentrations at or above the action level under the expected conditions of processing, use, or handling, the employer may

rely upon such data instead of implementing initial monitoring.

(iv) Where a determination conducted under (a) or (b) of this subsection is made that a potentially exposed employee is not exposed to airborne concentrations of cadmium at or above the action level, the employer shall make a written record of such determination. The record shall include at least the monitoring data developed under (b)(i) through (iii) of this subsection, where applicable, and shall also include the date of determination, and the name and Social Security number of each employee.

(c) Monitoring frequency (periodic monitoring).

(i) If the initial monitoring or periodic monitoring reveals employee exposures to be at or above the action level, the employer shall monitor at a frequency and pattern needed to assure that the monitoring results reflect with reasonable accuracy the employee's typical exposure levels, given the variability in the tasks performed, work practices, and environmental conditions on the job site, and to assure the adequacy of respiratory selection and the effectiveness of engineering and work practice controls.

(ii) If the initial monitoring or the periodic monitoring indicates that employee exposures are below the action level and that result is confirmed by the results of another monitoring taken at least seven days later, the employer may discontinue the monitoring for those employees whose exposures are represented by such monitoring.

(d) Additional monitoring. The employer also shall institute the exposure monitoring required under (b)(i) and (c) of this subsection whenever there has been a change in the raw materials, equipment, personnel, work practices, or finished products that may result in additional employees being exposed to cadmium at or above the action level or in employees already exposed to cadmium at or above the action level being exposed above the PEL, or whenever the employer or competent person has any reason to suspect that any other change might result in such further exposure.

(e) Employee notification of monitoring results.

(i) No later than five working days after the receipt of the results of any monitoring performed under this section, the employer shall notify each affected employee individually in writing of the results. In addition, within the same time period, the employer shall post the results of the exposure monitoring in an appropriate location that is accessible to all affected employees.

(ii) Wherever monitoring results indicate that employee exposure exceeds the PEL, the employer shall include in the written notice a statement that the PEL has been exceeded and a description of the corrective action being taken by the employer to reduce employee exposure to or below the PEL.

(f) Accuracy of measurement. The employer shall use a method of monitoring and analysis that has an accuracy of not less than plus or minus 25 percent ($\pm 25\%$), with a confidence level of 95 percent, for airborne concentrations of cadmium at or above the action level and the permissible exposure limit.

(5) Regulated areas.

(a) Establishment. The employer shall establish a regulated area wherever an employee's exposure to airborne con-

centrations of cadmium is, or can reasonably be expected to be in excess of the permissible exposure limit (PEL).

(b) Demarcation. Regulated areas shall be demarcated from the rest of the workplace in any manner that adequately establishes and alerts employees of the boundaries of the regulated area, including employees who are or may be incidentally in the regulated areas, and that protects persons outside the area from exposure to airborne concentrations of cadmium in excess of the PEL.

(c) Access. Access to regulated areas shall be limited to authorized persons.

(d) Provision of respirators. Each person entering a regulated area shall be supplied with and required to use a respirator, selected in accordance with subsection (7)(b) of this section.

(e) Prohibited activities. The employer shall assure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas, or carry the products associated with any of these activities into regulated areas or store such products in those areas.

(6) Methods of compliance.

(a) Compliance hierarchy.

(i) Except as specified in (a)(ii) of this subsection, the employer shall implement engineering and work practice controls to reduce and maintain employee exposure to cadmium at or below the PEL, except to the extent that the employer can demonstrate that such controls are not feasible.

(ii) The requirement to implement engineering controls to achieve the PEL does not apply where the employer demonstrates the following:

(A) The employee is only intermittently exposed; and

(B) The employee is not exposed above the PEL on 30 or more days per year (12 consecutive months).

(iii) Wherever engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer nonetheless shall implement such controls to reduce exposures to the lowest levels achievable. The employer shall supplement such controls with respiratory protection that complies with the requirements of subsection (7) of this section and the PEL.

(iv) The employer shall not use employee rotation as a method of compliance.

(b) Specific operations.

(i) Abrasive blasting. Abrasive blasting on cadmium or cadmium-containing materials shall be conducted in a manner that will provide adequate protection.

(ii) Heating cadmium and cadmium-containing materials. Welding, cutting, and other forms of heating of cadmium or cadmium-containing materials shall be conducted in accordance with the requirements of WAC 296-155-415 and 296-155-420, where applicable.

(c) Prohibitions.

(i) High speed abrasive disc saws and similar abrasive power equipment shall not be used for work on cadmium or cadmium-containing materials unless they are equipped with appropriate engineering controls to minimize emissions, if the exposure levels are above the PEL.

(ii) Materials containing cadmium shall not be applied by spray methods, if exposures are above the PEL, unless employees are protected with supplied-air respirators with

full facepiece, hood, helmet, suit, operated in positive pressure mode and measures are instituted to limit overspray and prevent contamination of adjacent areas.

(d) Mechanical ventilation.

(i) When ventilation is used to control exposure, measurements that demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure shall be made as necessary to maintain its effectiveness.

(ii) Measurements of the system's effectiveness in controlling exposure shall be made as necessary within five working days of any change in production, process, or control that might result in a significant increase in employee exposure to cadmium.

(iii) Recirculation of air. If air from exhaust ventilation is recirculated into the workplace, the system shall have a high efficiency filter and be monitored to assure effectiveness.

(iv) Procedures shall be developed and implemented to minimize employee exposure to cadmium when maintenance of ventilation systems and changing of filters is being conducted.

(e) Compliance program.

(i) Where employee exposure to cadmium exceeds the PEL and the employer is required under (a) of this subsection to implement controls to comply with the PEL, prior to the commencement of the job the employer shall establish and implement a written compliance program to reduce employee exposure to or below the PEL. To the extent that engineering and work practice controls cannot reduce exposures to or below the PEL, the employer shall include in the written compliance program the use of appropriate respiratory protection to achieve compliance with the PEL.

(ii) Written compliance programs shall be reviewed and updated as often and as promptly as necessary to reflect significant changes in the employer's compliance status or significant changes in the lowest air cadmium level that is technologically feasible.

(iii) A competent person shall review the comprehensive compliance program initially and after each change.

(iv) Written compliance programs shall be provided upon request for examination and copying to the director, or authorized representatives, affected employees, and designated employee representatives.

(7) Respirator protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this section. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls when employee exposures exceed the PEL.

(ii) Maintenance and repair activities, and brief or intermittent operations, for which employee exposures exceed the PEL and engineering and work-practice controls are not feasible or are not required.

(iii) Work operations in regulated areas specified in subsection (5) of this section.

(iv) Work operations for which the employer has implemented all feasible engineering and work-practice controls,

and such controls are not sufficient to reduce exposures to or below the PEL.

(v) Emergencies.

(vi) Work operations for which an employee, who is exposed to cadmium at or above the action level, requests a respirator.

(vii) Work operations for which engineering controls are not required under (a)(ii) of this subsection to reduce employee exposures that exceed the PEL.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-62 WAC, Part E (except WAC 296-62-07130(1) and WAC 296-62-07150 through WAC 296-62-07156).

(ii) If an employee has breathing difficulty during fit testing or respirator use, the employer must provide the employee with a medical examination as required by subsection (12)(f)(ii) of this section to determine if the employee can use a respirator while performing the required duties.

(iii) No employees must use a respirator when, based on their recent medical examination, the examining physician determines that the employee will be unable to continue to function normally while using a respirator. If the physician determines the employee must be limited in, or removed from, their current job because of the employee's inability to use a respirator, the job limitation or removal must be conducted as required by (k) and (l) of this subsection.

(c) Respirator selection.

(i) The employer must select the appropriate respirator from Table 1 of this section.

Table 1 Respiratory Protection for Cadmium	
Airborne concentration or condition of use ^a	Required respirator type ^b
10 x or less	A half-mask, air-purifying respirator equipped with a HEPA ^c filter. ^d
25 x or less	A powered air-purifying respirator ("PAPR") with a loose-fitting hood or helmet equipped with a HEPA filter, or a supplied-air respirator with a loose-fitting hood or helmet facepiece operated in the continuous flow mode.
50 x or less	A full facepiece air-purifying respirator equipped with a HEPA filter, or a powered air-purifying respirator with a tight-fitting half-mask equipped with a HEPA filter, or a supplied air respirator with a tight-fitting half-mask operated in the continuous flow mode.

Table 1

Respiratory Protection for Cadmium

Airborne concentration or condition of use ^a	Required respirator type ^b
250 x or less	A powered air-purifying respirator with a tight-fitting full facepiece equipped with a HEPA filter, or a supplied-air respirator with a tight-fitting full facepiece operated in the continuous flow mode.
1000 x or less	A supplied-air respirator with half-mask or full facepiece operated in the pressure demand or other positive pressure mode.
>1000 x or unknown concentrations	A self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode, or a supplied-air respirator with a full facepiece operated in the pressure demand or other positive pressure mode and equipped with an auxiliary escape type self-contained breathing apparatus operated in the pressure demand mode.
Fire fighting	A self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Note: ^a Concentrations expressed as multiple of the PEL.

^b Respirators assigned for higher environmental concentrations may be used at lower exposure levels. Quantitative fit testing is required for all tight-fitting air purifying respirators where airborne concentration of cadmium exceeds 10 times the TWA PEL ($10 \times 5 \mu\text{g}/\text{m}^3 = 50 \mu\text{g}/\text{m}^3$). A full facepiece respirator is required when eye irritation is experienced.

^c HEPA means High Efficiency Particulate Air.

^d Fit testing, qualitative or quantitative, is required.

Source: Respiratory Decision Logic, NIOSH, 1987.

(ii) The employer shall provide a powered, air-purifying respirator (PAPR) instead of a negative-pressure respirator when an employee entitled to a respirator chooses to use this type of respirator and such a respirator will provide adequate protection to the employee.

(8) Emergency situations. The employer shall develop and implement a written plan for dealing with emergency situations involving substantial releases of airborne cadmium. The plan shall include provisions for the use of appropriate respirators and personal protective equipment. In addition, employees not essential to correcting the emergency situation shall be restricted from the area and normal operations halted in that area until the emergency is abated.

(9) Protective work clothing and equipment

(a) Provision and use. If an employee is exposed to airborne cadmium above the PEL or where skin or eye irritation is associated with cadmium exposure at any level, the

employer shall provide at no cost to the employee, and assure that the employee uses, appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments. Protective work clothing and equipment includes, but is not limited to:

- (i) Coveralls or similar full-body work clothing;
- (ii) Gloves, head coverings, and boots or foot coverings; and

- (iii) Face shields, vented goggles, or other appropriate protective equipment that complies with WAC 296-155-215.

- (b) Removal and storage.

- (i) The employer shall assure that employees remove all protective clothing and equipment contaminated with cadmium at the completion of the work shift and do so only in change rooms provided in accordance with subsection (10)(a) of this section.

- (ii) The employer shall assure that no employee takes cadmium-contaminated protective clothing or equipment from the workplace, except for employees authorized to do so for purposes of laundering, cleaning, maintaining, or disposing of cadmium-contaminated protective clothing and equipment at an appropriate location or facility away from the workplace.

- (iii) The employer shall assure that contaminated protective clothing and equipment, when removed for laundering, cleaning, maintenance, or disposal, is placed and stored in sealed, impermeable bags or other closed, impermeable containers that are designed to prevent dispersion of cadmium dust.

- (iv) The employer shall assure that containers of contaminated protective clothing and equipment that are to be taken out of the change rooms or the workplace for laundering, cleaning, maintenance or disposal shall bear labels in accordance with subsection (13)(c) of this section.

- (c) Cleaning, replacement, and disposal.

- (i) The employer shall provide the protective clothing and equipment required by (a) of this subsection in a clean and dry condition as often as necessary to maintain its effectiveness, but in any event at least weekly. The employer is responsible for cleaning and laundering the protective clothing and equipment required by this subsection to maintain its effectiveness and is also responsible for disposing of such clothing and equipment.

- (ii) The employer also is responsible for repairing or replacing required protective clothing and equipment as needed to maintain its effectiveness. When rips or tears are detected while an employee is working they shall be immediately mended, or the worksuit shall be immediately replaced.

- (iii) The employer shall prohibit the removal of cadmium from protective clothing and equipment by blowing, shaking, or any other means that disperses cadmium into the air.

- (iv) The employer shall assure that any laundering of contaminated clothing or cleaning of contaminated equipment in the workplace is done in a manner that prevents the release of airborne cadmium in excess of the permissible exposure limit prescribed in subsection (3) of this section.

- (v) The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with cadmium of the potentially harmful effects of exposure to cadmium, and that the clothing and equipment should be

laundered or cleaned in a manner to effectively prevent the release of airborne cadmium in excess of the PEL.

- (10) Hygiene areas and practices.

- (a) General. For employees whose airborne exposure to cadmium is above the PEL, the employer shall provide clean change rooms, handwashing facilities, showers, and lunchroom facilities that comply with WAC 296-155-140.

- (b) Change rooms. The employer shall assure that change rooms are equipped with separate storage facilities for street clothes and for protective clothing and equipment, which are designed to prevent dispersion of cadmium and contamination of the employee's street clothes.

- (c) Showers and handwashing facilities.

- (i) The employer shall assure that employees whose airborne exposure to cadmium is above the PEL shower during the end of the work shift.

- (ii) The employer shall assure that employees who are exposed to cadmium above the PEL wash their hands and faces prior to eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics.

- (d) Lunchroom facilities.

- (i) The employer shall assure that the lunchroom facilities are readily accessible to employees, that tables for eating are maintained free of cadmium, and that no employee in a lunchroom facility is exposed at any time to cadmium at or above a concentration of $2.5 \mu\text{g}/\text{m}^3$.

- (ii) The employer shall assure that employees do not enter lunchroom facilities with protective work clothing or equipment unless surface cadmium has been removed from the clothing and equipment by HEPA vacuuming or some other method that removes cadmium dust without dispersing it.

- (11) Housekeeping.

- (a) All surfaces shall be maintained as free as practicable of accumulations of cadmium.

- (b) All spills and sudden releases of material containing cadmium shall be cleaned up as soon as possible.

- (c) Surfaces contaminated with cadmium shall, wherever possible, be cleaned by vacuuming or other methods that minimize the likelihood of cadmium becoming airborne.

- (d) HEPA-filtered vacuuming equipment or equally effective filtration methods shall be used for vacuuming. The equipment shall be used and emptied in a manner that minimizes the reentry of cadmium into the workplace.

- (e) Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other methods that minimize the likelihood of cadmium becoming airborne have been tried and found not to be effective.

- (f) Compressed air shall not be used to remove cadmium from any surface unless the compressed air is used in conjunction with a ventilation system designed to capture the dust cloud created by the compressed air.

- (g) Waste, scrap, debris, bags, containers, personal protective equipment, and clothing contaminated with cadmium and consigned for disposal shall be collected and disposed of in sealed impermeable bags or other closed, impermeable containers. These bags and containers shall be labeled in accordance with subsection (13)(b) of this section.

- (12) Medical surveillance.

- (a) General.

(i) Scope.

(A) Currently exposed—The employer shall institute a medical surveillance program for all employees who are or may be exposed at or above the action level and all employees who perform the following tasks, operations, or jobs: Electrical grounding with cadmium-welding; cutting, brazing, burning, grinding, or welding on surfaces that were painted with cadmium-containing paints; electrical work using cadmium-coated conduit; use of cadmium containing paints; cutting and welding cadmium-plated steel; brazing or welding with cadmium alloys; fusing of reinforced steel by cadmium welding; maintaining or retrofitting cadmium-coated equipment; and, wrecking and demolition where cadmium is present. A medical surveillance program will not be required if the employer demonstrates that the employee:

(I) Is not currently exposed by the employer to airborne concentrations of cadmium at or above the action level on 30 or more days per year (twelve consecutive months); and

(II) Is not currently exposed by the employer in those tasks on 30 or more days per year (twelve consecutive months).

(B) Previously exposed—The employer shall also institute a medical surveillance program for all employees who might previously have been exposed to cadmium by the employer prior to the effective date of this section in tasks specified under (a)(i)(A) of this subsection, unless the employer demonstrates that the employee did not in the years prior to the effective date of this section work in those tasks for the employer with exposure to cadmium for an aggregate total of more than 12 months.

(ii) To determine an employee's fitness for using a respirator, the employer shall provide the limited medical examination specified in (f) of this subsection.

(iii) The employer shall assure that all medical examinations and procedures required by this section are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects WAC 296-62-07441, Appendix A, the regulatory text of this section, the protocol for sample handling and lab selection in WAC 296-62-07451, Appendix F, and the questionnaire of WAC 296-62-07447, Appendix D.

(iv) The employer shall provide the medical surveillance required by this section, including multiple physician review under (m) of this subsection without cost to employees, and at a time and place that is reasonable and convenient to employees.

(v) The employer shall assure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (B₂-M) taken from employees under this section is done in a manner that assures their reliability and that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (B₂-M) taken from employees under this section is performed in laboratories with demonstrated proficiency to perform the particular analysis. (See WAC 296-62-07451, Appendix F.)

(b) Initial examination.

(i) For employees covered by medical surveillance under (a)(i) of this subsection, the employer shall provide an initial medical examination. The examination shall be provided to

those employees within 30 days after initial assignment to a job with exposure to cadmium or no later than 90 days after the effective date of this section, whichever date is later.

(ii) The initial medical examination shall include:

(A) A detailed medical and work history, with emphasis on: Past, present, and anticipated future exposure to cadmium; any history of renal, cardiovascular, respiratory, hematopoietic, reproductive, and/or musculo-skeletal system dysfunction; current usage of medication with potential nephrotoxic side-effects; and smoking history and current status; and

(B) Biological monitoring that includes the following tests:

(I) Cadmium in urine (CdU), standardized to grams of creatinine (g/Cr);

(II) Beta-2 microglobulin in urine (B₂-M), standardized to grams of creatinine (g/Cr), with pH specified, as described in WAC 296-62-07451, Appendix F; and

(III) Cadmium in blood (CdB), standardized to liters of whole blood (lwb).

(iii) Recent examination: An initial examination is not required to be provided if adequate records show that the employee has been examined in accordance with the requirements of (b)(ii) of this subsection within the past 12 months. In that case, such records shall be maintained as part of the employee's medical record and the prior exam shall be treated as if it were an initial examination for the purposes of (c) and (d) of this subsection.

(c) Actions triggered by initial biological monitoring.

(i) If the results of the biological monitoring tests in the initial examination show the employee's CdU level to be at or below 3 µg/g Cr, B₂-M level to be at or below 300 µg/g Cr and CdB level to be at or below 5 µg/lwb, then:

(A) For employees who are subject to medical surveillance under (a)(i)(A) of this subsection because of current or anticipated exposure to cadmium, the employer shall provide the minimum level of periodic medical surveillance in accordance with the requirements in (d)(i) of this subsection; and

(B) For employees who are subject to medical surveillance under (a)(i)(B) of this subsection because of prior but not current exposure, the employer shall provide biological monitoring for CdU, B₂-M, and CdB one year after the initial biological monitoring and then the employer shall comply with the requirements of (d)(vi) of this subsection.

(ii) For all employees who are subject to medical surveillance under (a)(i) of this subsection, if the results of the initial biological monitoring tests show the level of CdU to exceed 3 µg/g Cr, the level of B₂-M to be in excess of 300 µg/g Cr, or the level of CdB to be in excess of 5 µg/lwb, the employer shall:

(A) Within two weeks after receipt of biological monitoring results, reassess the employee's occupational exposure to cadmium as follows:

(I) Reassess the employee's work practices and personal hygiene;

(II) Reevaluate the employee's respirator use, if any, and the respirator program;

(III) Review the hygiene facilities;

(IV) Reevaluate the maintenance and effectiveness of the relevant engineering controls;

(V) Assess the employee's smoking history and status;

(B) Within 30 days after the exposure reassessment, specified in (c)(ii)(A) of this subsection, take reasonable steps to correct any deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium; and

(C) Within 90 days after receipt of biological monitoring results, provide a full medical examination to the employee in accordance with the requirements of (d)(ii) of this subsection. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. If the physician determines that medical removal is not necessary, then until the employee's CdU level falls to or below 3 µg/g Cr, B₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer shall:

(I) Provide biological monitoring in accordance with (b)(ii)(B) of this subsection on a semiannual basis; and

(II) Provide annual medical examinations in accordance with (d)(ii) of this subsection.

(iii) For all employees who are subject to medical surveillance under (a)(i) of this subsection, if the results of the initial biological monitoring tests show the level of CdU to be in excess of 15 µg/g Cr, or the level of CdB to be in excess of 15 µg/lwb, or the level of B₂-M to be in excess of 1,500 µg/g Cr, the employer shall comply with the requirements of (c)(ii)(A) and (B) of this subsection. Within 90 days after receipt of biological monitoring results, the employer shall provide a full medical examination to the employee in accordance with the requirements of (d)(ii) of this subsection. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 15 µg/g Cr; or CdB exceeds 15 µg/lwb; or B₂-M exceeds 1500 µg/g Cr, and in addition CdU exceeds 3 µg/g Cr or CdB exceeds 5 µg/liter of whole blood, then the physician shall medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this section. If the employee is not required to be removed by the mandatory provisions of this section or by the physician's determination, then until the employee's CdU level falls to or below 3 µg/g Cr, B₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer shall:

(A) Periodically reassess the employee's occupational exposure to cadmium;

(B) Provide biological monitoring in accordance with (b)(ii)(B) of this subsection on a quarterly basis; and

(C) Provide semiannual medical examinations in accordance with (d)(ii) of this subsection.

(iv) For all employees to whom medical surveillance is provided, beginning on January 1, 1999, and in lieu of (c)(iii)

of this subsection, whenever the results of initial biological monitoring tests show the employee's CdU level to be in excess of 7 µg/g Cr, or B₂-M level to be in excess of 750 µg/g Cr, or CdB level to be in excess of 10 µg/lwb, the employer shall comply with the requirements of (c)(ii)(A) and (B) of this subsection. Within 90 days after receipt of biological monitoring results, the employer shall provide a full medical examination to the employee in accordance with the requirements of (d)(ii) of this subsection. After completing the medical examination, the examining physician shall determine in a written medical opinion whether to medically remove the employee. However, if the initial biological monitoring results and the biological monitoring results obtained during the medical examination both show that: CdU exceeds 7 µg/g Cr; or CdB exceeds 10 µg/lwb; or B₂-M exceeds 750 µg/g Cr, and in addition CdU exceeds 3 µg/g Cr or CdB exceeds 5 µg/liter of whole blood, then the physician shall medically remove the employee from exposure to cadmium at or above the action level. If the second set of biological monitoring results obtained during the medical examination does not show that a mandatory removal trigger level has been exceeded, then the employee is not required to be removed by the mandatory provisions of this section. If the employee is not required to be removed by the mandatory provisions of this section or by the physician's determination, then until the employee's CdU level falls to or below 3 µg/g Cr, B₂-M level falls to or below 300 µg/g Cr and CdB level falls to or below 5 µg/lwb, the employer shall:

(A) Periodically reassess the employee's occupational exposure to cadmium;

(B) Provide biological monitoring in accordance with (b)(ii)(B) of this subsection on a quarterly basis; and

(C) Provide semiannual medical examinations in accordance with (d)(ii) of this subsection.

(d) Periodic medical surveillance.

(i) For each employee who is covered by medical surveillance under (a)(i)(A) of this subsection because of current or anticipated exposure to cadmium, the employer shall provide at least the minimum level of periodic medical surveillance, which consists of periodic medical examinations and periodic biological monitoring. A periodic medical examination shall be provided within one year after the initial examination required by (b) of this subsection and thereafter at least biennially. Biological sampling shall be provided at least annually either as part of a periodic medical examination or separately as periodic biological monitoring.

(ii) The periodic medical examination shall include:

(A) A detailed medical and work history, or update thereof, with emphasis on: Past, present, and anticipated future exposure to cadmium; smoking history and current status; reproductive history; current use of medications with potential nephrotoxic side-effects; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculoskeletal system dysfunction; and as part of the medical and work history, for employees who wear respirators, questions 3 through 11 and 25 through 32 in WAC 296-62-07447, Appendix D;

(B) A complete physical examination with emphasis on: Blood pressure, the respiratory system, and the urinary system;

(C) A 14 inch by 17 inch, or a reasonably standard sized posterior-anterior chest x-ray (after the initial x-ray, the frequency of chest x-rays is to be determined by the examining physician);

(D) Pulmonary function tests, including forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV1);

(E) Biological monitoring, as required in (b)(ii)(B) of this subsection;

(F) Blood analysis, in addition to the analysis required under (b)(ii)(B) of this subsection, including blood urea nitrogen, complete blood count, and serum creatinine;

(G) Urinalysis, in addition to the analysis required under (b)(ii)(B) of this subsection, including the determination of albumin, glucose, and total and low molecular weight proteins;

(H) For males over 40 years old, prostate palpation, or other at least as effective diagnostic test(s); and

(I) Any additional tests or procedures deemed appropriate by the examining physician.

(iii) Periodic biological monitoring shall be provided in accordance with (b)(ii)(B) of this subsection.

(iv) If the results of periodic biological monitoring or the results of biological monitoring performed as part of the periodic medical examination show the level of the employee's CdU, B₂-M, or CdB to be in excess of the levels specified in (c)(ii) and (iii) of this subsection; or, beginning on January 1, 1999, in excess of the levels specified in (c)(ii) or (iv) of this subsection, the employer shall take the appropriate actions specified in (c)(ii) through (iv) of this subsection, respectively.

(v) For previously exposed employees under (a)(i)(B) of this subsection:

(A) If the employee's levels of CdU did not exceed 3 µg/g Cr, CdB did not exceed 5 µg/lwb, and B₂-M did not exceed 300 µg/g Cr in the initial biological monitoring tests, and if the results of the follow-up biological monitoring required by (c)(i)(B) of this subsection one year after the initial examination confirm the previous results, the employer may discontinue all periodic medical surveillance for that employee.

(B) If the initial biological monitoring results for CdU, CdB, or B₂-M were in excess of the levels specified in (c)(i) of this subsection, but subsequent biological monitoring results required by (c)(ii) through (iv) of this subsection show that the employee's CdU levels no longer exceed 3 µg/g Cr, CdB levels no longer exceed 5 µg/lwb, and B₂-M levels no longer exceed 300 µg/g Cr, the employer shall provide biological monitoring for CdU, CdB, and B₂-M one year after these most recent biological monitoring results. If the results of the follow-up biological monitoring specified in this section, confirm the previous results, the employer may discontinue all periodic medical surveillance for that employee.

(C) However, if the results of the follow-up tests specified in (d)(v)(A) or (B) of this subsection indicate that the level of the employee's CdU, B₂-M, or CdB exceeds these

same levels, the employer is required to provide annual medical examinations in accordance with the provisions of (d)(ii) of this subsection until the results of biological monitoring are consistently below these levels or the examining physician determines in a written medical opinion that further medical surveillance is not required to protect the employee's health.

(vi) A routine, biennial medical examination is not required to be provided in accordance with (c)(i) and (d) of this subsection if adequate medical records show that the employee has been examined in accordance with the requirements of (d)(ii) of this subsection within the past 12 months. In that case, such records shall be maintained by the employer as part of the employee's medical record, and the next routine, periodic medical examination shall be made available to the employee within two years of the previous examination.

(e) Actions triggered by medical examinations. If the results of a medical examination carried out in accordance with this section indicate any laboratory or clinical finding consistent with cadmium toxicity that does not require employer action under (b), (c), or (d) of this subsection, the employer shall take the following steps and continue to take them until the physician determines that they are no longer necessary.

(i) Periodically reassess: The employee's work practices and personal hygiene; the employee's respirator use, if any; the employee's smoking history and status; the respiratory protection program; the hygiene facilities; the maintenance and effectiveness of the relevant engineering controls; and take all reasonable steps to correct the deficiencies found in the reassessment that may be responsible for the employee's excess exposure to cadmium.

(ii) Provide semiannual medical reexaminations to evaluate the abnormal clinical sign(s) of cadmium toxicity until the results are normal or the employee is medically removed; and

(iii) Where the results of tests for total proteins in urine are abnormal, provide a more detailed medical evaluation of the toxic effects of cadmium on the employee's renal system.

(f) Examination for respirator use.

(i) To determine an employee's fitness for respirator use, the employer shall provide a medical examination that includes the elements specified in (f)(i)(A) through (D) of this subsection. This examination shall be provided prior to the employee's being assigned to a job that requires the use of a respirator or no later than 90 days after this section goes into effect, whichever date is later, to any employee without a medical examination within the preceding 12 months that satisfies the requirements of this section.

(A) A detailed medical and work history, or update thereof, with emphasis on: Past exposure to cadmium; smoking history and current status; any history of renal, cardiovascular, respiratory, hematopoietic, and/or musculo-skeletal system dysfunction; a description of the job for which the respirator is required; and questions 3 through 11 and 25 through 32 in WAC 296-62-07447, Appendix D;

(B) A blood pressure test;

(C) Biological monitoring of the employee's levels of CdU, CdB and B₂-M in accordance with the requirements of

(b)(ii)(B) of this subsection, unless such results already have been obtained within the twelve months; and

(D) Any other test or procedure that the examining physician deems appropriate.

(ii) After reviewing all the information obtained from the medical examination required in (f)(i) of this subsection, the physician shall determine whether the employee is fit to wear a respirator.

(iii) Whenever an employee has exhibited difficulty in breathing during a respirator fit test or during use of a respirator, the employer, as soon as possible, shall provide the employee with a periodic medical examination in accordance with (d)(ii) of this subsection to determine the employee's fitness to wear a respirator.

(iv) Where the results of the examination required under (f)(i), (ii), or (iii) of this subsection are abnormal, medical limitation or prohibition of respirator use shall be considered. If the employee is allowed to wear a respirator, the employee's ability to continue to do so shall be periodically evaluated by a physician.

(g) Emergency examinations.

(i) In addition to the medical surveillance required in (b) through (f) of this subsection, the employer shall provide a medical examination as soon as possible to any employee who may have been acutely exposed to cadmium because of an emergency.

(ii) The examination shall include the requirements of (d)(ii), of this subsection, with emphasis on the respiratory system, other organ systems considered appropriate by the examining physician, and symptoms of acute overexposure, as identified in Appendix A, WAC 296-62-07441 (2)(b)(i) and (ii) and (4).

(h) Termination of employment examination.

(i) At termination of employment, the employer shall provide a medical examination in accordance with (d)(ii) of this subsection, including a chest x-ray where necessary, to any employee to whom at any prior time the employer was required to provide medical surveillance under (a)(i) or (g) of this subsection. However, if the last examination satisfied the requirements of (d)(ii) of this subsection and was less than six months prior to the date of termination, no further examination is required unless otherwise specified in (c) or (e) of this subsection;

(ii) In addition, if the employer has discontinued all periodic medical surveillance under (d)(v) of this subsection, no termination of employment medical examination is required.

(i) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and appendices;

(ii) A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to cadmium;

(iii) The employee's former, current, and anticipated future levels of occupational exposure to cadmium;

(iv) A description of any personal protective equipment, including respirators, used or to be used by the employee, including when and for how long the employee has used that equipment; and

(v) Relevant results of previous biological monitoring and medical examinations.

(j) Physician's written medical opinion.

(i) The employer shall promptly obtain a written, signed, medical opinion from the examining physician for each medical examination performed on each employee. This written opinion shall contain:

(A) The physician's diagnosis for the employee;

(B) The physician's opinion as to whether the employee has any detected medical condition(s) that would place the employee at increased risk of material impairment to health from further exposure to cadmium, including any indications of potential cadmium toxicity;

(C) The results of any biological or other testing or related evaluations that directly assess the employee's absorption of cadmium;

(D) Any recommended removal from, or limitation on the activities or duties of the employee or on the employee's use of personal protective equipment, such as respirators;

(E) A statement that the physician has clearly and carefully explained to the employee the results of the medical examination, including all biological monitoring results and any medical conditions related to cadmium exposure that require further evaluation or treatment, and any limitation on the employee's diet or use of medications.

(ii) The employer shall promptly obtain a copy of the results of any biological monitoring provided by an employer to an employee independently of a medical examination under (b) and (d) of this subsection, and, in lieu of a written medical opinion, an explanation sheet explaining those results.

(iii) The employer shall instruct the physician not to reveal orally or in the written medical opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to cadmium.

(k) Medical removal protection (MRP).

(i) General.

(A) The employer shall temporarily remove an employee from work where there is excess exposure to cadmium on each occasion that medical removal is required under (c), (d), or (f) of this subsection and on each occasion that a physician determines in a written medical opinion that the employee should be removed from such exposure. The physician's determination may be based on biological monitoring results, inability to wear a respirator, evidence of illness, other signs or symptoms of cadmium-related dysfunction or disease, or any other reason deemed medically sufficient by the physician.

(B) The employer shall medically remove an employee in accordance with (k) of this subsection regardless of whether at the time of removal a job is available into which the removed employee may be transferred.

(C) Whenever an employee is medically removed under (k) of this subsection, the employer shall transfer the removed employee to a job where the exposure to cadmium is within the permissible levels specified in subsection (12) of this section as soon as one becomes available.

(D) For any employee who is medically removed under the provisions of (k)(i) of this subsection, the employer shall provide follow-up medical examinations semiannually until,

in a written medical opinion, the examining physician determines that either the employee may be returned to his/her former job status or the employee must be permanently removed from excess cadmium exposure.

(E) The employer may not return an employee who has been medically removed for any reason to his/her former job status until a physician determines in a written medical opinion that continued medical removal is no longer necessary to protect the employee's health.

(ii) Where an employee is found unfit to wear a respirator under (f)(ii) of this subsection, the employer shall remove the employee from work where exposure to cadmium is above the PEL.

(iii) Where removal is based upon any reason other than the employee's inability to wear a respirator, the employer shall remove the employee from work where exposure to cadmium is at or above the action level.

(iv) Except as specified in (k)(v) of this subsection, no employee who was removed because his/her level of CdU, CdB and/or B₂-M exceeded the trigger levels in (c) or (d) of this subsection may be returned to work with exposure to cadmium at or above the action level until the employee's levels of CdU fall to or below 3 µg/g Cr, CdB fall to or below 5 µg/lwb, and B₂-M fall to or below 300 µg/g Cr.

(v) However, when in the examining physician's opinion continued exposure to cadmium will not pose an increased risk to the employee's health and there are special circumstances that make continued medical removal an inappropriate remedy, the physician shall fully discuss these matters with the employee, and then in a written determination may return a worker to his/her former job status despite what would otherwise be unacceptably high biological monitoring results. Thereafter and until such time as the employee's biological monitoring results have decreased to levels where he/she could have been returned to his/her former job status, the returned employee shall continue medical surveillance as if he/she were still on medical removal. Until such time, the employee is no longer subject to mandatory medical removal. Subsequent questions regarding the employee's medical removal shall be decided solely by a final medical determination.

(vi) Where an employer, although not required by this section to do so, removes an employee from exposure to cadmium or otherwise places limitations on an employee due to the effects of cadmium exposure on the employee's medical condition, the employer shall provide the same medical removal protection benefits to that employee under (l) of this subsection as would have been provided had the removal been required under (k) of this subsection.

(l) Medical removal protection benefits.

(i) The employer shall provide medical removal protection benefits to an employee for up to a maximum of 18 months each time, and while the employee is temporarily medically removed under (k) of this subsection.

(ii) For purposes of this section, the requirement that the employer provide medical removal protection benefits means that the employer shall maintain the total normal earnings, seniority, and all other employee rights and benefits of the removed employee, including the employee's right to his/her

former job status, as if the employee had not been removed from the employee's job or otherwise medically limited.

(iii) Where, after 18 months on medical removal because of elevated biological monitoring results, the employee's monitoring results have not declined to a low enough level to permit the employee to be returned to his/her former job status:

(A) The employer shall make available to the employee a medical examination pursuant to this section in order to obtain a final medical determination as to whether the employee may be returned to his/her former job status or must be permanently removed from excess cadmium exposure; and

(B) The employer shall assure that the final medical determination indicates whether the employee may be returned to his/her former job status and what steps, if any, should be taken to protect the employee's health.

(iv) The employer may condition the provision of medical removal protection benefits upon the employee's participation in medical surveillance provided in accordance with this section.

(m) Multiple physician review.

(i) If the employer selects the initial physician to conduct any medical examination or consultation provided to an employee under this section, the employee may designate a second physician to:

(A) Review any findings, determinations, or recommendations of the initial physician; and

(B) Conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(ii) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician provided by the employer conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, multiple physician review upon the employee doing the following within fifteen (15) days after receipt of this notice, or receipt of the initial physician's written opinion, whichever is later:

(A) Informing the employer that he or she intends to seek a medical opinion; and

(B) Initiating steps to make an appointment with a second physician.

(iii) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

(iv) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee, through their respective physicians, shall designate a third physician to:

(A) Review any findings, determinations, or recommendations of the other two physicians; and

(B) Conduct such examinations, consultations, laboratory tests, and discussions with the other two physicians as the third physician deems necessary to resolve the disagreement among them.

(v) The employer shall act consistently with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement that is consistent with the recommendations of at least one of the other two physicians.

(n) Alternate physician determination. The employer and an employee or designated employee representative may agree upon the use of any alternate form of physician determination in lieu of the multiple physician review provided by (m) of this subsection, so long as the alternative is expeditious and at least as protective of the employee.

(o) Information the employer must provide the employee.

(i) The employer shall provide a copy of the physician's written medical opinion to the examined employee within five working days after receipt thereof.

(ii) The employer shall provide the employee with a copy of the employee's biological monitoring results and an explanation sheet explaining the results within five working days after receipt thereof.

(iii) Within 30 days after a request by an employee, the employer shall provide the employee with the information the employer is required to provide the examining physician under (i) of this subsection.

(p) Reporting. In addition to other medical events that are required to be reported on the OSHA Form No. 200, the employer shall report any abnormal condition or disorder caused by occupational exposure to cadmium associated with employment as specified in Chapter (V)(E) of the Bureau of Labor Statistics Recordkeeping Guidelines for Occupational Injuries and Illnesses.

(13) Communication of cadmium hazards to employees

(a) General. In communications concerning cadmium hazards, employers shall comply with the requirements of WISHA's Hazard Communication Standard, chapter 296-62 WAC, Part C, including but not limited to the requirements concerning warning signs and labels, material safety data sheets (MSDS), and employee information and training. In addition, employers shall comply with the following requirements:

(b) Warning signs.

(i) Warning signs shall be provided and displayed in regulated areas. In addition, warning signs shall be posted at all approaches to regulated areas so that an employee may read the signs and take necessary protective steps before entering the area.

(ii) Warning signs required by (b)(i) of this subsection shall bear the following information:

Danger, Cadmium, Cancer Hazard, Can Cause Lung and Kidney Disease, Authorized Personnel Only, Respirators Required in This Area

(iii) The employer shall assure that signs required by this section are illuminated, cleaned, and maintained as necessary so that the legend is readily visible.

(c) Warning labels.

(i) Shipping and storage containers containing cadmium, cadmium compounds, or cadmium contaminated clothing, equipment, waste, scrap, or debris shall bear appropriate warning labels, as specified in (c)(ii) of this subsection.

(ii) The warning labels shall include at least the following information:

Danger, Contains Cadmium, Cancer Hazard, Avoid Creating Dust, Can Cause Lung and Kidney Disease

(iii) Where feasible, installed cadmium products shall have a visible label or other indication that cadmium is present.

(d) Employee information and training.

(i) The employer shall institute a training program for all employees who are potentially exposed to cadmium, assure employee participation in the program, and maintain a record of the contents of such program.

(ii) Training shall be provided prior to or at the time of initial assignment to a job involving potential exposure to cadmium and at least annually thereafter.

(iii) The employer shall make the training program understandable to the employee and shall assure that each employee is informed of the following:

(A) The health hazards associated with cadmium exposure, with special attention to the information incorporated in WAC 296-62-07441, Appendix A;

(B) The quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposures above the PEL;

(C) The engineering controls and work practices associated with the employee's job assignment;

(D) The measures employees can take to protect themselves from exposure to cadmium, including modification of such habits as smoking and personal hygiene, and specific procedures the employer has implemented to protect employees from exposure to cadmium such as appropriate work practices, emergency procedures, and the provision of personal protective equipment;

(E) The purpose, proper selection, fitting, proper use, and limitations of respirators and protective clothing;

(F) The purpose and a description of the medical surveillance program required by subsection (12) of this section;

(G) The contents of this section and its appendices; and

(H) The employee's rights of access to records under chapter 296-62 WAC, Part B.

(iv) Additional access to information and training program and materials.

(A) The employer shall make a copy of this section and its appendices readily available to all affected employees and shall provide a copy without cost if requested.

(B) Upon request, the employer shall provide to the director or authorized representative, all materials relating to the employee information and the training program.

(e) Multi-employer workplace. In a multi-employer workplace, an employer who produces, uses, or stores cadmium in a manner that may expose employees of other employers to cadmium shall notify those employers of the potential hazard in accordance with WAC 296-800-170 of the chemical hazard communication program standard.

(14) Recordkeeping.

(a) Exposure monitoring.

(i) The employer shall establish and keep an accurate record of all air monitoring for cadmium in the workplace.

(ii) This record shall include at least the following information:

(A) The monitoring date, shift, duration, air volume, and results in terms of an 8-hour TWA of each sample taken, and if cadmium is not detected, the detection level;

(B) The name, Social Security number, and job classification of all employees monitored and of all other employees whose exposures the monitoring result is intended to represent, including, where applicable, a description of how it was determined that the employee's monitoring result could be taken to represent other employee's exposures;

(C) A description of the sampling and analytical methods used and evidence of their accuracy;

(D) The type of respiratory protective device, if any, worn by the monitored employee and by any other employee whose exposure the monitoring result is intended to represent;

(E) A notation of any other conditions that might have affected the monitoring results;

(F) Any exposure monitoring or objective data that were used and the levels.

(iii) The employer shall maintain this record for at least thirty (30) years, in accordance with WAC 296-62-05207.

(iv) The employer shall also provide a copy of the results of an employee's air monitoring prescribed in subsection (4) of this section to an industry trade association and to the employee's union, if any, or, if either of such associations or unions do not exist, to another comparable organization that is competent to maintain such records and is reasonably accessible to employers and employees in the industry.

(b) Objective data for exemption from requirement for initial monitoring.

(i) For purposes of this section, objective data are information demonstrating that a particular product or material containing cadmium or a specific process, operation, or activity involving cadmium cannot release dust or fumes in concentrations at or above the action level even under the worst-case release conditions. Objective data can be obtained from an industry-wide study or from laboratory product test results from manufacturers of cadmium-containing products or materials. The data the employer uses from an industry-wide survey must be obtained under workplace conditions closely resembling the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

(ii) The employer shall maintain the record for at least 30 years of the objective data relied upon.

(c) Medical surveillance.

(i) The employer shall establish and maintain an accurate record for each employee covered by medical surveillance under (a)(i) of this subsection.

(ii) The record shall include at least the following information about the employee:

(A) Name, Social Security number, and description of duties;

(B) A copy of the physician's written opinions and of the explanation sheets for biological monitoring results;

(C) A copy of the medical history, and the results of any physical examination and all test results that are required to be provided by this section, including biological tests, x-rays,

pulmonary function tests, etc., or that have been obtained to further evaluate any condition that might be related to cadmium exposure;

(D) The employee's medical symptoms that might be related to exposure to cadmium; and

(E) A copy of the information provided to the physician as required by subsection (12)(i) of this section.

(iii) The employer shall assure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with WAC 296-62-05207.

(iv) At the employee's request, the employer shall promptly provide a copy of the employee's medical record, or update as appropriate, to a medical doctor or a union specified by the employee.

(d) Training. 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 records shall be prepared at the completion of training and shall be maintained on file for one (1) year beyond the date of training of that employee.

(e) Availability.

(i) Except as otherwise provided for in this section, access to all records required to be maintained by (a) through (d) of this subsection shall be in accordance with the provisions of WAC 296-62-052.

(ii) Within 15 days after a request, the employer shall make an employee's medical records required to be kept by (c) of this subsection available for examination and copying to the subject employee, to designated representatives, to anyone having the specific written consent of the subject employee, and after the employee's death or incapacitation, to the employee's family members.

(f) Transfer of records. Whenever an employer ceases to do business and there is no successor employer or designated organization to receive and retain records for the prescribed period, the employer shall comply with the requirements concerning transfer of records set forth in WAC 296-62-05215.

(15) Observation of monitoring.

(a) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to cadmium.

(b) Observation procedures. When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer with that clothing and equipment and shall assure that the observer uses such clothing and equipment and complies with all other applicable safety and health procedures.

(16) Appendices.

(a) Compliance with the fit testing requirements in WAC 296-62-07201 through 296-62-07248, Appendices A-1, A-2 and A-3 of chapter 296-62 WAC, Part E, are mandatory.

(b) Except where portions of WAC 296-62-07441, 296-62-07443, 296-62-07447, 296-62-07449, and 296-62-07451, Appendices A, B, D, E, and F, respectively, to this section are expressly incorporated in requirements of this section, these appendices are purely informational and are not intended to

create any additional obligations not otherwise imposed or to detract from any existing obligations.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050, 01-11-038, § 296-155-174, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-155-174, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-174, filed 7/20/94, effective 9/20/94; 93-21-075 (Order 93-06), § 296-155-174, filed 10/20/93, effective 12/1/93; 93-07-044 (Order 93-01), § 296-155-174, filed 3/13/93, effective 4/27/93.]

WAC 296-155-17609 Exposure assessment. (1) General.

(a) Each employer who has a workplace or operation covered by this standard shall initially determine if any employee may be exposed to lead at or above the action level.

(b) For the purposes of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(c) With the exception of monitoring under subsection (3) of this section, where monitoring is required by this standard, the employer shall collect personal samples representative of a full shift including at least one sample for each job classification in each work area either for each shift or for the shift with the highest exposure level.

(d) Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

(2) Protection of employees during assessment of exposure.

(a) With respect to the lead related tasks listed in this subdivision, where lead is present, until the employer performs an employee exposure assessment as required in this section and documents that the employee performing any of the listed tasks is not exposed above the PEL, the employer shall treat the employee as if the employee were exposed above the PEL, and not in excess of ten (10) times the PEL, and shall implement employee protective measures prescribed in subdivision (e) of this subsection. The tasks covered by this requirement are:

(i) Where lead containing coatings or paint are present: Manual demolition of structures (e.g. dry wall), manual scraping, manual sanding, heat gun applications, and power tool cleaning with dust collection systems;

(ii) Spray painting with lead paint.

(b) In addition, with regard to tasks not listed in subdivision (a), where the employer has any reason to believe that an employee performing the task may be exposed to lead in excess of the PEL, until the employer performs an employee exposure assessment as required by this section and documents that the employee's lead exposure is not above the PEL the employer shall treat the employee as if the employee were exposed above the PEL and shall implement employee protective measures as prescribed in subdivision (e) of this subsection.

(c) With respect to the tasks listed in this subdivision, where lead is present, until the employer performs an employee exposure assessment as required in this section, and documents that the employee performing any of the listed tasks is not exposed in excess of 500 $\mu\text{g}/\text{m}^3$, the employer shall treat the employee as if the employee were exposed to lead in excess of 500 $\mu\text{g}/\text{m}^3$ and shall implement employee protective measures as prescribed in subdivision

(e) of this subsection. Where the employer does establish that the employee is exposed to levels of lead below 500 $\mu\text{g}/\text{m}^3$, the employer may provide the exposed employee with the appropriate respirator prescribed for such use at such lower exposures, in accordance with Table 1 of WAC 296-155-17613. The tasks covered by this requirement are:

(i) Using lead containing mortar; lead burning;

(ii) Where lead containing coatings or paint are present: Rivet busting; power tool cleaning without dust collection systems; cleanup activities where dry expendable abrasives are used; and abrasive blasting enclosure movement and removal.

(d) With respect to the tasks listed in this subdivision, where lead is present, until the employer performs an employee exposure assessment as required in this section and documents that the employee performing any of the listed tasks is not exposed to lead in excess of 2,500 $\mu\text{g}/\text{m}^3$ (50xPEL), the employer shall treat the employee as if the employee were exposed to lead in excess of 2,500 $\mu\text{g}/\text{m}^3$ and shall implement employee protective measures as prescribed in (e) of this subsection. Where the employer does establish that the employee is exposed to levels of lead below 2,500 $\mu\text{g}/\text{m}^3$, the employer may provide the exposed employee with the appropriate respirator prescribed for use at such lower exposures, in accordance with Table I of this WAC 296-155-17613. Protection described in this section is required where lead containing coatings or paint are present on structures when performing:

(i) Abrasive blasting;

(ii) Welding;

(iii) Cutting; and

(iv) Torch burning.

(e) Until the employer performs an employee exposure assessment as required by this section and determines actual employee exposure, the employer shall provide to employees performing the tasks described in (a) through (d) of this subsection with interim protection as follows:

(i) Appropriate respiratory protection in accordance with WAC 296-155-17613.

(ii) Appropriate personal protective clothing and equipment in accordance with WAC 296-155-17615.

(iii) Change areas in accordance with WAC 296-155-17619(2).

(iv) Hand washing facilities in accordance with WAC 296-155-17619(5).

(v) Biological monitoring in accordance with WAC 296-155-17621 (1)(a), to consist of blood sampling and analysis for lead and zinc protoporphyrin levels, and

(vi) Training as required by WAC 296-155-17625 (1)(a) regarding WAC 296-800-170, Chemical hazard communication; training as required by WAC 296-155-17625 (2)(c), regarding use of respirators; and training in accordance with WAC 296-155-100.

(3) Basis of initial determination.

(a) Except as provided by (c) and (d) of this subsection the employer shall monitor employee exposures and shall base initial determinations on the employee exposure monitoring results and any of the following, relevant considerations:

(i) Any information, observations, or calculations which would indicate employee exposure to lead;

(ii) Any previous measurements of airborne lead; and

(iii) Any employee complaints of symptoms which may be attributable to exposure to lead.

(b) Monitoring for the initial determination where performed may be limited to a representative sample of the exposed employees who the employer reasonably believes are exposed to the greatest airborne concentrations of lead in the workplace.

(c) Where the employer has previously monitored for lead exposures, and the data were obtained within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the employer's current operations, the employer may rely on such earlier monitoring results to satisfy the requirements of subdivision (a) of this subsection and subsection (5) of this section if the sampling and analytical methods meet the accuracy and confidence levels of subsection (9) of this section.

(d) Where the employer has objective data, demonstrating that a particular product or material containing lead or a specific process, operation or activity involving lead cannot result in employee exposure to lead at or above the action level during processing, use, or handling, the employer may rely upon such data instead of implementing initial monitoring.

(i) The employer shall establish and maintain an accurate record documenting the nature and relevancy of objective data as specified in WAC 296-155-17629(4), where used in assessing employee exposure in lieu of exposure monitoring.

(ii) Objective data, as described in subdivision (d) of this subsection, is not permitted to be used for exposure assessment in connection with subsection (2) of this section.

(4) Positive initial determination and initial monitoring.

(a) Where a determination conducted under subsections (1), (2) and (3) of this section shows the possibility of any employee exposure at or above the action level the employer shall conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

(b) Where the employer has previously monitored for lead exposure, and the data were obtained within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the employer's current operations, the employer may rely on such earlier monitoring results to satisfy the requirements of (a) of this subsection if the sampling and analytical methods meet the accuracy and confidence levels of subsection (9) of this section.

(5) Negative initial determination. Where a determination, conducted under subsections (1), (2), and (3) of this section is made that no employee is exposed to airborne concentrations of lead at or above the action level the employer shall make a written record of such determination. The record shall include at least the information specified in subsection (3)(a) of this section and shall also include the date of determina-

tion, location within the worksite, and the name and social security number of each employee monitored.

(6) Frequency.

(a) If the initial determination reveals employee exposure to be below the action level further exposure determination need not be repeated except as otherwise provided in subsection (7) of this section.

(b) If the initial determination or subsequent determination reveals employee exposure to be at or above the action level but at or below the PEL the employer shall perform monitoring in accordance with this section at least every 6 months. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in subsection (7) of this section.

(c) If the initial determination reveals that employee exposure is above the PEL the employer shall perform monitoring quarterly. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are at or below the PEL but at or above the action level at which time the employer shall repeat monitoring for that employee at the frequency specified in subdivision (b) of this subsection, except as otherwise provided in subsection (7) of this section. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in subsection (7) of this section.

(7) Additional exposure assessments. Whenever there has been a change of equipment, process, control, personnel or a new task has been initiated that may result in additional employees being exposed to lead at or above the action level or may result in employees already exposed at or above the action level being exposed above the PEL, the employer shall conduct additional monitoring in accordance with this section.

(8) Employee notification.

(a) Within 5 working days after completion of the exposure assessment the employer shall notify each employee in writing of the results which represent that employee's exposure.

(b) Whenever the results indicate that the representative employee exposure, without regard to respirators, is at or above the PEL the employer shall include in the written notice a statement that the employee's exposure was at or above that level and a description of the corrective action taken or to be taken to reduce exposure to below that level.

(9) Accuracy of measurement. The employer shall use a method of monitoring and analysis which has an accuracy (to a confidence level of 95%) of not less than plus or minus 25 percent for airborne concentrations of lead equal to or greater than 30 µg/m³.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-17609, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-22-054 (Order 93-07), § 296-155-17609, filed 10/29/93, effective 12/10/93.]

WAC 296-155-17615 Protective work clothing and equipment. (1) Provision and use. Where an employee is exposed to lead above the PEL without regard to the use of respirators, where employees are exposed to lead compounds which may cause skin or eye irritation (e.g., lead arsenate, lead azide), and as protection for employees performing tasks as specified in WAC 296-155-17609(2), the employer shall provide at no cost to the employee and assure that the employee uses appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments such as, but not limited to:

- (a) Coveralls or similar full-body work clothing;
- (b) Gloves, hats, and shoes or disposable shoe coverlets; and
- (c) Face shields, vented goggles, or other appropriate protective equipment which complies with WAC 296-800-160.

(2) Cleaning and replacement.

(a) The employer shall provide the protective clothing required in subsection (1) of this section in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 µg/m³ of lead as an 8-hour TWA.

(b) The employer shall provide for the cleaning, laundering, and disposal of protective clothing and equipment required by subsection (1) of this section.

(c) The employer shall repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

(d) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change areas provided for that purpose as prescribed in WAC 296-155-17619(2).

(e) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area which prevents dispersion of lead outside the container.

(f) The employer shall inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(g) The employer shall assure that the containers of contaminated protective clothing and equipment required by subdivision (e) of this subsection are labeled as follows:

Caution: Clothing contaminated with lead. Do not remove dust by blowing or shaking. Dispose of lead contaminated wash water in accordance with applicable local, state, or federal regulations.

(h) The employer shall prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-17615, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 93-22-054 (Order 93-07), § 296-155-17615, filed 10/29/93, effective 12/10/93.]

WAC 296-155-17625 Employee information and training. (1) General.

(a) The employer shall communicate information concerning lead hazards according to the requirements of WISHA's Hazard Communication Standard for the construction industry, chapter 296-800 WAC, including but not limited to the requirements concerning warning signs and labels,

material safety data sheets (MSDS), and employee information and training. In addition, employers shall comply with the following requirements:

(b) For all employees who are subject to exposure to lead at or above the action level on any day or who are subject to exposure to lead compounds which may cause skin or eye irritation (e.g., lead arsenate, lead azide), the employer shall provide a training program in accordance with subsection (2) of this section and assure employee participation.

(c) The employer shall provide the training program as initial training prior to the time of job assignment or prior to the start up date for this requirement, whichever comes last.

(d) The employer shall also provide the training program at least annually for each employee who is subject to lead exposure at or above the action level on any day.

(2) Training program. The employer shall assure that each employee is trained in the following:

(a) The content of this standard and its appendices;

(b) The specific nature of the operations which could result in exposure to lead above the action level;

(c) The training requirements for respiratory protection as required by chapter 296-62 WAC, Part E (see WAC 296-62-07117, 296-62-07172, and WAC 296-62-07186 through 296-62-07190);

(d) The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant);

(e) The engineering controls and work practices associated with the employee's job assignment including training of employees to follow relevant good work practices described in Appendix B, WAC 296-155-17652;

(f) The contents of any compliance plan in effect;

(g) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and

(h) The employee's right of access to records under Part B, chapter 296-62 WAC and chapter 296-800 WAC.

(3) Access to information and training materials.

(a) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(b) The employer shall provide, upon request, all materials relating to the employee information and training program to affected employees and their designated representatives, and the director.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-17625, filed 5/9/01, effective 9/1/01; 99-10-071, § 296-155-17625, filed 5/4/99, effective 9/1/99. Statutory Authority: Chapter 49.17 RCW. 93-22-054 (Order 93-07), § 296-155-17625, filed 10/29/93, effective 12/10/93.]

WAC 296-155-180 Hazard communication. General.

The employer shall develop and maintain a chemical hazard communication program as required by WAC 296-

800-170, 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-180, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-16-145, § 296-155-180, filed 8/3/94, effective 9/12/94; 89-11-035 (Order 89-03), § 296-155-180, filed 5/15/89, effective 6/30/89.]

WAC 296-155-200 General requirements. (1) Application.

(a) Protective equipment, including personal protective equipment for eyes, face, head, hearing, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be 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.

(2) Construction personnel shall comply with plant or job safety practices and procedures, peculiar to particular industries and plants, relating to protective equipment and procedures when engaged in construction work in such plants or job sites.

(3) The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this part indicates a need for using such equipment to reduce the hazards to the employees.

(4) Where there is a danger of contact with moving parts of machinery, or the work process is such that a hazard exists:

(a) The clothing of employees shall fit closely about the body.

(b) Dangling neck wear, bracelets, wristwatches, rings, or similar articles shall not be worn by employees.

(5) Employees, whose duties are performed in areas and under circumstances where they are exposed to the danger of moving vehicles, shall wear work vests of highly visible materials, or equivalent distinguishing apparel.

(6) Employers shall ensure that employees wear no less than a short sleeved shirt, long pants, and shoes. Employees shall wear no less than a short sleeved shirt, long pants, and shoes. Shoes shall meet the requirements of WAC 296-155-212.

Note: For additional personal protective and life saving equipment requirements, refer to WAC 296-800-160.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-200, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-200, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-200, filed 1/21/86; Order 76-29, § 296-155-200, filed 9/30/76; Order 74-26, § 296-155-200, filed 5/7/74, effective 6/6/74.]

WAC 296-155-20301 Definitions. Confined space means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and

(3) Is not designed for continuous employee occupancy.

"Corrosives" means substances which in contact with living tissue cause destruction of the tissue by chemical action.

"Hazardous atmosphere" means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

(1) Flammable gas, vapor, or mist in excess of ten percent of its lower flammable limit (LFL);

(2) Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of five feet (1.52m) or less.

(3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in chapter 296-62 WAC, general occupational health standards, and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

(5) Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants for which WISHA has not determined a dose or permissible exposure limit, other sources of information, such as material safety data sheets that comply with the Chemical Hazard Communication Standard, WAC 296-800-170, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

"Irritants" means substances which on immediate, prolonged, or repeated contact with normal living tissue will induce a local inflammatory reaction.

"Oxygen deficient atmospheres" means atmospheres at sea level having less than 19.5% oxygen by volume or having a partial pressure of 148 millimeters of mercury or less. This may deviate when working at higher altitudes and should be determined for an individual location. Factors such as acclimatization, physical condition of persons involved, etc., must be considered for such circumstances and conditions. (See chapter 296-62 WAC, Part M, permit-required confined spaces.)

"Toxicants" means substances which have the inherent capacity to produce personal injury or illness to persons by absorption through any body surface.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-20301, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 95-17-036, § 296-155-20301, filed 8/9/95, effective 9/25/95. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-155-20301, filed 1/18/95, effective 3/1/95; 91-24-017 (Order 91-07), § 296-155-20301, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-20301, filed 1/21/86.]

WAC 296-155-205 Head protection. (1) All employees on any construction site shall be provided an individual hard hat which meets all requirements of (a) and (b) of this subsection. Employers shall provide individual hard hats at no cost to the employees.

(a) Hard hats for the protection of employees against impact and/or penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection.

(b) Hard hats for the head protection of employees exposed to high voltage electrical shock and burns shall meet the specifications contained in American National Standards Institute, Z89.2-1971.

(2) All employees must have their individual hard hats on site and readily available at all times.

(3) All employees shall wear a hard hat on any construction site whenever there is a potential exposure to danger of flying or falling objects to persons working or occupying the area.

Note: The hard hat may be removed whenever there is no potential exposure to a hazard.

(4)(a) Employees working on asphalt paving crews exposed to extreme temperatures from hot mix and not exposed to falling objects do not have to wear protective hard hats.

(b) Flaggers working with asphalt paving operations must comply with the requirements of WAC 296-155-305.

(5) Caps with metal buttons or metal visors shall not be worn around electrical hazards.

(6) Employees working near moving machinery or in locations which present a hair-catching or fire hazard shall wear caps, nets or other head and face protection that will completely contain the hair.

[Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050, 2000 c 239, and chapter 34.05 RCW. 01-04-015, § 296-155-205, filed 1/26/01, effective 2/28/01. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-155-205, filed 5/20/91, effective 6/20/91; 89-11-035 (Order 89-03), § 296-155-205, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-205, filed 1/21/86; Order 74-26, § 296-155-205, filed 5/7/74, effective 6/6/74.]

WAC 296-155-260 Fire protection. (1) General requirements.

(a) The employer shall be responsible for development of a fire protection program to be followed throughout all phases of construction and demolition work, and the employer shall provide for fire fighting equipment as specified in this part. As fire hazards occur, there shall be no delay in providing necessary equipment.

(b) Access to all available fire fighting equipment shall be maintained at all times.

(c) All fire fighting equipment, provided by the employer, shall be conspicuously located.

(d) All fire fighting equipment shall be periodically inspected by a competent person, and maintained in operating condition. Defective equipment shall be immediately replaced.

(e) As warranted by the project, the employer shall provide a trained and equipped fire fighting organization (fire brigade) to assure adequate protection to life.

(2) Water supply.

(a) A temporary or permanent water supply, of sufficient volume, duration, and pressure, required to properly operate fire fighting equipment shall be made available as soon as combustible materials accumulate.

(b) Where underground water mains are to be provided, they shall be installed, completed, and made available for use as soon as practicable.

(3) Portable fire fighting equipment.

(a) A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of a combustible building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed a horizontal distance of 100 feet.

Note: One 55-gallon open drum of water with two fire pails may be substituted for a fire extinguisher having a 2A rating.

(b) A 1/2-inch diameter garden-type hose line, not to exceed 100 feet in length and equipped with a nozzle, may be substituted for a 2A-rated fire extinguisher, provided it is capable of discharging a minimum of 5 gallons per minute with a minimum hose stream range of 30 feet horizontally. The garden-type hose lines shall be mounted on conventional racks or reels. The number and location of hose racks or reels shall be such that at least one hose stream can be applied to all points in the area.

(c) One or more fire extinguishers, rated not less than 2A, shall be provided on each floor. In multistory buildings, where combustibles are present, at least one fire extinguisher shall be located adjacent to a stairway.

(d) Extinguishers and water drums, subject to freezing, shall be protected from freezing.


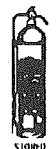







(e) A fire extinguisher, rated not less than 10B, shall be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the jobsite. This requirement does not apply to the integral fuel tanks of motor vehicles.

(f) Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.

(g) Portable fire extinguishers shall be inspected periodically and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A-1981 and WAC 296-800-300.

(h) Fire extinguishers which have been listed or approved by a nationally recognized testing laboratory, shall be used to meet the requirements of this part. (See Table D-1)

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

	WATER TYPE				FOAM	CARBON DIOXIDE	DRY CHEMICAL			
							SODIUM OR POTASSIUM BICARBONATE		MULTI-PURPOSE ABC	
	 STORED PRESSURE	 CARTRIDGE-OPERATED	 WATER PUMP TYPE	 SODA ACID			 FOAM	 CO ₂	 CARTRIDGE OPERATED	 STORED PRESSURE
CLASS A FIRES WOOD, PAPER, RUBBER, GLASS, PLASTIC, ETC.	YES	YES	YES	YES	YES	NO <small>(OUTWALL CONTROL SMALL SURFACE FIRES)</small>	NO <small>(OUTWALL CONTROL SMALL SURFACE FIRES)</small>	NO <small>(OUTWALL CONTROL SMALL SURFACE FIRES)</small>	YES	YES
CLASS B FIRES FLAMMABLE LIQUIDS, GASES, OILS, BUTANE, PROPANE, ETC.	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES
CLASS C FIRES ELECTRICAL EQUIPMENT	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES
CLASS D FIRES COMBUSTIBLE METALS	SPECIAL EXTINGUISHING AGENTS APPROVED BY RECOGNIZED TESTING LABORATORIES									
METHODS OF OPERATION	PULL PIN - SQUEEZE LEVER	TURN UPWARD AND PUMP	PUMP HANDLE	TURN UPWARD	TURN UPWARD	PULL PIN SQUEEZE LEVER	PULL PIN SQUEEZE LEVER	PULL PIN SQUEEZE LEVER	PULL PIN SQUEEZE LEVER	PULL PIN SQUEEZE LEVER
RANGE	30' - 40'	30' - 40'	30' - 40'	30' - 40'	30' - 40'	3' - 8'	5' - 20'	5' - 20'	5' - 20'	5' - 20'
MAINTENANCE	CHECK AIR PRESSURE GAUGE MONTHLY	WEIGH GAS CARTRIDGE AND WATER IF REQUIRED ANNUALLY	RECHARGE AND FILL WITH WATER ANNUALLY	DISCHARGE ANNUALLY	DISCHARGE ANNUALLY	WEIGH GAS CARTRIDGE ANNUALLY	WEIGH GAS CARTRIDGE ANNUALLY	CHECK PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	CHECK PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	WEIGH GAS CARTRIDGE ANNUALLY

Note: One hundred feet, or less, of 1-1/2 inch hose, with a nozzle capable of discharging water at 25 gallons or more per minute, may be substituted for a fire extinguisher rated not more than 2A in the designated area provided that the hose line can reach all points in the area.

(i) If fire hose connections are not compatible with local fire fighting equipment, the contractor shall provide adapters, or equivalent, to permit connections.

(j) During demolition involving combustible materials, charged hose lines, supplied by hydrants, water tank trucks with pumps, or equivalent, shall be made available.

(4) Fixed fire fighting equipment.

(a) Sprinkler protection.

(i) If the facility being constructed includes the installation of automatic sprinkler protection, the installation shall closely follow the construction and be placed in service as soon as applicable laws permit following completion of each story.

(ii) During demolition or alterations, existing automatic sprinkler installations shall be retained in service as long as reasonable. The operation of sprinkler control valves shall be permitted only by properly authorized persons.

Note: Modification of sprinkler systems to permit alterations or additional demolition should be expedited so that the automatic protection may be returned to service as quickly as possible. Sprinkler control valves shall be checked daily at close of work to ascertain that the protection is in service.

(b) Standpipes. In all structures in which standpipes are required, or where standpipes exist in structures being altered, they shall be brought up as soon as applicable laws permit, and shall be maintained as construction progresses in such a manner that they are always ready for fire protection

use. The standpipes shall be provided with Siamese fire department connections on the outside of the structure, at the street level, which shall be conspicuously marked. There shall be at least one standard hose outlet at each floor.

(5) Fire alarm devices.

(a) An alarm system, e.g., telephone system, siren, etc., shall be established by the employer whereby employees on the site and the local fire department can be alerted for an emergency.

(b) The alarm code and reporting instructions shall be conspicuously posted at phones and at employee entrances.

(6) Fire cutoffs.

(a) Fire walls and exit stairways, required for the completed buildings, shall be given construction priority. Fire doors, with automatic closing devices, shall be hung on openings as soon as practical.

(b) Fire cutoffs shall be retained in buildings undergoing alterations or demolition until operations necessitate their removal.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-155-260, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-155-260, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-260, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-260, filed 1/21/86; Order 76-6, § 296-155-260, filed 3/1/76; Order 74-26, § 296-155-260, filed 5/7/74, effective 6/6/74.]

WAC 296-155-270 Flammable and combustible liquids. (1) General requirements.

(a) Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. Approved metal safety cans, or department of trans-

portation approved containers shall be used for the handling and use of flammable liquids in quantities five gallons or less, except that this shall not apply to those flammable liquid materials which are highly viscid (extremely hard to pour), which may be used and handled in original shipping containers. For quantities of one gallon or less, only the original container may be used for storage, use, and handling of flammable liquids.

(b) Flammable or combustible liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

(c) Flammable and combustible liquid containers shall be legibly marked to indicate their contents. Each storage container for flammable or combustible liquids, with a capacity of 50 gallons or more, shall have the contents of the container identified by a sign of clearly visible contrasting colors with letters at least 3 inches high, painted on the container at the discharge valve and at the fill point.

(d) Gasoline shall not be used as a solvent or a cleaning agent.

(2) Indoor storage of flammable and combustible liquids.

(a) No more than 25 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet. For storage of liquid petroleum gas, see WAC 296-155-275.

(b) Quantities of flammable and combustible liquid in excess of 25 gallons shall be stored in an acceptable or approved cabinet meeting the following requirements:

(i) Acceptable wooden storage cabinets shall be constructed in the following manner, or equivalent: The bottom, sides, and top shall be constructed of an exterior grade of plywood at least 1 inch in thickness, which shall not break down or delaminate under standard fire test conditions. All joints shall be rabbeted and shall be fastened in two directions with flathead wood screws, when more than one door is used, there shall be a rabbeted overlap of not less than 1 inch. Steel hinges shall be mounted in such a manner as to not lose their holding capacity due to loosening or burning out of the screws when subjected to fire. Such cabinets shall be painted inside and out with fire retardant paint.

(ii) Approved metal storage cabinets will be acceptable.

(iii) Cabinets shall be labeled in conspicuous lettering, "Flammable—Keep fire away."

(c) Not more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one storage cabinet. Not more than three such cabinets may be located in a single storage area. Quantities in excess of this shall be stored in an inside storage room.

(d)(i) Inside storage room 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 Test of Building Construction and Material, NFPA 251-1972.

(ii) Where an automatic extinguishing system is provided, the system shall be designed and installed in an approved 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-trench, inside of the room, which drains to a safe location. Where other portions of the building or other buildings are exposed, windows shall be protected as set forth in the Standard for Fire Doors and Windows, NFPA No. 80-1983, for Class E or F openings. Wood of at least 1-inch nominal thickness may be used for shelving, racks, dunnage, scuff-boards, floor overlay and similar installations.

(iii) Materials which will react with water and create a fire hazard shall not be stored in the same room with flammable or combustible liquids.

(iv) Storage in inside storage rooms shall comply with Table D-2 following:

TABLE D-2

Fire protection provided	Fire resistance	Maximum size	Total allowable quantities gals./sq. ft./floor area
Yes	2 hrs.	500 sq. ft.	10
No	2 hrs.	500 sq. ft.	4
Yes	1 hr.	150 sq. ft.	5
No	1 hr.	150 sq. ft.	2

Note: Fire protection system shall be sprinkler, water spray, carbon dioxide or other system approved by a nationally recognized testing laboratory for this purpose.

(v) Electrical wiring and equipment located in inside storage rooms shall be approved for Class 1, Division 1, hazardous locations. For definition of Class 1, Division 1, hazardous locations, see WAC 296-155-456.

(vi) Every inside storage room shall be provided with either a gravity or a mechanical exhausting system. Such system shall commence not more than 12 inches above the floor and be designed to provide for a complete change of air within the room at least 6 times per hour. If a mechanical exhausting 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. An electric pilot light shall be installed adjacent to the switch if flammable liquids are dispensed within the room. Where gravity ventilation is provided, the fresh air intake, as well as the exhausting outlet from the room, shall be on the exterior of the building in which the room is located.

(vii) 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.

(viii) Flammable and combustible liquids in excess of that permitted in inside storage rooms shall be stored outside of buildings in accordance with subsection (3) of this section.

(3) Storage outside buildings.

(a) Storage of containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one pile or area. Piles or groups of containers shall be separated by a 5-foot clearance. Piles or groups of containers shall not be nearer than 20 feet to a building.

(b) Within 200 feet of each pile of containers, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.

(c) 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 or earth dike at least 12 inches high. When curbs or dikes are used, provisions shall be made for draining off 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) Outdoor portable tank storage.

(i) Portable tanks shall not be nearer than 20 feet from any building. Two or more portable tanks, grouped together, having a combined capacity in excess of 2,200 gallons, shall be separated by a 5-foot-clear area. Individual portable tanks exceeding 1,100 gallons shall be separated by a 5-foot-clear area.

(ii) Within 200 feet of each portable tank, there shall be a 12-foot-wide access way to permit approach of fire control apparatus.

(e) Storage areas shall be kept free of weeds, debris, and other combustible material not necessary to the storage.

(f) Portable tanks, not exceeding 660 gallons, shall be provided with emergency venting and other devices, as required by chapters III and IV of NFPA 30-1972, The Flammable and Combustible Liquids Code.

(g) Portable tanks, in excess of 660 gallons, shall have emergency venting and other devices, as required by chapters II and III of the Flammable and Combustible Liquids Code, NFPA 30-1972.

(4) Fire control for flammable or combustible liquid storage.

(a) At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.

(b) At least one portable fire extinguisher having a rating of not less than 20-B units shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.

(c) When sprinklers are provided, they shall be installed in accordance with the Standard for the Installation of Sprinkler Systems, NFPA 13-1972.

(d) At least one portable fire extinguisher having a rating of not less than 20-B:C units shall be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable or combustible liquids.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(5) Dispensing liquids.

(a) Areas in which flammable or combustible liquids are transferred at the same time, in quantities greater than 5 gallons from one tank or container to another tank or container, shall be separated from other operations by 25-foot distance or by construction having a fire-resistance of at least 1 hour. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided to maintain the concentration of flammable vapor at or below 10 percent of the lower flammable limit.

(b) Transfer flammable liquids from one container to another shall be done only when containers are electrically interconnected (bonded).

(c) Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or tanks within a building or outside 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 or pump, through an approved self-closing valve. Transferring by means of air pressure on the container or portable tank is prohibited.

(d) The dispensing units shall be protected against collision damage.

(e) Dispensing devices and nozzles for flammable liquids shall be of an approved type, as required by WAC 296-24-33015.

(6) Handling liquids at point of final use.

(a) Flammable liquids shall be kept in closed containers when not actually in use.

(b) Leakage or spillage of flammable or combustible liquids shall be disposed of promptly and safely.

(c) Flammable liquids shall be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearance.

(7) Service and refueling areas.

(a) Flammable or combustible liquids shall be stored in approved closed containers, in tanks located underground, or in aboveground portable tanks.

(b) The tank trucks shall comply with the requirements covered in the Standard for Tank Vehicles for Flammable and Combustible Liquids, NFPA No. 385-1977.

(c) The dispensing hose shall be an approved type.

(d) The dispensing nozzle shall be an approved automatic-closing type.

(e) Underground tanks shall not be abandoned.

(f) Clearly identified and easily accessible switch(es) shall be provided at a location remote from dispensing devices to shut off the power to all dispensing devices in the event of an emergency.

(g)(i) Heating equipment of an approved type may be installed in the lubrication or service area where there is no dispensing or transferring of flammable liquids, provided the bottom of the heating unit is at least 18 inches above the floor and is protected from physical damage.

(ii) Heating equipment installed in lubrication or service areas, where flammable liquids are dispensed, shall be of an approved type for garages, and shall be installed at least 8 feet above the floor.

(h) 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.

(i) Conspicuous and legible signs prohibiting smoking shall be posted.

(j) The motor of any equipment being fueled shall be shut off during the fueling operation.

(k) Each service or fueling area shall be provided with at least one fire extinguisher having a rating of not less than 20BC located so that an extinguisher will be within 75 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service area.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-155-270, filed 8/8/01, effective 9/1/01; 99-17-094, § 296-155-270, filed 8/17/99, effective 12/1/99. Statutory Authority: Chapter 49.17 RCW. 88-23-054 (Order 88-25), § 296-155-270, filed 11/14/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-270, filed 1/21/86; Order 74-26, § 296-155-270, filed 5/7/74, effective 6/6/74.]

WAC 296-155-275 Liquefied petroleum gas (LP-gas). (1) Approval of equipment and systems.

(a) Each system shall have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type.

(b) All cylinders shall meet the department of transportation specification identification requirements published in 49 CFR Part 178, Shipping Container Specifications.

(2) Welding on LP-gas containers. Welding is prohibited on containers.

(3) Container valves and container accessories.

(a) Valves, fittings, and accessories connected directly to the container, including primary shut off 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.

(b) Connections to containers, except safety relief connections, liquid level gauging devices, and plugged openings, shall have shutoff valves located as close to the container as practicable.

(4) Safety devices.

(a) Every container and every vaporizer shall be provided with one or more approved safety relief valves or devices. These valves shall be arranged to afford free vent to the outer air with discharge not less than 5 feet horizontally away from any opening into a building which is below such discharge.

(b) Shutoff valves shall not be installed between the safety relief device 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.

(c) Container safety relief devices and regulator relief vents shall be located not less than 5 feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(5) Dispensing.

(a) Filling of fuel containers for trucks or motor vehicles from bulk storage containers shall be performed not less than 10 feet from the nearest masonry-walled building, or not less than 25 feet from the nearest building or other construction and, in any event, not less than 25 feet from any building opening.

(b) Filling of portable containers or containers mounted on skids from storage containers shall be performed not less than 50 feet from the nearest building.

(6) Requirements for appliances.

(a) LP-gas consuming appliances shall be approved types.

(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.

(7) Containers and regulating equipment installed outside of buildings or structures. Containers shall be upright upon firm foundations or otherwise firmly secured. The possible effect on the outlet piping of settling shall be guarded against by a flexible connection or special fitting.

(8) 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 impractical, containers and equipment are permitted to be used inside of buildings or structures in accordance with (b) through (k) of this subsection. In addition, there may be provisions of this section that are applicable to the particular use or occupancy.

(b) "Containers in use" means connected for use.

(c) Systems utilizing containers having a water capacity greater than 2 1/2-pounds (nominal 1 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.

(d) Regulators, when required, 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.

(e) Valves on containers having water capacity greater than 50 pounds (nominal 20 pounds LP-gas capacity) shall be protected from damage while in use or storage.

(f) Aluminum piping or tubing shall not be used.

(g) Hose shall be designed for a working pressure of at least 250 p.s.i.g. Design, construction, and performance of hose, and hose connections shall have their suitability determined by listing by a nationally recognized testing agency. The hose length shall be as short as practical. Hoses shall be long enough to permit compliance with spacing provisions of (a) through (m) of this subsection, without kinking or straining, or causing hose to be so close to a burner as to be damaged by heat.

(h) Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the mainburner, and pilot if used, in the event of flame failure. Such heaters, having inputs above 50,000 BTU per hour, shall be equipped with either a pilot, which must be lighted and proved before the main burner can be turned on, or an electrical ignition system.

Note: The provisions of this subdivision do not apply to portable heaters under 7,500 BTU per hour input when used with containers having a maximum water capacity of 2 1/2 pounds.

(i) Container valves, connectors, regulators, manifolds, piping, and tubing shall not be used as structural supports for heaters.

(j) Containers, regulating equipment, manifolds, pipe, tubing, and hose shall be located to minimize exposure to high temperatures or physical damage.

(k) Containers having a water capacity greater than 2 1/2 pounds (nominal 1 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.

(l) The maximum water capacity of individual containers shall be 245 pounds (nominal 100 pounds LP-gas capacity).

(m) For temporary heating, heaters (other than integral heater-container units) shall be located at least 6 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 containers. Blower and radiant type heaters shall not be directed toward any LP-gas container within 20 feet.

(n) 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 20 feet.

(o) 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 735 pounds (nominal 300 pounds LP-gas capacity). Such manifolds shall be separated by at least 20 feet.

(p) Storage of containers awaiting use shall be in accordance with subsections (10) and (11) of this section.

(9) Multiple container systems.

(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. This provision is not to be construed as requiring an automatic changeover device.

(b) Heaters shall be equipped with an approved regulator in the supply line between the fuel cylinder and the heater unit. Cylinder connectors shall be provided with an excess flow valve to minimize the flow of gas in the event the fuel line becomes ruptured.

(c) 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 from the elements.

(10) Storage of LPG containers. Storage of LPG within building is prohibited.

(11) Storage outside of buildings.

(a) Storage outside of buildings, for containers awaiting use, shall be located from the nearest building or group of buildings, in accordance with Table D-3:

TABLE D-3

Quantity of LP-gas stored:	Distance (feet)
500 lbs. or less	0
501 to 6,000 lbs.	10
6,001 to 10,000 lbs.	20
Over 10,000 lbs.	25

(b) Containers shall be in a suitable ventilated enclosure or otherwise protected against tampering, or possible damage by vehicular traffic.

(12) Fire protection. Storage locations shall be provided with at least one approved portable fire extinguisher having a rating of not less than 20-B:C.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-155-275, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-275, filed 1/21/86; Order 76-29, § 296-155-275, filed 9/30/76; Order 74-26, § 296-155-275, filed 5/7/74, effective 6/6/74.]

WAC 296-155-305 Signaling and flaggers. (1)(a)

Except as otherwise required in these rules; traffic control devices, signs and barricades must be set up and used according to the guidelines and recommendations in the Federal Highway Administration's:

Manual on Uniform Traffic Control Devices (MUTCD), 1995 Edition-Revision 4, Part VI, Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility, and Incident Management Operations.

(b) Job site workers with specific traffic control responsibilities must be trained in traffic control techniques, device usage, and placement.

Note:

- You may purchase copies of the MUTCD by writing:

U.S. Government Printing Office
Superintendent of Documents
Mail Stop: SSOP,
Washington D.C. 20402-9328

- You may read a copy of the MUTCD at any department of labor and industries (L&I) service location.

(2)(a) Flaggers or other appropriate traffic controls must be used when signs, signals, and barricades do not provide necessary protection from traffic at operations on or adjacent to a highway or street.

(b) Flaggers are to be used only when other reasonable traffic control methods will not adequately control traffic in the work zone.

(3) Flagger signaling directions must conform to the guidelines and recommendations of MUTCD, 1995 Edition-Revision 4, Part VI, as amended by the Washington state department of transportation (WSDOT) pamphlet, "*Washington State Modifications to the MUTCD*." (M 24-01)

(4)(a) Flagger hand signaling must be by sign paddles or lights approved by WSDOT. During emergency situations, red flags may be used to draw a driver's attention to particularly hazardous conditions. In nonemergency situations, a red flag may be held in a flagger's free hand to supplement the use of a sign paddle or lights.

(b) When sign paddles are used, they must comply with the requirements of MUTCD, 1995 Edition-Revision 4, Part VI. Specifically, sign paddles:

- Must be at least 18 inches in diameter;
- Printed with letters at least 6 inches high;
- The "STOP" side of the paddle must have a red background with white lettering; and
- The "SLOW" side of the paddle must have an orange background with black lettering.

(c) When hand signaling is used during periods of darkness, sign paddles must be retroreflective or illuminated in the same manner as signs.

(5)(a) While flagging during daylight hours, a flagger must, at a minimum, wear:

- A high visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999, American National Standard for High-Visibility Safety Apparel. Specifically, a garment containing at least 775 square inches of background material and 201 square inches of retroreflective material that encircles the torso and is placed to provide 360 degrees visibility around the flagger. The acceptable high visibility colors are fluorescent yellow-green, fluorescent orange-red or fluorescent red; and

- A high visibility hard hat. The acceptable high visibility colors are white, yellow, yellow-green, orange or red.

- When snow or fog limit visibility, a flagger must wear pants of any high visibility color other than white.

(b) While flagging during hours of darkness, a flagger must at least wear:

- A high visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999 over white coveralls, or other coveralls or trousers that have retroreflective banding on the legs designed according to ANSI/ISEA 107-1999 standards; and

- A high visibility hard hat that is marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

- For the purpose of this rule, "hours of darkness" means one-half hour before sunset and one-half hour after sunrise.

- When snow or fog limit visibility, pants, coveralls, or rain gear in a highly visible color with retroreflective banding on the legs designed according to ANSI/ISEA 107-1999 must be worn.

Note: High visibility safety garments made of mesh material may be worn by flaggers if they meet the chromaticity requirements of ANSI/ISEA 107-1999, American National Standard for High-Visibility Safety Apparel.

Note:

- You may purchase copies of ANSI/ISEA 107-1999 by writing:

American National Standards Institute
11 West 42nd Street
New York, NY 10036

or

Contacting the ANSI web site at:
<http://web.ansi.org/>

- You may read a copy of ANSI/ISEA 107-1999 at any Washington state library.

(6)(a) Each flagger must be trained every three years.

(b) Flagger training must be based upon the Manual on Uniform Traffic Control Devices-1995 Edition-Revision 4, Part VI, as amended by the Washington state department of transportation pamphlet, "Washington State Modifications to the MUTCD." (M 24-01)

(c) Personnel that have not completed a flagger-training course may be assigned duties as flaggers only during emergencies when a sudden, generally unexpected, set of circum-

stances demands immediate attention. Such emergency assignments are temporary and last only until a certified flagger can be put into the position. For the purpose of this rule, "emergency" means an unforeseen occurrence endangering life, limb, or property.

(7)(a) Each flagger must have in their possession either a valid Washington traffic control flagger card or a valid flagger card from a state, such as Oregon, Idaho or Montana, having flagger training reciprocity with Washington.

(b) The flagger card must show the following:

- Verification that the flagger training prescribed in subsection (6) of this section is completed;

- Date the flagger received their flagger training;

- Name of the instructor providing the flagger training;

- Name of the state that issued the flagger card;

- The card's expiration date; and

- Flagger's picture or a statement that says "valid with photo ID."

(8) When it is not possible to position work zone flaggers so they are not exposed to traffic or equipment approaching them from behind, the employer, responsible contractor and/or project owner must develop and use a method to ensure that flaggers have adequate warning of such traffic and equipment approaching from behind the flagger.

Note: The following are some nonmandatory examples of methods that may be used to adequately warn flaggers:

- Mount a mirror on the flagger's hard hat.

- Use a motion detector with an audible warning.

- Use a spotter.

- Use "jersey" barriers.

The department recognizes the importance of adequately trained flaggers and supports industry efforts to improve the quality of flagger training. However, training alone is not sufficient to comply with the statutory requirement of revising flagger safety standards to improve options available that ensure flagger safety and that flaggers have adequate visual warning of objects approaching from behind them. Likewise, the department believes that standard backup alarms, which are already required on construction equipment, do not meet the intent of the legislature on this issue.

(9)(a) The employer, responsible contractor and/or project owner must conduct an orientation that familiarizes the flagger with the job site each time the flagger is assigned to a new project or when job site conditions change significantly. The orientation must include, but is not limited to:

- The flagger's role and location on the job site;

- Motor vehicle and equipment in operation at the site;

- Job site traffic patterns;

- Communications and signals to be used between flaggers and equipment operators;

- On-foot escape route; and

- Other hazards specific to the job site.

(b) When flaggers are used on a job that will last more than one day, the employer, responsible contractor and/or project owner must keep on-site, a current site specific traffic control plan. The purpose of this plan is to help move traffic through or around the construction zone in a way that protects the safety of the traveling public, pedestrians and workers. The plan must include, but is not limited to, such items as the following when they are appropriate:

- Sign use and placement;
- Application and removal of pavement markings;
- Construction;
- Scheduling;
- Methods and devices for delineation and channelization;
- Placement and maintenance of devices;
- Placement of flaggers;
- Roadway lighting;
- Traffic regulations; and
- Surveillance and inspection.

(10) For all flagging operations a three (3) sign advance warning sequence is required on all roadways with a speed limit below 45 mph. A four (4) sign advance warning sequence is required on all roadways with a 45 mph or higher speed limit.

Note: The following table contains required spacing for advance warning sign placement.

Road Type	Distances	Between	Advance Warning	Signs
	A	B	C	D
Urban low speed*	200 ft.	200 ft.	200 ft.	N/A
Urban high speed*	350 ft.	350 ft.	350 ft.	350 ft.
Rural	500 ft.	500 ft.	500 ft.	500 ft.
Expressway/Freeway	1,000 ft.	1,600 ft.	2,600 ft.	2,600 ft.

* Speed category to be determined by Washington state department of transportation in cooperation with local jurisdictions.

(11) To protect flaggers, employers, responsible contractors and/or project owners must ensure that:

(a) Flagger workstations are illuminated during hours of darkness by floodlights.

- In no case must floodlighting be permitted to create a disabling glare for drivers. The adequacy of floodlight placement and elimination of potential glare can best be determined by driving through and observing the floodlighted area from each direction on the main roadway after initial floodlight setup.

- Emergency situations are exempt from these illumination requirements. For the purpose of this rule, "emergency" means an unforeseen occurrence endangering life, limb, or property.

(b) Warning signs reflect the actual condition of the work zone. When not in use, warning signs must either be taken down or covered.

(c) Flaggers are not assigned other duties while engaged in flagging activities.

(d) Flaggers do not use devices (for example, cell phones, pagers, radio headphone, etc.) that may distract the vision, hearing, or attention of the flagger. Devices such as two-way radios used for communications between flaggers to direct traffic or ensure flagger safety are acceptable.

(e) Flaggers receive appropriate breaks from flagging so they can remain attentive and alert. For the purpose of this rule, "appropriate break" means a rest period of at least 10 minutes, on the employer's time, for each 4 hours of working time.

- Rest periods must be scheduled as near as possible to the midpoint of the work period.

- A flagger must not be allowed to work more than three hours without a rest period.

- Scheduled rest periods are not required where the nature of the work allows a flagger to take intermittent rest periods equivalent to 10 minutes for each 4 hours worked.

[Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050, 2000 c 239, and chapter 34.05 RCW. 01-04-015, § 296-155-305, filed 1/26/01, effective 2/28/01. Statutory Authority: Chapter 49.17 RCW. 93-19-142 (Order 93-04), § 296-155-305, filed 9/22/93, effective 11/1/93; 93-01-067 (Order 92-15), § 296-155-305, filed 12/11/92, effective 1/15/93; 89-11-035 (Order 89-03), § 296-155-305, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-305, filed 1/21/86; Order 76-6, § 296-155-305, filed 3/1/76; Order 74-26, § 296-155-305, filed 5/7/74, effective 6/6/74.]

WAC 296-155-407 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 296-800 WAC, chapter 296-24 WAC, Part I and WAC 296-800-160. 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, 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) 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: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-155-407, filed 5/9/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-155-407, filed 1/18/95, effective 3/1/95. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-407, filed 1/21/86.]

WAC 296-155-525 Cranes and derricks. (1) Definitions applicable to this part:

Accessory - a secondary part or assembly of parts which contributes to the overall function and usefulness of a machine.

Administrative or regulatory authority - a governmental agency, or the employer in the absence of governmental jurisdiction.

Angle indicator (boom) - an accessory which measures the angle of the boom to the horizontal.

Appointed - assigned specific responsibilities by the employer or the employer's representative.

Authorized person - means a person approved or assigned by the employer to perform a specific type of duty or duties or be at a specific location or locations at the workplace.

Auxiliary hoist - a secondary hoist rope system used either in conjunction with, or independently of, the main hoist system.

Axis of rotation - the vertical axis around which the crane superstructure rotates.

Axle - the shaft or spindle with which or about which a wheel rotates. On wheel-mounted cranes it refers to a type of axle assembly including housings, gearing, differential, bearings, and mounting appurtenances.

Axle (bogie) - two or more axles mounted in tandem in a frame so as to divide the load between the axles and permit vertical oscillation of the wheels.

Ballast - weight used to supplement the weight of the machine in providing stability for lifting working loads (the term **ballast** is normally associated with locomotive cranes).

Base, anchor bolt - a crane base that is bolted to a footing.

Base, expendable - for static-mounting cranes, a style of bottom mast section or member that is cast into a concrete footing block; all or part of this component is lost to future installations.

Base, fixed - a crane base that does not travel. It may be expendable, knee braced, or anchor bolted.

Base (mounting) - the traveling base on which the rotating superstructure of a locomotive or crawler crane is mounted.

Base, tower crane - the lowermost supporting component of the crane.

Base, travel - a crane base that is a ballasted platform mounted on trucks that ride along rails.

Boom (crane) - a member hinged at the rotating superstructure and used for supporting the existing tackle.

Boom angle - the angle above or below horizontal of the longitudinal axis of the base boom section.

Boom hoist mechanism - means for supporting the boom and controlling the boom angle.

Boom point - the outer extremity of the crane boom, containing the hoist sheave assembly.

Boom point sheave assembly - an assembly of sheaves and pin built as an integral part of the boom point.

Boom stop - a device used to limit the angle of the boom at the highest recommended position.

Brake - a device used for retarding or stopping motion.

Brace, tower - a structural attachment placed between a crane tower and an adjacent structure to pass loads to the adjacent structure and permit the crane to be erected to greater than free standing height.

Buffer - an energy absorbing device for reducing impact when a moving crane or trolley reaches the end of its permitted travel.

Cab - a housing which covers the rotating superstructure machinery, or the operator's or driver's station.

Climbing frame - a frame used with climbing cranes to transmit operational and climbing reactions to the host building frame.

Climbing ladder - a steel member with crossbars (used in parts) suspended from a climbing frame and used as jacking support points when some cranes climb.

Clutch - a means for engagement or disengagement of power.

Commercial truck vehicle - a commercial motor vehicle designed primarily for the transportation of property in connection with business and industry.

Counterweight - weight used to supplement the weight of the machine in providing stability for lifting working loads.

Counterweight jib - a horizontal member of a crane on which the counterweights and usually the hoisting machinery are mounted.

Crane carrier - the undercarriage of a wheel-mounted crane specifically designed for transporting the rotating crane superstructure. It may or may not provide its own travel mechanism. It is distinguished from a commercial truck vehicle in that it is not designed to transport personnel, materials, or equipment other than the crane-rotating superstructure.

Cross-over points - in multiple layer spooling of rope on a drum, those points of rope contact where the rope crosses the preceding rope layer.

Designated - selected or assigned by the employer or the employer's representative as being competent to perform specific duties.

Drum - the cylindrical member around which a rope is wound for lifting and lowering the load or boom.

Dynamic (loading) - loads introduced into the machine or its components due to accelerating or decelerating forces.

Flange point - a point of contact between rope and drum flange where the rope changes layers.

Free standing height - that height of a crane which is supported by the tower (mast) alone without assistance from braces, guys, or other means.

Gage, track - the horizontal distance between two rails measured perpendicular to the direction of travel.

Gantry (A-frame) - a structural frame, extending above the superstructure, to which the boom support ropes are reeved.

High strength (traction) bolts - high strength tensile bolts used in the assembly of crane sections. The bolts are installed in tension by torquing or other means at a level greater than that produced by in- or out-of-service loads for the purpose of reducing the likelihood of bolt fatigue failure.

Hoist mechanism - a hoist drum and rope reeving system used for lifting and lowering loads.

Jib - 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 in the vertical plane of the boom.

Jib backstop - a device which will restrain the jib from turning over backward.

Job site - work area defined by the construction contract.

Limiting device - a mechanical device which is operated by some part of a power driven machine or equipment to control loads or motions of the machine or equipment.

Load (working) - the external load in pounds (kilograms) applied to the crane, including the weight of load-attaching equipment such as lower load block, shackles, and slings.

Load block, lower - the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended by the hoisting ropes.

Load block, upper - the assembly of shackle, swivel, sheaves, pins, and frame suspended from the boom point.

Load ratings - crane ratings in pounds (kilograms) established by the manufacturer.

Mast (boom) - a frame hinged at or near the boom hinge for use in connection with supporting a boom. The head of the mast is usually supported and raised or lowered by the boom hoist ropes.

Mast (jib) - a frame hinged at or near the boom point for use in connection with supporting a jib.

Normal operating conditions.

Cab- or station-operated cranes - conditions during which a crane is performing functions within the manufacturer's operating recommendations. Under these conditions, the operator is at the operating control devices on the crane, and no other persons except those appointed are to be on the crane.

Ground- or floor-operated cranes - conditions during which a crane is performing functions within the manufacturer's operating recommendations. Under these conditions, the operator is at the operating control devices that are mounted to the crane but operated with the operator off the crane, and no other persons except those appointed are to be on the crane.

Remote-operated cranes - conditions during which a crane is performing functions within the manufacturer's operating recommendations. Under these conditions, the operator is at the operating control devices that are mounted to any part of the crane, and no other persons except those appointed are to be on the crane.

Out-of-service - the condition of a crane when unloaded, without power and with the controls unattended and prepared to endure winds above the in-service level.

Outriggers - extendable or fixed members attached to the mounting base, which rest on supports at the outer ends used to support the crane.

Pawl (dog) - a device for positively holding a member against motion in one or more directions.

Payload - that load or loads being transported by the commercial truck chassis from place to place.

Pendant - a rope or strand of specified length with fixed end connections.

Pitch diameter - the diameter of a sheave or rope drum measured at the center line of the rope.

Power-controlled lowering - a system or device in the power train, other than the load hoist brake, which can control the lowering rate of speed of the load hoist mechanism.

Qualified person - a person who, by possession of a recognized degree or certificate of 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 and work.

Radius (load) - the horizontal distance from a projection of the axis of rotation to the base of the crane, before loading, to the center of the vertical hoist line or tackle with load applied.

Rail clamp - a tong-like metal device mounted on a locomotive crane car, which can be connected to the track.

Reeving - a rope system in which the rope travels around drums and sheaves.

Remote control station - a location, not on the crane, from which the operator can control all the crane movements.

Repetitive pickup point - when operating on a short cycle operation, the rope being used on a single layer and being spooled repetitively over a short portion of the drum.

Rope - refers to wire rope unless otherwise specified.

Rotation resistant rope - a wire rope consisting of an inner layer of strand laid in one direction covered by a layer of strand laid in the opposite direction. This has the effect of counteracting torque by reducing the tendency of the finished rope to rotate.

Running rope - a rope which travels around sheaves or drums.

Shall - this word indicates that the rule is mandatory and must be followed.

Service, light - service that involves irregular operation with loads generally about one-half or less of the rated load; a service crane at a storage yard or building site would be an example.

Service, normal - service that involves operating occasionally at rated load but normally at less than eighty-five percent of the rated load and not more than ten lift cycles per hour except for isolated instances; a crane used for concrete placement at a building site would be an example.

Service, heavy - service that involves operating at eighty-five percent to one hundred percent of the rated load or in excess of ten lift cycles per hour as a regular specified procedure; some cranes operating at material yards or in industrial applications may fall into this category.

Sheave - a grooved wheel or pulley used with a rope to change the direction and point of application of a pulling force.

Should - this word indicates that the rule is a recommendation, the advisability of which depends on the facts in each situation.

Side loading - a load applied to an angle to the vertical plane of the boom.

Stabilizer - stabilizers are extendable or fixed members attached to the mounting base to increase the stability of the crane, but which may not have the capability of relieving all of the weight from wheels or tracks.

Standby crane - a crane which is not in regular service but which is used occasionally or intermittently as required.

Standing (guy) rope - a supporting rope which maintains a constant distance between the points of attachment to the two components connected by the rope.

Structural competence - the ability of the machine and its components to withstand the stresses imposed by applied loads.

Superstructure - the rotating upper frame structure of the machine and the operating machinery mounted thereon.

Swing - rotation of the superstructure for movement of loads in a horizontal direction about the axis of rotation.

Swing mechanism - the machinery involved in providing rotation of the superstructure.

Swivel - a load carrying member with thrust bearings to permit rotation under load in a plane perpendicular to the direction of the load.

Swiveling - the rotation of the load attachment portion (hook or shackle) of a load block (lower) or hook assembly about its axis of suspension in relation to the load line(s).

Tackle - an assembly of ropes and sheaves arranged for lifting, lowering, or pulling.

Telescoping boom - consists of a base boom from which one or more boom sections are telescoped for additional length.

Telescoping (tower crane) - a process whereby the height of a traveling or fixed base crane is increased typically by raising the inner tower and then adding sections at the top of the outer tower; there are also cranes that are telescoped by adding to the inner tower from below.

Tower (mast) - a vertical structural frame consisting of columns and bracing capable of supporting an upperstructure with its working and dynamic loads and transmitting them to the supporting surface or structure.

Traction (high strength) bolts - see high strength bolts.

Transit - the moving or transporting of a crane from one job site to another.

Travel - the function of the machine moving under its own power from one location to another on a job site.

Trolley - the device that travels along the load jib and contains the upper load block.

Two-blocking - the condition in which the lower load block or hook assembly comes in contact with the upper load block or boom point sheave assembly.

Weather vaning - wind induced rotation of a crane upperstructure, when out-of-service, to expose minimal surface area to the wind.

Wedge - a tapered wood or steel device used to provide stability to cranes during use as a climber. When the wedges are tightened against the four main legs of the tower, they convert overturning moments into horizontal forces to be resisted by the floor framing or slab.

Wheel base - the distance between centers of front and rear axles. For a multiple axle assembly the axle center for wheel base measurement is taken as the midpoint of the assembly.

Whipline (runner or auxiliary) - a secondary rope system usually of lighter load capacity than that provided by the main rope system.

Winch head - a power driven spool for handling of loads by means of friction between fiber or wire rope and the spool.

(2) General requirements.

(a) The employer shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. Where manufacturer's specifications are not available the limitations assigned to the equipment shall be based on the determinations of a qualified engineer, competent in this field and such determinations will be appropriately documented and recorded. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.

(b) Rated load capacities, and recommended operating speeds, and special hazard warnings, or instruction, shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while at the control station.

(c) Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals shall be posted at the job site.

(d) The employer shall designate a competent person who shall inspect all machinery and equipment prior to each use, and periodically during use to make sure it is in safe operating condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use.

(e) A thorough, annual inspection of the hoisting machinery shall be made by a competent person, or by a government or private agency recognized by the department. The employer shall maintain a permanent record of the dates and results of all inspections for each hoisting machine and piece of equipment.

(f) A tag line or guide rope shall be used on all loads that swing freely. Guide ropes or tag lines shall be held by experienced persons.

(g) Care shall be taken to guard against injury to workers, or damage to scaffolds or buildings, from swinging loads.

(h) The operator shall avoid carrying loads over people.

(i) When work is stopped or when the derrick is not in operation, the boom shall be lowered to a horizontal position or tied in place to prevent it whipping with the wind or other external force.

(j) Only authorized personnel shall make sling hitches on loads.

(k) Workers shall not be allowed to ride on loads handled by derricks.

(l) Operators shall observe signals only from duly authorized persons. Under no circumstances shall a load be moved until the signal is received from authorized personnel.

(m) Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or other moving parts or equipment shall be guarded if such parts are exposed to contact by employees, or otherwise cre-

ate a hazard. Guarding shall meet the requirements of chapter 296-24 WAC.

(n) A minimum distance of thirty inches clearance shall be maintained between the swing radius of the greatest extension of the crane superstructure or counterweights and a stationary object, including the crane itself, while the crane is in operation. When this clearance cannot be maintained, suitable barricades or safeguards shall be used to isolate the pinch point hazard area.

(o) All exhaust pipes shall be guarded or insulated where contact by employees, in the performance of normal duties, is possible.

(3) Additional requirements.

(a) Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres. (See chapter 296-62 WAC, the general occupational health standards and other applicable standards.)

(b) All cab glazing shall be safety glazing material. Windows shall be provided in the front and on both sides of the cab or operator's compartment with visibility forward and to either side. Visibility forward shall include a vertical range adequate to cover the boom point at all times. The front window may have a section which can be readily removed or held open, if desired. If the section is of the type held in the open position, it shall be secured to prevent inadvertent closure. A windshield wiper should be provided on the front window.

(c)(i) Where necessary for rigging or service requirements, a ladder or steps shall be provided to give access to a cab roof.

(ii) On cranes, guardrails, handholds and steps shall be provided for easy access to the car and cab in accordance with chapter 296-155 WAC, Part C-1 and Part J.

(iii) Platforms and walkways shall have anti-skid surfaces.

(d) Fuel tank filler pipe shall be located in such a position, or protected in such manner, as to not allow spill or overflow to run onto the engine, exhaust, or electrical equipment of any machine being fueled.

(i) An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(ii) All fuels shall be transported, stored, and handled to meet the rules of Part D of this chapter. When fuel is transported by vehicles on public highways, department of transportation rules concerning such vehicular transportation are considered applicable.

(e) Except where 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 or machinery, have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following:

(i) For lines rated 50 kV. or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet;

(ii) For lines rated over 50 kV., minimum clearance between the lines and any part of the crane 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;

(iii) In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kV., and 10 feet for voltages over 50 kV. up to and including 345 kV., and 16 feet for voltages up to and including 750 kV.;

(iv) A person shall be designated to observe clearance of the equipment and give timely warning to insure that the required separation is maintained for all operations where it is difficult for the operator to maintain the desired clearance by visual means;

(v) Cage-type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation;

(vi) 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 and it has been visibly grounded;

(vii) Prior to work near transmitter tower where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be deenergized or tests shall be made to determine if electrical charge is induced on the crane.

(f) The following precautions shall be taken when necessary to dissipate induced voltage:

(i) The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and

(ii) Ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.

(iii) Combustible and flammable materials shall be removed from the immediate area prior to operations.

(g) No modifications or additions which affect the capacity or safe operation of the equipment shall be made by the employer without the manufacturer's or a qualified engineer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

(h) The employer shall comply with Power Crane and Shovel Association, Mobile Hydraulic Crane Standard No. 2.

(i) Sideboom cranes mounted on wheel or crawler tractors shall meet the requirements of SAE J743a-1964.

(4) Crawler, locomotive, and truck cranes.

(a) All jibs shall have positive stops to prevent their movement of more than 5° above the straight line of the jib and boom on conventional type crane booms. The use of

cable type belly slings does not constitute compliance with this standard.

(b) All crawler, truck or locomotive cranes in use shall meet the applicable requirements for design, inspection, construction, testing, maintenance and operation as prescribed in the ANSI B30.5-1989, Safety Code for Crawler, Locomotive and Truck Cranes.

(5) Tower cranes.

(a) Tower cranes shall be erected, jumped and dismantled under the immediate supervision of a competent person, designated by the employer.

(b) Tower cranes shall be erected, maintained and used in accordance with the manufacturer's specifications, recommendations and procedures. All modifications shall be approved by the manufacturer and engineered by a professional engineer. The safety factors shall not be reduced by any modifications. The crane plates and charts shall be changed to reflect any modifications made.

(c) A professional engineer shall certify that the crane foundations and underlying soil are adequate support for the tower crane with its maximum overturning movement.

(d) Tower cranes shall be positioned whereby they can swing 360° without either the counterweight or jib striking any building, structure or other object, except:

(i) If the crane can strike an object or another crane, suitable limit switches shall be installed which will prohibit contact with such objects, or;

(ii) Direct voice communications shall be established between any operator of the tower crane(s) involved and a signalperson so stationed where the boom and/or counterweight movement, and the object with which it may contact can be observed so that the operator(s) can be warned of imminent danger.

(iii) A secondary means of positive communications shall be established as a back-up for possible direct voice communication failure.

(iv) Radio communication systems without tone coded squelch are prohibited. Citizens band radios shall not be used as a means of communications for tower cranes.

(e) Prior to installing a climbing tower crane within an existing building or new construction, a structural engineer shall certify that the building is designed to withstand the torque and floor loading created by the crane to be installed.

(f) Tower cranes erected on a new foundation shall be tested in accordance with ANSI B30.3-1990 Chapter 3-1.

(i) The test shall consist of suspending a load of not less than 110% of the rated capacity for 15 minutes. The load shall be suspended from the furthest point of the length of boom (jib) to be used. The results of this test shall be within the manufacturer's recommendations and/or specifications.

(ii) A record of each test shall be made and signed by the person responsible for conducting the test. Such records shall be maintained on the construction site for the duration of the construction work for which it was erected and subsequently made a part of the firm's permanent equipment records. Records shall be made available to authorized representatives of the department, upon request.

(g) A capacity chart shall be furnished by each crane manufacturer which shall include a full and complete range

of crane load ratings at all stated operating radii for each allowable speed and each recommended counterweight load.

(i) Such chart shall be posted in the operator's cab or at the remote control stand in use. In lieu of the chart at the remote control stand, a minimum of two weight capacity signs shall be affixed to the jib or boom.

(ii) The chart shall be visible and readable to the operator while at the normal operating position.

(h) Operating controls shall be properly marked to indicate the function of the controls in each position.

(i) An operating and maintenance manual written in the English language shall be provided with each tower crane.

(j) Limit switches shall be installed and shall be kept properly adjusted. They shall be protected or isolated in a manner which will prevent unauthorized tampering. Limit switches shall provide the following functions:

(i) Safely limit the travel of the trolley to prevent it from hitting the outer end of the jib.

(ii) Limit the upward travel of the load block to prevent two-blocking.

(iii) Lower over travel limiting devices shall be provided for all load hoists where the hook area is not visible to the operator.

(iv) Limit the load being lifted in a manner whereby no more than 110% of the maximum rated load can be lifted or moved.

(k) The crane shall not be used to pull vehicles of any type, remove piling, loosen form work, pull away loads which are attached to the ground or walls, or for any operation other than the proper handling of freely suspended loads.

(l) When the operator may be exposed to the hazard of falling objects, the tower crane cab and/or remote control station shall have adequate overhead protection.

(m) The operator shall be protected from the weather. If enclosed cabs are provided they shall provide clear visibility in all directions and glass shall be approved safety glass or the equivalent.

(n) An approved and safe means shall be provided for access to operator's cab and machinery platform.

(o) When necessary for inspection or maintenance purposes, ladders, walkways with railing or other devices shall be provided.

(p) Each tower crane shall be provided with a slewing brake capable of preventing the jib or boom from rotating in either direction and stopping the rotation of the jib or boom while loaded, when desired. Such brake shall have a holding device which, when set, will hold the jib or boom in a fixed location without additional attention of the operator. When the crane is out of operation, the jib or boom shall be pointed downwind and the slewing brake shall be released so as to permit the jib or boom to weathervane, providing the jib or boom has a clear 360 degree rotation. Where a 360 degree rotation is not provided, the jib or boom shall be pointed downwind from the prevailing wind and the slewing brake set.

(q) Each tower crane shall be provided with a braking system on the trolley capable of stopping and holding the trolley in any desired position while carrying a maximum load. This brake shall be capable of being locked in a fixed location without additional attention of the operator. An auto-

matic brake or device shall be installed which will immediately stop and lock the trolley in position in the event of a breakage of the trolley rope.

(r) All electrical equipment shall be properly grounded and protection shall be provided against lightning.

(s) When the operator is actually operating the crane, the operator shall remain in a stationary position.

(t) All crane brakes shall automatically set in event of power failure. Swing brakes shall also function in this manner or be capable of being set manually.

(u) Climbing jack systems used for raising a tower crane shall be equipped with over-pressure relief valves, direct-reading pressure gauges, and pilot-operated hydraulic check valves installed in a manner which will prevent jack from retracting should a hydraulic line or fitting rupture or fail.

(v) During periods of high winds or weather affecting visibility, i.e., fog, etc., only loads shall be handled that are consistent with good safety practices. Good safety practices shall be mutually agreed upon by the operator and the person in charge of the construction job, with due consideration given to manufacturer's specifications and recommendations.

(w) Counterweights shall be securely fastened in place and shall not exceed the weight as recommended by the manufacturer for the length of jib being used. However, an amount of counterweight as recommended by the manufacturer shall be used.

(x) Tower cranes shall be inspected and maintained in accordance with the manufacturer's recommendations or more frequently if there is reason to suspect a possible defect or weakening of any portion of the structure or equipment.

(y) Guy wires, wedges, braces or other supports shall be inspected at the beginning and at midpoint of each working shift to ascertain that they are functioning as intended.

(6) Additional tower crane requirements.

(a) An approved method shall be instituted for transmitting signals to the operator. Standard hand signals for crane operations shall be used, whenever possible; however, if conditions are such that hand signals are ineffective, radio-controlled or electric-whistle signal or two-way voice communication shall be used. (See WAC 296-155-525 (4)(d).)

(b) Tower cranes shall not be erected or raised when the wind velocity at the worksite exceeds 20 m.p.h. or that specified by the manufacturer.

(c) Tower crane operators shall be trained and experienced in tower crane operations; however, for gaining experience, persons may operate the tower crane if under the immediate supervision of an experienced operator.

(d) Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm.

(e) Employees required to perform duties on the horizontal boom of hammerhead tower cranes shall be protected against falling by guardrails or by a full body harness and lanyards attached to crane or to lifelines in conformance with Part C-1 of this chapter.

(f) Buffers shall be provided at both ends of travel of the trolley.

(g) Cranes mounted on rail tracks shall be equipped with limit switches limiting the travel of the crane on the track and stops or buffers at each end of the tracks.

(h) All hammerhead tower cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed by the manufacturer.

(i) Access ladders inside the telescoping sections of tower cranes are exempt from those sections of the safety standards pertaining to cleat length and cleat spacing, but shall conform to manufacturer's recommendations and specifications.

(7) Overhead and gantry cranes.

(a) 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.

(b) Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.

(c) Except for floor-operated cranes, a gong or other effective audible warning signal shall be provided for each crane equipped with a power traveling mechanism.

(d) All overhead and gantry cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed in ANSI B30.2.0-1990, Safety Code for Overhead and Gantry Cranes.

(8) Derricks. All derricks in use shall meet the applicable requirements for design, construction, installation, inspection, testing, maintenance, and operation as prescribed in American National Standard Institute B30.6-1990, Safety Code for Derricks.

(9) Floating cranes and derricks.

(a) Mobile cranes mounted on barges.

(i) When a mobile crane is mounted on a barge, the rated load of the crane shall not exceed the original capacity specified by the manufacturer.

(ii) A load rating chart, with clearly legible letters and figures, shall be provided with each crane, and securely fixed at a location easily visible to the operator.

(iii) When load ratings are reduced to stay within the limits for list of the barge with a crane mounted on it, a new load rating chart shall be provided.

(iv) Mobile cranes on barges shall be positively secured.

(b) Permanently mounted floating cranes and derricks.

(i) When cranes and derricks are permanently installed on a barge, the capacity and limitations of use shall be based on competent design criteria.

(ii) A load rating chart with clearly legible letters and figures shall be provided and securely fixed at a location easily visible to the operator.

(iii) Floating cranes and floating derricks in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, and operation as prescribed by the manufacturer.

(c) Protection of employees working on barges. The employer shall comply with the applicable requirements for protection of employees as specified in WAC 296-155-630.

(10) Mobile cranes and excavation machines.

(a) In all power driven shovel operations the person in charge shall issue instructions necessary to prevent accidents,

to detect and correct unsafe acts and dangerous conditions, and to enforce all safety rules and regulations.

The person in charge shall also issue instructions on the proper method of using tools and handling material.

(b) Where the ground is soft or uneven, timbering and planking shall be used to provide firm foundation and distribute the load.

(c) In case of a breakdown, the shovel shall be moved away from the foot of the slope before repairs are made.

(d) All persons shall keep away from the range of the shovel's swing and shall not be permitted to stand back of the shovel or in line with the swing of the dipper during operation or moving of shovel.

(e) Unauthorized persons shall not be allowed on the shovel during operations, and the operator shall not converse with other persons while operating machine.

(f) The shovel dipper shall rest on the ground or on blocking during shut down periods.

(g) Shovels shall be inspected daily and all defects promptly repaired.

(h) All rubber tired mobile cranes shall be equipped with outriggers and sufficient blocking to properly stabilize crane while operating.

(i) Rubber tired mobile cranes shall be equipped with rear view mirrors.

(j) Positive boom stops shall be provided on all mobile cranes of the wheel and crawler type.

(k) Length of a crane boom and amount of counterweight shall not exceed manufacturer's rated capacity for equipment involved; except on isolated cases where permission is granted by the department.

(l) On all cranes where wedge beackets are used as terminal connections, the proper size wedge shall be used.

(m) On all mobile cranes, the hoist and boom drums shall be provided with a positive operated pawl or dog which shall be used in addition to the brake to hold the load and boom when they are suspended. Counterweight operated dogs are prohibited.

(n) Oiling and greasing shall be done under safe conditions with machine at rest, except when motion of machine is necessary.

(o) All steps, running boards, and boom ladder shall be of substantial construction and in good repair at all times.

(p) Operators shall not leave the cab while master clutch is engaged.

(q) Fire extinguishers shall be readily accessible and within reach of operator at all times.

(r) All shovel and crane cabs shall be kept clean and free of excess oil and grease on floor and machinery. Oily and greasy rags shall be disposed of immediately after use and not allowed to accumulate.

(s) Tools shall not be left on the cab floor. Spare cans of oil or fuel, and spare parts, shall not be stored in cabs, except in approved racks provided for that purpose.

(t) Mats or planking shall be used in moving shovels or cranes over soft or uneven ground.

(u) Cranes or shovels setting on steep grades shall be securely blocked or secured with a tail hold.

(v) Smoking shall be prohibited while fueling or oiling machines.

(w) Gasoline powered motors shall be stopped during refueling.

(x) Handling of movable feed line (bologna) shall be accomplished with insulated hooks and lineman's rubber gloves.

(y) Where cables cross roads they shall be elevated or placed in a trench.

(z) On all power shovels, including back-hoe types, of one-half cubic yard capacity or over, and on all dragline cranes or all-purpose cranes of the crawler or wheel type, two persons shall constitute the minimum working crew. It is mandatory that one be a qualified operator of the equipment in use. The job title of the other crew member may be oiler, rigger, signal person, or a laborer. The primary purpose of the second crew member is to signal the operator when the operator's vision is impaired or obscured and to be on-hand in case of emergency.

(i) Second-crew persons shall be properly trained in their second-person required skills.

(ii) The second crew member shall be close enough to the machine in operation to be aware of any emergency, if one arises, and to assure the machine is operated with necessary and appropriate signals to the operator.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-155-525, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 95-17-036, § 296-155-525, filed 8/9/95, effective 9/25/95. Statutory Authority: Chapter 49.17 RCW. 91-03-044 (Order 90-18), § 296-155-525, filed 1/10/91, effective 2/12/91; Order 76-29, § 296-155-525, filed 9/30/76; Order 74-26, § 296-155-525, filed 5/7/74, effective 6/6/74.]

WAC 296-155-575 Helicopters and helicopter cranes. (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 chinstraps.

(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 100 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. Hand signals shall be as shown in Figure L-1.

(15) Approach distance. No unauthorized person shall be allowed to approach within 50 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) Refueling operations.

(a) Under no circumstances shall the refueling of any type helicopter with either aviation gasoline or Jet B (turbine-kerosene) type fuel be permitted while the engines are running.

(b) No unauthorized persons shall be allowed within fifty feet of the refueling operation or fueling equipment.

(c) 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.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(d) All fueling personnel shall be thoroughly trained in the refueling operation and in the use of available fire extinguishing equipment.

(e) There shall be no smoking, open flames, exposed flame heaters, flare pots or open flame lights for spark producing agents within fifty feet of the refueling area or fueling equipment. All entrances to the refueling area shall be posted with "NO SMOKING" signs.

(f) Due to the numerous causes of static electricity, it should 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.

(i) Conductive hose shall not be used to accomplish the bonding.

(ii) All grounding and bonding connections shall be electrically and mechanically firm, to clean unpainted metal parts.

(g) To control spills:

(i) Fuel shall be pumped either by hand or power.

(ii) Pouring or gravity flow shall not be permitted.

(iii) Selfclosing nozzles shall not be dragged on the ground.

(h) 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.

(i) When ambient temperatures have been in the one hundred degree F 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.

(21) Hook on persons shall wear contrasting colored hard hats, with chinstraps, and high visibility vests or outer garments to enable the helicopter operator to readily identify their locations.

(22) Riding the load or hook of a helicopter is prohibited except in the case of emergency and then only with the proper safety gear.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-155-575, filed 8/8/01, effective 9/1/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-575, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-575, filed 1/21/86; Order 76-28, § 296-155-575, filed 9/28/76; Order 74-26, § 296-155-575, filed 5/7/74, effective 6/6/74.]

WAC 296-155-625 Site clearing. (1) General.

(a) The word "clearing" means the removal of trees, stumps, logs, brush, debris and rubbish from the surface of the ground in preparation of a site for construction work of any kind. The removal of trees and logs shall be in accordance with the requirements of chapter 296-54 WAC.

(b) All equipment and tools such as axes, sledges, wedges, saws, springboards, etc., shall be maintained in a safe condition and guarded with standard safeguards.

(c) Fallers shall give warning to brushing crews, buckers and other persons in the vicinity where a tree is being felled; taking notice that such persons are not only out of the reach of tree, but also out of danger of possible sidewinders, snags or other trees which may be knocked over by the tree being felled.

(d) Trees must not be felled toward and within range of a traveled road or operational railroad unless a flagger is used to stop all approaching persons, vehicles, or railroad equipment. Flaggers and flagging activities at the site must comply with the requirements of WAC 296-155-305.

(e) Clearing crews shall not be placed immediately below other crews working on hillsides where there is a possible danger of skidding or rolling trees, moving earth or rock.

(f) Pioneer roads on clearing operations shall be constructed to safely accommodate all equipment moved over road.

(g) Hazardous standing and down timber, rocks, etc., shall be moved from upper sides of cuts on side hill operations.

(h) Care shall be exercised in the use of oil for burning brush or timber.

(i) Employees engaged in site clearing shall be protected from hazards of irritant and toxic plants and suitably instructed in the first-aid treatment available.

(j) All equipment used in site clearing operations shall be equipped with rollover guards meeting the requirements of this chapter. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the following requirements:

(i) The overhead covering on this canopy structure shall be of not less than 1/8-inch steel plate or 1/4-inch woven wire mesh with openings no greater than 1 inch, or equivalent.

(ii) The opening in the rear of the canopy structure shall be covered with not less than 1/4-inch woven wire mesh with openings no greater than 1 inch.

(iii) Use of 1/2 inch thick plastic sheets or other thicknesses of plastic panels derived from polycarbonate, acrylic, cellulose acetate butyrate which provides equivalent or better protection against particular hazards involved is acceptable in lieu of 1 or 1 3/4 inch open mesh material.

(A) All panels shall be installed in a manner which can withstand the initial impact, and maintain the protective barrier integrity; and

(B) All panels must be labeled or marked to distinguish between acceptable and inferior materials.

(k) In addition to observance of the general safety and health standards;

(i) The employer shall assume the responsibility of work assignment so that no worker shall be required to work in a

position or location so isolated as to not be within ordinary calling distance of another person who can render assistance in case of emergency. In any operation where cutting, felling trees, loading, or a combination of these duties is carried on, there shall be a minimum crew of two persons who shall work as a team and shall be in visual or voice contact with one another. If one worker at these operations is required to be left alone for a period of time, the worker shall be contacted by another person at reasonable intervals not to exceed fifteen minutes unless such practice can be established to be impractical.

(ii) This does not apply to operators of motor vehicles, watchpersons or certain other jobs which, by their nature, are singular worker assignments. However, a definite procedure for checking the welfare of all workers during working hours shall be instituted and all workers so advised.

[Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050, 2000 c 239, and chapter 34.05 RCW. 01-04-015, § 296-155-625, filed 1/26/01, effective 2/28/01. Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-625, filed 7/20/94, effective 9/20/94; 91-03-044 (Order 90-18), § 296-155-625, filed 1/10/91, effective 2/12/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-625, filed 1/21/86; Order 74-26, § 296-155-625, filed 5/7/74, effective 6/6/74.]

WAC 296-155-730 Tunnels and shafts. (1) Scope and application.

(a) This section applies to the construction of underground tunnels, shafts, chambers, and passageways. This section also applies to cut-and-cover excavations which are both physically connected to ongoing underground construction operations within the scope of this section, and covered in such a manner as to create conditions characteristic of underground construction.

(b) This section does not apply to excavation and trenching operations covered by Part N of this chapter, such as foundation operations for above-ground structures that are not physically connected to underground construction operations, and surface excavation.

(c) The employer shall comply with the requirements of this part and chapter in addition to applicable requirements of chapter 296-36 WAC, Safety standards—Compressed air work.

(2) Access and egress.

(a) Each operation shall have a check-in/check-out system that will provide positive identification of every employee underground. An accurate record of identification and location of the employees shall be kept on the surface. This procedure is not required when the construction of underground facilities designed for human occupancy has been sufficiently completed so that the permanent environmental controls are effective, and when the remaining construction activity will not cause any environmental hazard, or structural failure within the facilities.

(b) The employer shall provide and maintain safe means of access and egress to all work stations.

(c) The employer shall provide access and egress in such a manner that employees are protected from being struck by excavators, haulage machines, trains, and other mobile equipment.

(d) The employer shall control access to all openings to prevent unauthorized entry underground. Unused chutes, manways, or other openings shall be tightly covered, bulk-headed, or fenced off, and shall be posted with warning signs indicating "keep out" or similar language. Completed or unused sections of the underground facility shall be barricaded.

(3) Safety instruction. All employees shall be instructed in the recognition and avoidance of hazards associated with underground construction activities including, where appropriate, the following subjects:

- (a) Air monitoring;
- (b) Ventilation;
- (c) Confined space entry procedures;
- (d) Permit-required confined space entry procedures;
- (e) Illumination;
- (f) Communications;
- (g) Flood control;
- (h) Mechanical equipment;
- (i) Personal protective equipment;
- (j) Explosives;
- (k) Fire prevention and protection; and
- (l) Emergency procedures, including evacuation plans and check-in/check-out systems.

(4) Notification.

(a) Oncoming shifts shall be informed of any hazardous occurrences or conditions that have affected, or might affect employee safety, including liberation of gas, equipment failures, earth or rock slides, cave-ins, floodings, fire(s), or explosions.

(b) Information specified in (a) of this subsection shall be recorded in a shift journal which shall be current prior to the end of each shift, and shall be located aboveground.

(c) Oncoming supervisory personnel shall read the notification prior to going underground, and shall signify their understanding of the contents by affixing their respective initials to the log.

(d) The hazard notification log shall be retained on the site until the completion of the project.

(e) The employer shall establish and maintain direct communications for coordination of activities with other employers whose operations at the jobsite affect or may affect the safety of employees underground.

(5) Communications.

(a) When natural unassisted voice communication is ineffective, a power-assisted means of voice communication shall be used to provide communication between the work face, the bottom of the shaft, and the surface.

(b) Two effective means of communication, at least one of which shall be voice communication, shall be provided in all shafts which are being developed or used either for personnel access or for hoisting. Additional requirements for hoist operator communication are contained in subsection (22)(c)(xv) of this section.

(c) Powered communication systems shall operate on an independent power supply, and shall be installed so that the use of or disruption of any one phone or signal location will not disrupt the operation of the system from any other location.

(d) Communication systems shall be tested upon initial entry of each shift to the underground, and as often as necessary at later times, to ensure that they are in working order.

(e) Any employee working alone underground in a hazardous location, who is both out of the range of natural unassisted voice communication and not under observation by other persons, shall be provided with an effective means of obtaining assistance in an emergency.

(6) Emergency provisions. Hoisting capability. When a shaft is used as a means of egress, the employer shall make advance arrangements for power-assisted hoisting capability to be readily available in an emergency, unless the regular hoisting means can continue to function in the event of an electrical power failure at the jobsite. Such hoisting means shall be designed so that the load hoist drum is powered in both directions of rotation and so that the brake is automatically applied upon power release or failure.

(7) Self-rescuers. The employer must provide self-rescuers certified by the National Institute for Occupational Safety and Health under 42 CFR part 84. The respirators must be immediately available to all employees at work stations in underground areas where employees might be trapped by smoke or gas. The selection, issuance, use, and care of respirators must be in accordance with the requirements of chapter 296-62 WAC, Part E.

(8) Designated person. At least one designated person shall be on duty aboveground whenever any employee is working underground. This designated person shall be responsible for securing immediate aid and keeping an accurate record of the number, identification, and location of employees who are underground in case of emergency. The designated person must not be so busy with other responsibilities that the personnel counting and identification function is encumbered.

(9) Emergency lighting. Each employee underground shall have an acceptable portable hand lamp or cap lamp in his or her work area for emergency use, unless natural light or an emergency lighting system provides adequate illumination for escape.

(10) Rescue teams.

(a) On jobsites where 25 or more employees work underground at one time, the employer shall provide (or make arrangements in advance with locally available rescue services to provide) at least two 5-person rescue teams, one on the jobsite or within one-half hour travel time from the entry point, and the other within 2 hours travel time.

(b) On jobsites where less than 25 employees work underground at one time, the employer shall provide (or make arrangements in advance with locally available rescue services to provide) at least one 5-person rescue team to be either on the jobsite or within one-half hour travel time from the entry point.

(c) Rescue team members shall be qualified in rescue procedures, the use and limitations of breathing apparatus, and the use of fire fighting equipment. Qualifications shall be reviewed not less than annually.

(d) On jobsites where flammable or noxious gases are encountered or anticipated in hazardous quantities, rescue team members shall practice donning and using pressure demand mode, self-contained breathing apparatuses monthly.

(e) The employer shall ensure that rescue teams are familiar with conditions at the jobsite.

(11) Hazardous classifications.

(a) Potentially gassy operations. Underground construction operations shall be classified as potentially gassy if either:

(i) Air monitoring discloses 10 percent or more of the lower explosive limit for methane or other flammable gases measured at 12 inches (304.8 mm) \pm 0.25 inch (6.35 mm) from the roof, face, floor, or walls in any underground work area for more than a 24-hour period; or

(ii) The history of the geographical area or geological formation indicates that 10 percent or more of the lower explosive limit for methane or other flammable gases is likely to be encountered in such underground operations.

(b) Gassy operations. Underground construction operations shall be classified as gassy if:

(i) Air monitoring discloses 10 percent or more of the lower explosive limit for methane or other flammable gases measured at 12 inches (304.8 mm) \pm 0.25 inch (6.35 mm) from the roof, face, floor, or walls in any underground work area for three consecutive days; or

(ii) There has been an ignition of methane or of other flammable gases emanating from the strata that indicates the presence of such gases; or

(iii) The underground construction operation is both connected to an underground work area which is currently classified as gassy and is also subject to a continuous course of air containing the flammable gas concentration.

(c) Declassification to potentially gassy operations. Underground construction gassy operations may be declassified to potentially gassy when air monitoring results remain under 10 percent of the lower explosive limit for methane or other flammable gases for three consecutive days.

(12) Gassy operations—Additional requirements. Only acceptable equipment, maintained in suitable condition, shall be used in gassy operations.

(a) Mobile diesel-powered equipment used in gassy operations shall be either approved in accordance with the requirements of 30 CFR Part 36 (formerly Schedule 31) by MSHA, or shall be demonstrated by the employer to be fully equivalent to such MSHA-approved equipment, and shall be operated in accordance with that part.

(b) Each entrance to a gassy operation shall be prominently posted with signs notifying all entrants of the gassy classification.

(c) Smoking shall be prohibited in all gassy operations and the employer shall be responsible for collecting all personal sources of ignition, such as matches and lighters, from all persons entering a gassy operation.

(d) A fire watch as described in chapter 296-155 WAC, Part H, shall be maintained when hot work is performed.

(e) Once an operation has met the criteria in subsection (11)(a)(i) of this section, warranting classification as gassy, all operations in the affected area, except the following, shall be discontinued until the operation either is in compliance with all of the gassy operation requirements or has been declassified in accordance with (c) of this subsection:

(i) Operations related to the control of the gas concentration;

(ii) Installation of new equipment, or conversion of existing equipment, to comply with this subsection; and

(iii) Installation of above-ground controls for reversing the air flow.

(13) Air quality and monitoring.

(a) General. Air quality limits and control requirements specified in chapter 296-62 WAC, Part H, shall apply except as modified by this subsection.

(b) The employer shall assign a competent person who shall perform all air monitoring required by this section.

(c) Where this section requires monitoring of airborne contaminants "as often as necessary," the competent person shall make a reasonable determination as to which substances to monitor and how frequently to monitor, considering at least the following factors:

(i) Location of jobsite: Proximity to fuel tanks, sewers, gas lines, old landfills, coal deposits, and swamps;

(ii) Geology: Geological studies of the jobsite, particularly involving the soil type and its permeability;

(iii) History: Presence of air contaminants in nearby jobsites, changes in levels of substances monitored on the prior shift; and

(iv) Work practices and jobsite conditions: The use of diesel engines, use of explosives, use of fuel gas, volume and flow of ventilation, visible atmospheric conditions, decompression of the atmosphere, welding, cutting and hot work, and employees' physical reactions to working underground.

(d) The employer shall provide testing and monitoring instruments which are capable of achieving compliance with the provisions of this subsection, and:

(i) Shall maintain the testing and monitoring instruments in good condition;

(ii) Shall calibrate the instruments on a frequency not to exceed 6 months.

(e) Exposure to airborne contaminants shall not exceed the levels established by chapter 296-62 WAC, Part H.

(f) Respirators shall not be substituted for environmental control measures. However, where environmental controls have not yet been developed, or when necessary by the nature of the work involved (for example, welding, sand blasting, lead burning), an employee may work for short periods of time in concentrations of airborne contaminants which exceed the limit of permissible exposure referred to in (d) of this subsection, if the employee wears a respiratory protective device certified by MSHA-NIOSH for protection against the particular hazards involved, and the selection and use of respirators complies with the provisions of chapter 296-62 WAC, Part E.

(g) Employees shall be withdrawn from areas in which there is a concentration of an airborne contaminant which exceeds the permissible exposure limit listed for that contaminant, except as modified in (t)(i) and (ii) of this subsection.

(h) The atmosphere in all underground work areas shall be tested as often as necessary to assure that the atmosphere at normal atmospheric pressure contains at least 19.5 percent oxygen and no more than 22 percent oxygen.

(i) Tests for oxygen content shall be made before tests for air contaminants.

(j) Field-type oxygen analyzers, or other suitable devices, shall be used to test for oxygen deficiency.

(k) The atmosphere in all underground work areas shall be tested quantitatively for carbon monoxide, nitrogen dioxide, hydrogen sulfide, and other toxic gases, dust, vapors, mists, and fumes as often as necessary to ensure that the permissible exposure limits prescribed in chapter 296-62 WAC, Part H, are not exceeded.

(l) The atmosphere in all underground work areas shall be tested quantitatively for methane and other flammable gases as often as necessary to determine:

(i) Whether action is to be taken under (q), (r), and (s) of this subsection; and

(ii) Whether an operation is to be classified potentially gassy or gassy under subsection (11) of this section.

(m) If diesel-engine or gasoline-engine driven ventilating fans or compressors are used, an initial test shall be made of the inlet air of the fan or compressor, with the engines operating, to ensure that the air supply is not contaminated by engine exhaust.

(n) Testing shall be performed as often as necessary to ensure that the ventilation requirements of subsection (15) of this section are met.

(o) When rapid excavation machines are used, a continuous flammable gas monitor shall be operated at the face with the sensor(s) placed as high and close to the front of the machine's cutter head as practicable.

(p) Whenever air monitoring indicates the presence of 5 ppm or more of hydrogen sulfide, a test shall be conducted in the affected underground work area(s), at least at the beginning and midpoint of each shift, until the concentration of hydrogen sulfide has been less than 5 ppm for 3 consecutive days.

(i) Whenever hydrogen sulfide is detected in an amount exceeding 10 ppm, a continuous sampling and indicating hydrogen sulfide monitor shall be used to monitor the affected work area.

(ii) Employees shall be informed when a concentration of 10 ppm hydrogen sulfide is exceeded.

(iii) The continuous sampling and indicating hydrogen sulfide monitor shall be designed, installed, and maintained to provide a visual and aural alarm when the hydrogen sulfide concentration reaches 15 ppm to signal that additional measures, such as respirator use, increased ventilation, or evacuation, might be necessary to maintain hydrogen sulfide exposure below the permissible exposure limit.

(q) When the competent person determines, on the basis of air monitoring results or other information, that air contaminants may be present in sufficient quantity to be dangerous to life, the employer shall:

(i) Prominently post a notice at all entrances to the underground jobsite to inform all entrants of the hazardous condition; and

(ii) Immediately increase sampling frequency levels to insure workers are not exposed to identified contaminants in excess of the permissible exposure limit(s); and

(iii) Ensure that all necessary precautions are taken to comply with pertinent requirements of this section, and chapter 296-62 WAC.

(r) Whenever five percent or more of the lower explosive limit for methane or other flammable gases is detected in any underground work area(s) or in the air return, steps shall be

taken to increase ventilation air volume or otherwise control the gas concentration, unless the employer is operating in accordance with the potentially gassy or gassy operation requirements. Such additional ventilation controls may be discontinued when gas concentrations are reduced below five percent of the lower explosive limit, but shall be reinstituted whenever the five percent level is exceeded.

(s) Whenever 10 percent or more of the lower explosive limit for methane or other flammable gases is detected in the vicinity of welding, cutting, or other hot work, such work shall be suspended until the concentration of such flammable gas is reduced to less than 10 percent of the lower explosive limit.

(t) Whenever 20 percent or more of the lower explosive limit for methane or other flammable gases is detected in any underground work area(s) or in the air return:

(i) All employees, except those necessary to eliminate the hazard, shall be immediately withdrawn to a safe location above ground; and

(ii) Employees who remain underground to correct or eliminate the hazard described in (t) above shall be equipped with approved, pressure demand mode, self-contained breathing apparatus, and shall have received adequate training in the proper use of that equipment.

(iii) Electrical power, except for acceptable pumping and ventilation equipment, shall be cut off to the area endangered by the flammable gas until the concentration of such gas is reduced to less than 20 percent of the lower explosive limit.

(14) Additional monitoring for potentially gassy and gassy operations. Operations which meet the criteria for potentially gassy and gassy operations set forth in subsection (13) of this section shall be subject to the additional monitoring requirements of this subsection.

(a) A test for oxygen content shall be conducted in the affected underground work areas and work areas immediately adjacent to such areas at least at the beginning and midpoint of each shift.

(b) When using rapid excavation machines, continuous automatic flammable gas monitoring equipment shall be used to monitor the air at the heading, on the rib, and in the return air duct. The continuous monitor shall signal the heading, and shut down electric power in the affected underground work area, except for acceptable pumping and ventilation equipment, when 20 percent or more of the lower explosive limit for methane or other flammable gases is encountered.

(i) A manual flammable gas monitor shall be used as needed, but at least at the beginning and midpoint of each shift, to ensure that the limits prescribed in subsections (11) and (13) of this section are not exceeded. In addition, a manual electrical shut down control shall be provided near the heading.

(ii) Local gas tests shall be made prior to and continuously during any welding, cutting, or other hot work.

(iii) In underground operations driven by drill-and-blast methods, the air in the affected area shall be tested for flammable gas prior to re-entry after blasting, and continuously when employees are working underground.

(c) Recordkeeping. A record of all air quality tests shall be maintained above ground at the worksite and be made available to the director or his/her representatives upon

request. The record shall include the location, date, time, substance and amount monitored. Records of exposures to toxic substances shall be retained in accordance with Part B, chapter 296-62 WAC. All other air quality test records shall be retained until completion of the project.

(15) Ventilation.

(a)(i) Fresh air shall be supplied to all underground work areas in sufficient quantities to prevent dangerous or harmful accumulation of dust, fumes, mists, vapors, or gases.

(ii) Mechanical ventilation shall be provided in all underground work areas except when the employer can demonstrate that natural ventilation provides the necessary air quality through sufficient air volume and air flow.

(b) A minimum of 200 cubic feet (5.7 m³) of fresh air per minute shall be supplied for each employee underground.

(c) The linear velocity of air flow in the tunnel bore, in shafts, and in all other underground work areas shall be at least 30 feet (9.15 m) per minute where blasting or rock drilling is conducted, or where other conditions likely to produce dust, fumes, mists, vapors, or gases in harmful or explosive quantities are present.

(d) The direction of mechanical air flow shall be reversible.

(e) Air that has passed through underground oil or fuel-storage areas shall not be used to ventilate working areas.

(f) Following blasting, ventilation systems shall exhaust smoke and fumes to the outside atmosphere before work is resumed in affected areas.

(g) Ventilation doors shall be designed and installed so that they remain closed when in use, regardless of the direction of the air flow.

(h) When ventilation has been reduced to the extent that hazardous levels of methane or flammable gas may have accumulated, a competent person shall test all affected areas after ventilation has been restored and shall determine whether the atmosphere is within flammable limits before any power, other than for acceptable equipment, is restored or work is resumed.

(i) Whenever the ventilation system has been shut down with all employees out of the underground area, only competent persons authorized to test for air contaminants shall be allowed underground until the ventilation has been restored and all affected areas have been tested for air contaminants and declared safe.

(j) When drilling rock or concrete, appropriate dust control measures shall be taken to maintain dust levels within limits set in chapter 296-155 WAC, Part B-1. Such measures may include, but are not limited to, wet drilling, the use of vacuum collectors, and water mix spray systems.

(k)(i) Internal combustion engines, except diesel-powered engines on mobile equipment, are prohibited underground.

(ii) Mobile diesel-powered equipment used underground in atmospheres other than gassy operations shall be either approved by MSHA in accordance with the provisions of 30 CFR Part 32 (formerly Schedule 24), or shall be demonstrated by the employer to be fully equivalent to such MSHA-approved equipment, and shall be operated in accordance with that Part. (Each brake horsepower of a diesel engine requires at least 100 cubic feet (28.32 m³) of air per minute

for suitable operation in addition to the air requirements for personnel. Some engines may require a greater amount of air to ensure that the allowable levels of carbon monoxide, nitric oxide, and nitrogen dioxide are not exceeded.)

(iii) Application shall be made to the mining/explosives section, department of labor and industries, for permission to use specified diesel equipment in a specified underground area and shall include the following:

(A) The type of construction and complete identification data and specifications including analysis of the undiluted exhaust gases of the diesel equipment.

(B) The location where the diesel equipment is to be used.

(C) Before the diesel equipment is taken underground, written permission shall be obtained from the department of labor and industries or its duly authorized representative. A satisfactory test on surface, to show that the exhaust gases do not exceed the maximum percentage of carbon monoxide permitted, shall be required.

(D) Diesel equipment shall only be used underground where the ventilation is controlled by mechanical means and shall not be operated if the ventilating current is less than 100 CFM per horsepower based on the maximum brake horsepower of the engines.

(E) Air measurements shall be made at least once daily in the diesel engine working area and the measurements entered in the Underground Diesel Engine Record Book. Permissible maximum amounts of noxious gases are as follows:

At engine exhaust ports	Carbon Monoxide	.10%	1,000 ppm ³
Next to equipment	Carbon Monoxide	.0035%	35 ppm
General atmosphere	Carbon Monoxide	.0035%	35 ppm
General atmosphere	Nitrogen Dioxide	.0001%	1 ppm
General atmosphere	Aldehydes	.0002%	2 ppm

³ Parts of vapor or gas per million parts of contaminated air by volume at 25°C and 760 mm Hg. pressure.

(l) Potentially gassy or gassy operations shall have ventilation systems installed which shall:

(i) Be constructed of fire-resistant materials; and

(ii) Have acceptable electrical systems, including fan motors.

(m) Gassy operations shall be provided with controls located aboveground for reversing the air flow of ventilation systems.

(n) In potentially gassy or gassy operations, wherever mine-type ventilation systems using an offset main fan installed on the surface are used, they shall be equipped with explosion-doors or a weak-wall having an area at least equivalent to the cross-sectional area of the airway.

(16) Illumination.

(a) Sufficient lighting shall be provided, in accordance with the requirements of chapter 296-155 WAC, Part B-1, to permit safe operations at the face as well as in the general tunnel or shaft area and at the employees' workplace.

(b) Only acceptable portable lighting shall be used within 50 feet (15.24 m) of any underground heading during explosive handling.

(17) Fire prevention and control. Fire prevention and protection requirements applicable to underground construc-

tion operations are found in Part D of this chapter except as modified by the following additional standards.

(a) Open flames and fires are prohibited in all underground construction operations except as permitted for welding, cutting, and other hot work operations.

(i) Smoking may be allowed only in areas free of fire and explosion hazards.

(ii) Readily visible signs prohibiting smoking and open flames shall be posted in areas having fire or explosion hazards.

(iii) The carrying of matches, lighters, or other flame-producing smoking materials shall be prohibited in all underground operations where fire or explosion hazards exist.

(b) The employer may store underground no more than a 24-hour supply of diesel fuel for the underground equipment used at the worksite.

(c) The piping of diesel fuel from the surface to an underground location is permitted only if:

(i) Diesel fuel is contained at the surface in a tank whose maximum capacity is no more than the amount of fuel required to supply for a 24-hour period the equipment serviced by the underground fueling station; and

(ii) The surface tank is connected to the underground fueling station by an acceptable pipe or hose system that is controlled at the surface by a valve, and at the shaft bottom by a hose nozzle; and

(iii) The pipe is empty at all times except when transferring diesel fuel from the surface tank to a piece of equipment in use underground; and

(iv) Hoisting operations in the shaft are suspended during refueling operations if the supply piping in the shaft is not protected from damage.

(d)(i) Gasoline shall not be carried, stored, or used underground.

(ii) Acetylene, liquefied petroleum gas, and methylacetylene propadiene stabilized gas may be used underground only for welding, cutting and other hot work, and only in accordance with Part H of this chapter and subsections (13), (15), (17), and (18) of this section.

(e) Oil, grease, and diesel fuel stored underground shall be kept in tightly sealed containers in fire-resistant areas at least 300 feet (91.44 m) from underground explosive magazines, and at least 100 feet (30.48 m) from shaft stations and steeply inclined passageways. Storage areas shall be positioned or diked so that the contents of ruptured or overturned containers will not flow from the storage area.

(f) Flammable or combustible materials shall not be stored above ground within 100 feet (30.48 m) of any access opening to any underground operation. Where this is not feasible because of space limitations at the jobsite, such materials may be located within the 100-foot limit, provided that:

(i) They are located as far as practicable from the opening; and

(ii) Either a fire-resistant barrier of not less than one-hour rating is placed between the stored material and the opening, or additional precautions are taken which will protect the materials from ignition sources.

(g) Fire-resistant hydraulic fluids shall be used in hydraulically-actuated underground machinery and equipment unless such equipment is protected by a fire suppression

system or by multipurpose fire extinguisher(s) rated at a sufficient capacity for the type and size of hydraulic equipment involved, but rated at least 4A:40B:C.

(h)(i) Electrical installations in underground areas where oil, grease, or diesel fuel are stored shall be used only for lighting fixtures.

(ii) Lighting fixtures in storage areas, or within 25 feet (7.62 m) of underground areas where oil, grease, or diesel fuel are stored, shall be approved for Class I, Division 2 locations, in accordance with Part I of this chapter.

(i) Leaks and spills of flammable or combustible fluids shall be cleaned up immediately.

(j) A fire extinguisher of at least 4A:40B:C rating or other equivalent extinguishing means shall be provided at the head pulley and at the tail pulley of underground belt conveyors, and at 300-foot intervals along the belt.

(k) Any structure located underground or within 100 feet (30.48 m) of an opening to the underground shall be constructed of material having a fire-resistance rating of at least one hour.

(18) Welding, cutting, and other hot work. In addition to the requirements of Part H of this chapter, the following requirements shall apply to underground welding, cutting, and other hot work.

(a) No more than the amount of fuel gas and oxygen cylinders necessary to perform welding, cutting, or other hot work during the next 24-hour period shall be permitted underground.

(b) Noncombustible barriers shall be installed below welding, cutting, or other hot work being done in or over a shaft or raise.

(19) Ground support.

(a) In tunnels (other than hard rock) timber sets, steel rings, steel frames, concrete liners, or other engineered tunnel support systems shall be used. Every tunnel support system shall be designed by a licensed professional engineer. Design specifications shall be available at the worksite.

(b) Portal areas. Portal openings and access areas shall be guarded by shoring, fencing, head walls, shotcreting, or other equivalent protection to ensure safe access of employees and equipment. Adjacent areas shall be scaled or otherwise secured to prevent loose soil, rock, or fractured materials from endangering the portal and access area.

(c) Subsidence areas. The employer shall ensure ground stability in hazardous subsidence areas by shoring, by filling in, or by erecting barricades and posting warning signs to prevent entry.

(d) Underground areas.

(i)(A) A competent person shall inspect the roof, face, and walls of the work area at the start of each shift and as often as necessary to determine ground stability.

(B) Competent persons conducting such inspections shall be protected from loose ground by location, ground support, or equivalent means.

(ii) Ground conditions along haulageways and travelways shall be inspected as frequently as necessary to ensure safe passage.

(iii) Loose ground that might be hazardous to employees shall be taken down, scaled, or supported.

(iv) Torque wrenches shall be used wherever bolts that depend on torsionally applied force are used for ground support.

(v) A competent person shall determine whether rock bolts meet the necessary torque, and shall determine the testing frequency in light of the bolt system, ground conditions, and the distance from vibration sources.

(vi) Suitable protection shall be provided for employees exposed to the hazard of loose ground while installing ground support systems.

(vii) Support sets shall be installed so that the bottoms have sufficient anchorage to prevent ground pressures from dislodging the support base of the sets. Lateral bracing (collar bracing, tie rods, or spreaders) shall be provided between immediately adjacent sets to ensure added stability.

(viii) Damaged or dislodged ground supports that create a hazardous condition shall be promptly repaired or replaced. When replacing supports, the new supports shall be installed before the damaged supports are removed.

(ix) A shield or other type of support shall be used to maintain a safe travelway for employees working in dead-end areas ahead of any support replacement operation.

(e) Shafts.

(i) Shafts and wells over 4 feet (1.219 m) in depth that employees must enter shall be supported by a steel casing, concrete pipe, timber, solid rock, or other suitable material.

(ii)(A) The full depth of the shaft shall be supported by casing or bracing except where the shaft penetrates into solid rock having characteristics that will not change as a result of exposure. Where the shaft passes through earth into solid rock, or through solid rock into earth, and where there is potential for shear, the casing or bracing shall extend at least 5 feet (1.53 m) into the solid rock. When the shaft terminates in solid rock, the casing or bracing shall extend to the end of the shaft or 5 feet (1.53 m) into the solid rock, whichever is less.

(B) The casing or bracing shall extend 42 inches (1.07 m) plus or minus 3 inches (8 cm) above ground level, except that the minimum casing height may be reduced to 12 inches (0.3 m), provided that a standard railing is installed; that the ground adjacent to the top of the shaft is sloped away from the shaft collar to prevent entry of liquids; and that effective barriers are used to prevent mobile equipment operating near the shaft from jumping over the 12-inch (0.3 m) barrier.

(iii) After blasting operations in shafts, a competent person shall determine if the walls, ladders, timbers, blocking, or wedges have loosened. If so, necessary repairs shall be made before employees other than those assigned to make the repairs are allowed in or below the affected areas.

(f) Blasting. This subsection applies in addition to the requirements for blasting and explosives operations, including handling of misfires, which are found in chapter 296-52 WAC.

(i) Blasting wires shall be kept clear of electrical lines, pipes, rails, and other conductive material, excluding earth, to prevent explosives initiation or employee exposure to electric current.

(ii) Following blasting, an employee shall not enter a work area until the air quality meets the requirements of subsection (13) of this section.

(g) Drilling.

(i) A competent person shall inspect all drilling and associated equipment prior to each use. Equipment defects affecting safety shall be corrected before the equipment is used.

(ii) The drilling area shall be inspected for hazards before the drilling operation is started.

(iii) Employees shall not be allowed on a drill mast while the drill bit is in operation or the drill machine is being moved.

(iv) When a drill machine is being moved from one drilling area to another, drill steel, tools, and other equipment shall be secured and the mast shall be placed in a safe position.

(v) Receptacles or racks shall be provided for storing drill steel located on jumbos.

(vi) Employees working below jumbo decks shall be warned whenever drilling is about to begin.

(vii) Drills on columns shall be anchored firmly before starting drilling, and shall be retightened as necessary thereafter.

(viii) The employer shall provide mechanical means on the top deck of a jumbo for lifting unwieldy or heavy material.

(ix) When jumbo decks are over 10 feet (3.05 m) in height, the employer shall install stairs wide enough for two persons.

(x) Jumbo decks more than 10 feet (3.05 m) in height shall be equipped with guardrails on all open sides, excluding access openings of platforms, unless an adjacent surface provides equivalent fall protection.

(xi) Only employees assisting the operator shall be allowed to ride on jumbos, unless the jumbo meets the requirements of subsection (20)(e) of this section.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(xii) Jumbos shall be chocked to prevent movement while employees are working on them.

(xiii) Walking and working surfaces of jumbos shall be maintained to prevent the hazards of slipping, tripping, and falling.

(xiv) Jumbo decks and stair treads shall be designed to be slip-resistant and secured to prevent accidental displacement.

(xv) Scaling bars shall be available at scaling operations and shall be maintained in good condition at all times. Blunted or severely worn bars shall not be used.

(xvi) Before commencing the drill cycle, the face and lifters shall be examined for misfires (residual explosives) and, if found, they shall be removed before drilling commences at the face. Blasting holes shall not be drilled through blasted rock (muck) or water.

(xvii) Employees in a shaft shall be protected either by location or by suitable barrier(s) if powered mechanical loading equipment is used to remove muck containing unfired explosives.

(xviii) A caution sign reading "buried line," or similar wording shall be posted where air lines are buried or otherwise hidden by water or debris.

(20) Haulage.

(a) A competent person shall inspect haulage equipment before each shift.

(i) Equipment defects affecting safety and health shall be corrected before the equipment is used.

(ii) Powered mobile haulage equipment shall be provided with adequate brakes.

(iii) Power mobile haulage equipment, including trains, shall have audible warning devices to warn employees to stay clear. The operator shall sound the warning device before moving the equipment and whenever necessary during travel.

(iv) The operator shall assure that lights which are visible to employees at both ends of any mobile equipment, including a train, are turned on whenever the equipment is operating.

(v) In those cabs where glazing is used, the glass shall be safety glass, or its equivalent, and shall be maintained and cleaned so that vision is not obstructed.

(b) Antirollback devices or brakes shall be installed on inclined conveyor drive units to prevent conveyors from inadvertently running in reverse. Employees shall not be permitted to ride a power-driven chain, belt, or bucket conveyor unless the conveyor is specifically designed for the transportation of persons.

(c) Endless belt-type manlifts are prohibited in underground construction.

(d) General requirements also applicable to underground construction for use of conveyors in construction are found in chapter 296-155 WAC, Part L.

(e) No employee shall ride haulage equipment unless it is equipped with seating for each passenger and protects passengers from being struck, crushed, or caught between other equipment or surfaces. Members of train crews may ride on a locomotive if it is equipped with handholds and nonslip steps or footboards. Requirements applicable to underground construction for motor vehicle transportation of employees are found in chapter 296-155 WAC, Part M.

(f) Conveyor lockout.

(i) Conveyors shall be de-energized and locked out with a padlock, and tagged out with a "Do Not Operate" tag at any time repair, maintenance, or clean-up work is being performed on the conveyor.

(ii) Tags or push button stops are not acceptable.

(iii) Persons shall not be allowed to walk on conveyors except for emergency purposes and then only after the conveyor has been deenergized and locked out in accordance with (f) above, and persons can do so safely.

(g) Powered mobile haulage equipment, including trains, shall not be left unattended unless the master switch or motor is turned off; operating controls are in neutral or park position; and the brakes are set, or equivalent precautions are taken to prevent rolling.

(h) Whenever rails serve as a return for a trolley circuit, both rails shall be bonded at every joint and crossbonded every 200 feet (60.96 m).

(i) When dumping cars by hand, the car dumps shall have tiedown chains, bumper blocks, or other locking or holding devices to prevent the cars from overturning.

(j) Rocker-bottom or bottom-dump cars shall be equipped with positive locking devices to prevent unintended dumping.

(k) Equipment to be hauled shall be loaded and secured to prevent sliding or dislodgement.

(l)(i) Mobile equipment, including rail-mounted equipment, shall be stopped for manual connecting or service work, and;

(ii) Employees shall not reach between moving cars during coupling operations.

(iii) Couplings shall not be aligned, shifted, or cleaned on moving cars or locomotives.

(iv) Safety chains or other connections shall be used in addition to couplers to connect person cars or powder cars whenever the locomotive is uphill of the cars.

(v) When the grade exceeds one percent and there is a potential for runaway cars, safety chains or other connections shall be used in addition to couplers to connect haulage cars or, as an alternative, the locomotive must be downhill of the train.

(vi) Such safety chains or other connections shall be capable of maintaining connection between cars in the event of either coupler disconnect, failure or breakage.

(m) Parked rail equipment shall be chocked, blocked, or have brakes set to prevent inadvertent movement.

(n) Berms, bumper blocks, safety hooks, or equivalent means shall be provided to prevent overtravel and overturning of haulage equipment at dumping locations.

(o) Bumper blocks or equivalent stopping devices shall be provided at all track dead ends.

(p)(i) Only small handtools, lunch pails, or similar small items may be transported with employees in person cars, or on top of a locomotive.

(ii) When small hand tools or other small items are carried on top of a locomotive, the top shall be designed or modified to retain them while traveling.

(q)(i) Where switching facilities are available, occupied personnel cars shall be pulled, not pushed. If personnel cars must be pushed and visibility of the track ahead is hampered, then a qualified person shall be stationed in the lead car to give signals to the locomotive operator.

(ii) Crew trips shall consist of personnel loads only.

(21) Electrical safety. This subsection applies in addition to the general requirements for electrical safety which are found in Part I of this chapter.

(a) Electric power lines shall be insulated or located away from water lines, telephone lines, air lines, or other conductive materials so that a damaged circuit will not energize the other systems.

(b) Lighting circuits shall be located so that movement of personnel or equipment will not damage the circuits or disrupt service.

(c) Oil-filled transformers shall not be used underground unless they are located in a fire-resistant enclosure suitably vented to the outside and surrounded by a dike to retain the contents of the transformers in the event of rupture.

(22) Hoisting unique to underground construction except as modified by this section, the following provisions of chapter 296-155 WAC, Part L apply: Requirements for cranes are found in WAC 296-155-525. WAC 296-155-528 contains rules applicable to crane hoisting of personnel, except, that the limitations imposed by WAC 296-155-528(2) do not apply to the routine access of employees to the underground

via a shaft. Requirements for personnel hoists, material hoists, and elevators are found in WAC 296-155-530 and in this subsection.

(a) General requirements for cranes and hoists.

(i) Materials, tools, and supplies being raised or lowered, whether within a cage or otherwise, shall be secured or stacked in a manner to prevent the load from shifting, snagging, or falling into the shaft.

(ii) A warning light suitably located to warn employees at the shaft bottom and subsurface shaft entrances shall flash whenever a load is above the shaft bottom or subsurface entrances, or the load is being moved in the shaft. This subsection does not apply to fully enclosed hoistways.

(iii) Whenever a hoistway is not fully enclosed and employees are at the shaft bottom, conveyances or equipment shall be stopped at least 15 feet (4.57 m) above the bottom of the shaft and held there until the signalperson at the bottom of the shaft directs the operator to continue lowering the load, except that the load may be lowered without stopping if the load or conveyance is within full view of a bottom signalperson who is in constant voice communication with the operator.

(iv)(A) Before maintenance, repairs, or other work is commenced in the shaft served by a cage, skip, or bucket, the operator and other employees in the area shall be informed and given suitable instructions.

(B) A sign warning that work is being done in the shaft shall be installed at the shaft collar, at the operator's station, and at each underground landing.

(v) Any connection between the hoisting rope and the cage or skip shall be compatible with the type of wire rope used for hoisting.

(vi) Spin-type connections, where used, shall be maintained in a clean condition and protected from foreign matter that could affect their operation.

(vii) Cage, skip, and load connections to the hoist rope shall be made so that the force of the hoist pull, vibration, misalignment, release of lift force, or impact will not disengage the connection. Only closed shackles shall be used for cage and skip rigging.

(viii) When using wire rope wedge sockets, means shall be provided to prevent wedge escapement and to ensure that the wedge is properly seated.

(b) Additional requirements for cranes. Cranes shall be equipped with a limit switch to prevent overtravel at the boom tip. Limit switches are to be used only to limit travel of loads when operational controls malfunction and shall not be used as a substitute for other operational controls.

(c) Additional requirements for hoists.

(i) Hoists shall be designed so that the load hoist drum is powered in both directions of rotation, and so that brakes are automatically applied upon power release or failure.

(ii) Control levers shall be of the "deadman type" which return automatically to their center (neutral) position upon release.

(iii) When a hoist is used for both personnel hoisting and material hoisting, load and speed ratings for personnel and for materials shall be assigned to the equipment.

(iv) Hoist machines with cast metal parts shall not be used.

(v) Material hoisting may be performed at speeds higher than the rated speed for personnel hoisting if the hoist and components have been designed for such higher speeds and if shaft conditions permit.

(vi) Employees shall not ride on top of any cage, skip, or bucket except when necessary to perform inspection or maintenance of the hoisting system, in which case they shall be protected by a body belt/harness system to prevent falling.

(vii) Personnel and materials (other than small tools and supplies secured in a manner that will not create a hazard to employees) shall not be hoisted together in the same conveyance. However, if the operator is protected from the shifting of materials, then the operator may ride with materials in cages or skips which are designed to be controlled by an operator within the cage or skip.

(viii) Line speed shall not exceed the design limitations of the systems.

(ix) Hoists shall be equipped with landing level indicators at the operator's station. Marking of the hoist rope does not satisfy this requirement.

(x) Whenever glazing is used in the hoist house, it shall be safety glass, or its equivalent, and be free of distortions and obstructions.

(xi) A fire extinguisher that is rated at least 2A:10B:C (multipurpose, dry chemical) shall be mounted in each hoist house.

(xii) Hoist controls shall be arranged so that the operator can perform all operating cycle functions and reach the emergency power cutoff without having to reach beyond the operator's normal operating position.

(xiii) Hoists shall be equipped with limit switches to prevent overtravel at the top and bottom of the hoistway.

(xiv) Limit switches are to be used only to limit travel of loads when operational controls malfunction and shall not be used as a substitute for other operational controls.

(xv) Hoist operators shall be provided with a closed-circuit voice communication system to each landing station, with speaker-microphones so located that the operator can communicate with individual landing stations during hoist use.

(xvi) When sinking shafts 75 feet (22.86 m) or less in depth, cages, skips, and buckets that may swing, bump, or snag against shaft sides or other structural protrusions shall be guided by fenders, rails, ropes, or a combination of those means.

(xvii) When sinking shafts more than 75 feet (22.86 m) in depth, all cages, skips, and buckets shall be rope or rail-guided to within a rail length from the sinking operation.

(xviii) Cages, skips, and buckets in all completed shafts, or in all shafts being used as completed shafts, shall be rope or rail-guided for the full length of their travel.

(xix) Wire rope used in load lines of material hoists shall be capable of supporting, without failure, at least five times the maximum intended load or the factor recommended by the rope manufacturer, whichever is greater. Refer to chapter 296-155 WAC, Part L, for design factors for wire rope used in personnel hoists. The design factors shall be calculated by dividing the breaking strength of wire rope, as reported in the manufacturer's rating tables, by the total static load, including the weight of the wire rope in the shaft when fully extended.

(xx) A competent person shall visually check all hoisting machinery, equipment, anchorages, and hoisting rope at the beginning of each shift and during hoist use, as necessary.

(xxi) Each safety device shall be checked by a competent person at least weekly during hoist use to ensure suitable operation and safe condition.

(xxii) In order to ensure suitable operation and safe condition of all functions and safety devices, each hoist assembly shall be inspected and load-tested to 100 percent of its rated capacity: At the time of installation; after any repairs or alterations affecting its structural integrity; after the operation of any safety device; and annually when in use. The employer shall prepare a certification record which includes the date each inspection and load-test was performed; the signature of the person who performed the inspection and test; and a serial number or other identifier for the hoist that was inspected and tested. The most recent certification record shall be maintained on file until completion of the project.

(xxiii) Before hoisting personnel or material, the operator shall perform a test run of any cage or skip whenever it has been out of service for one complete shift, and whenever the assembly or components have been repaired or adjusted.

(xiv) Unsafe conditions shall be corrected before using the equipment.

(d) Additional requirements for personnel hoists.

(i) Hoist drum systems shall be equipped with at least two means of stopping the load, each of which shall be capable of stopping and holding 150 percent of the hoist's rated line pull. A broken-rope safety, safety catch, or arrestment device is not a permissible means of stopping under this subsection.

(ii) The operator shall remain within sight and sound of the signals at the operator's station.

(iii) All sides of personnel cages shall be enclosed by one-half inch (12.70 mm) wire mesh (not less than No. 14 gauge or equivalent) to a height of not less than 6 feet (1.83 m). However, when the cage or skip is being used as a work platform, its sides may be reduced in height to 42 inches (1.07 m) when the conveyance is not in motion.

(iv) All personnel cages shall be provided with a positive locking door that does not open outward.

(v) All personnel cages shall be provided with a protective canopy. The canopy shall be made of steel plate, at least 3/16 -inch (4.763 mm) in thickness, or material of equivalent strength and impact resistance. The canopy shall be sloped to the outside, and so designed that a section may be readily pushed upward to afford emergency egress. The canopy shall cover the top in such a manner as to protect those inside from objects falling in the shaft.

(vi) Personnel platforms operating on guide rails or guide ropes shall be equipped with broken-rope safety devices, safety catches, or arrestment devices that will stop and hold 150 percent of the weight of the personnel platform and its maximum rated load.

(vii) During sinking operations in shafts where guides and safeties are not yet used, the travel speed of the personnel platform shall not exceed 200 feet (60.96 m) per minute. Governor controls set for 200 feet (60.96 m) per minute shall be installed in the control system and shall be used during personnel hoisting.

(viii) The personnel platform may travel over the controlled length of the hoistway at rated speeds up to 600 feet (182.88 m) per minute during sinking operations in shafts where guides and safeties are used.

(ix) The personnel platform may travel at rated speeds greater than 600 feet (182.88 m) per minute in complete shafts.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-155-730, filed 8/8/01, effective 9/1/01; 99-10-071, § 296-155-730, filed 5/4/99, effective 9/1/99. Statutory Authority: RCW 49.17.010, [49.17].040, [49.17].050 and [49.17].060. 98-05-046, § 296-155-730, filed 2/13/98, effective 4/15/98. Statutory Authority: Chapter 49.17 RCW. 95-04-007, § 296-155-730, filed 1/18/95, effective 3/1/95; 94-15-096 (Order 94-07), § 296-155-730, filed 7/20/94, effective 9/20/94; 91-11-070 (Order 91-01), § 296-155-730, filed 5/20/91, effective 6/20/91; 90-03-029 (Order 89-20), § 296-155-730, filed 1/11/90, effective 2/26/90. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-730, filed 1/21/86; Order 76-29, § 296-155-730, filed 9/30/76; Order 74-26, § 296-155-730, filed 5/7/74, effective 6/6/74.]

WAC 296-155-745 Compressed air. (1) General provisions.

(a) There shall be present, at all times, at least one competent person designated by and representing the employer, who shall be familiar with this part in all respects and responsible for full compliance with these and other applicable parts.

(b) Every employee shall be instructed in the rules and regulations which concern their safety or the safety of others.

(2) Medical attendance, examination, and regulations.

(a) There shall be retained one or more licensed physicians familiar with and experienced in the physical requirements and the medical aspects of compressed air work and the treatment of decompression illness. They shall be available at all times while work is in progress in order to provide medical supervision of employees employed in compressed air work. They shall be physically qualified and be willing to enter a pressurized environment.

(b) No employee shall be permitted to enter a compressed air environment until they have been examined by the physician and reported to be physically qualified to engage in such work.

(c) In the event an employee is absent from work for 10 days, or is absent due to sickness or injury, they shall not resume work until they are reexamined by the physician, and their physical condition reported, as provided in this subsection, to be such as to permit them to work in compressed air.

(d) After an employee has been employed continuously in compressed air for a period designated by the physician, but not to exceed 1 year, the employee shall be reexamined by the physician to determine if they are still physically qualified to engage in compressed air work.

(e) Such physician shall at all times keep a complete and full record of examinations made by themselves. The physician shall also keep an accurate record of any decompression illness or other illness or injury incapacitating any employee for work, and of all loss of life that occurs in the operation of a tunnel, caisson, or other compartment in which compressed air is used.

(f) Records shall be available for the inspection by the director or his/her representatives, and a copy thereof shall be forwarded to the department within 48 hours following the

occurrence of the accident, death, injury, or decompression illness. It shall state as fully as possible the cause of said death or decompression illness, and the place where the injured or sick employee was taken, and such other relative information as may be required by the director.

(g) A fully equipped first-aid station shall be provided at each tunnel project regardless of the number of persons employed. An ambulance or transportation suitable for a litter case shall be at each project.

(h) Where tunnels are being excavated from portals more than 5 road miles apart, a first-aid station and transportation facilities shall be provided at each portal.

(i) A medical lock shall be established and maintained in immediate working order whenever air pressure in the working chamber is increased above the normal atmosphere.

(j) The medical lock shall:

(i) Have at least 6 feet of clear headroom at the center, and be subdivided into not less than two compartments;

(ii) Be readily accessible to employees working under compressed air;

(iii) Be kept ready for immediate use for at least 5 hours subsequent to the emergence of any employee from the working chamber;

(iv) Be properly heated, lighted and ventilated;

(v) Be maintained in a sanitary condition;

(vi) Have a nonshatterable port through which the occupant(s) may be kept under constant observation;

(vii) Be designed for a working pressure of 75 p.s.i.g.;

(viii) Be equipped with internal controls which may be overridden by external controls;

(ix) Be provided with air pressure gauges to show the air pressure within each compartment to observers inside and outside the medical lock;

(x) Be equipped with a manual type sprinkler system that can be activated inside the lock or by the outside lock tender;

(xi) Be provided with oxygen lines and fittings leading into external tanks. The lines shall be fitted with check valves to prevent reverse flow. The oxygen system inside the chamber shall be of a closed circuit design and be so designed as to automatically shut off the oxygen supply whenever the fire system is activated.

(xii) Be in constant charge of an attendant under the direct control of the retained physician. The attendant shall be trained in the use of the lock and suitably instructed regarding steps to be taken in the treatment of employee exhibiting symptoms compatible with a diagnosis of decompression illness;

(xiii) Be adjacent to an adequate emergency medical facility;

(xiv) The medical facility shall be equipped with demand-type oxygen inhalation equipment approved by the U.S. Bureau of Mines or Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH);

(xv) Be capable of being maintained at a temperature, in use, not to exceed 90°F. nor be less than 70°F.; and

(xvi) Be provided with sources of air, free of oil and carbon monoxide, for normal and emergency use, which are capable of raising the air pressure in the lock from 0 to 75 p.s.i.g. in 5 minutes.

(k) Identification badges shall be furnished to all employees, indicating that the wearer is a compressed air worker. A permanent record shall be kept of all identification badges issued. The badge shall give the employee's name, address of the medical lock, the telephone number of the licensed physician for the compressed air project, and contain instructions that in case of emergency of unknown or doubtful cause or illness, the wearer shall be rushed to the medical lock. The badge shall be worn at all times—off the job, as well as on the job.

(3) Telephone and signal communication. Effective and reliable means of communication, such as bells, whistles, or telephones, shall be maintained at all times between all the following locations;

(a) The working chamber face;

(b) The working chamber side of the man lock near the door;

(c) The interior of the man lock;

(d) Lock attendant's station;

(e) The compressor plant;

(f) The first-aid station;

(g) The emergency lock (if one is required); and

(h) The special decompression chamber (if one is required).

(4) Signs and records.

(a) The time of decompression shall be posted in each man lock as follows:

TIME OF DECOMPRESSION FOR THIS LOCK

..... pounds to pounds in minutes.

..... pounds to pounds in minutes.

(Signed by)

(Superintendent)

This form shall be posted in the man lock at all times.

(b) Any code of signals used shall be conspicuously posted near workplace entrances and such other locations as may be necessary to bring them to the attention of all employees concerned.

(c) For each 8-hour shift, a record of employees employed under air pressure shall be kept by an employee who shall remain outside the lock near the entrance. This record shall show the period each employee spends in the air chamber and the time taken from decompression. A copy shall be submitted to the appointed physician after each shift.

(5) Compression.

(a) Every employee going under air pressure for the first time shall be instructed on how to avoid excessive discomfort.

(b) During the compression of employees, the pressure shall not be increased to more than 3 p.s.i.g. within the first minute. The pressure shall be held at 3 p.s.i.g. and again at 7 p.s.i.g. sufficiently long to determine if any employees are experiencing discomfort.

(c) After the first minute the pressure shall be raised uniformly and at a rate not to exceed 10 p.s.i. per minute.

(d) If any employee complains of discomfort, the pressure shall be held to determine if the symptoms are relieved. If, after 5 minutes the discomfort does not disappear, the lock attendant shall gradually reduce the pressure until the employee signals that the discomfort has ceased. If the

employee does not indicate that the discomfort has disappeared, the lock attendant shall reduce the pressure to atmospheric and the employee shall be released from the lock.

(e) No employee shall be subjected to pressure exceeding 50 pounds per square inch except in an emergency.

(6) Decompression.

(a) Decompression to normal condition shall be in accordance with the decompression tables in Appendix A of this part.

(b) In the event it is necessary for an employee to be in compressed air more than once in a 24-hour period, the appointed physician shall be responsible for the establishment of methods and procedures of decompression applicable to repetitive exposures.

(c) If decanting is necessary, the appointed physician shall establish procedures before any employee is permitted to be decompressed by decanting methods. The period of time that the employees spend at atmospheric pressure between the decompression following the shift and recompression shall not exceed 5 minutes.

(7) Man locks and special decompression chambers.

(a) Man locks.

(i) Except in emergency, no employees employed in compressed air shall be permitted to pass from the working chamber to atmospheric pressure until after decompression, in accordance with the procedures in this part.

(ii) The lock attendant in charge of a man lock shall be under the direct supervision of the appointed physician. The lock attendant shall be stationed at the lock controls on the free air side during the period of compression and decompression and shall remain at the lock control station whenever there are persons in the working chamber or in the man lock.

(iii) Except where air pressure in the working chamber is below 12 p.s.i.g., each man lock shall be equipped with automatic controls which, through taped programs, cams, or similar apparatus, shall automatically regulate decompressions. It shall also be equipped with manual controls to permit the lock attendant to override the automatic mechanism in the event of an emergency, as provided in item (viii) of this subdivision.

(iv) A manual control, which can be used in the event of an emergency, shall be placed inside the man lock.

(v) A clock, thermometer, and continuous recording pressure gauge with a 4-hour graph shall be installed outside of each man lock and shall be changed prior to each shift's decompression. The chart shall be of sufficient size to register a legible record of variations in pressure within the man lock and shall be visible to the lock attendant. A copy of each graph shall be submitted to the appointed physician after each shift. In addition, a pressure gauge, clock, and thermometer shall also be installed in each man lock. Additional fittings shall be provided so that the test gauges may be attached whenever necessary.

(vi) Except where air pressure is below 12 p.s.i.g. and there is no danger of rapid flooding, all caissons having a working area greater than 150 square feet, and each bulkhead in tunnels of 14 feet or more in diameter, or equivalent area, shall have at least two locks in perfect working condition, one of which shall be used exclusively as a man lock, the other, as a materials lock.

(vii) Where only a combination man-and-materials lock is required, this single lock shall be of sufficient capacity to hold the employees constituting two successive shifts.

(viii) Emergency locks shall be large enough to hold an entire heading shift and a limit maintained of 12 p.s.i.g. There shall be a chamber available for oxygen decompression therapy to 28 p.s.i.g.

(ix) The man lock shall be large enough so that those using it are not compelled to be in a cramped position and shall not have less than 5 feet clear head room at the center and a minimum of 30 cubic feet of air space per occupant.

(x) Locks on caissons shall be so located that the bottom door shall be not less than 3 feet above the water level surrounding the caisson on the outside. (The water level, where it is affected by tides, is construed to mean high tide.)

(xi) In addition to the pressure gauge in the locks, an accurate pressure gauge shall be maintained on the outer and inner side of each bulkhead. These gauges shall be accessible at all times and shall be kept in accurate working order.

(xii) Man locks shall have an observation port at least 4 inches in diameter located in such a position that all occupants of the man lock may be observed from the working chamber and from the free air side of the lock.

(xiii) Adequate ventilation in the lock shall be provided.

(xiv) Man locks shall be maintained at a minimum temperature of 70°F.

(xv) When locks are not in use and employees are in the working chamber, lock doors shall be kept open to the working chamber, where practicable.

(xvi) Provision shall be made to allow for rescue parties to enter the tunnel if the working force is disabled.

(xvii) A special decompression chamber of sufficient size to accommodate the entire force of employees being decompressed at the end of a shift shall be provided whenever the regularly established working period requires total time of decompression exceeding 75 minutes.

(b) Special decompression chamber.

(i) The headroom in the special decompression chamber shall be not less than a minimum 7 feet and the cubical content shall provide at least 50 cubic feet of airspace for each employee. 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 employee and shall be posted at the chamber entrance. The posted capacity shall not be exceeded, except in case of emergency.

(ii) 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 gauges which will indicate to the attendants and to the chamber occupants the pressure in the chamber;

(C) Valves to enable the attendant to control the supply and discharge of compressed air into and from the chamber.

(D) Valves and pipes, in connection with the air supply and exhaust, arranged so that the chamber pressure can be controlled from within and without;

(E) Effective means of oral intercommunication between the attendant, occupants of the chamber, and the air compressor plant; and

(F) An observation port at the entrance to permit observation of the chamber occupants.

(iii) 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 wide, shall be provided per occupant.

(iv) Adequate toilet and washing facilities, in a screened or enclosed recess, shall be provided. Toilet bowls shall have a built-in protector on the rim so that an air space is created when the seat lid is closed.

(v) Fresh and pure drinking water shall be available. This may be accomplished by either piping water into the special decompression chamber and providing drinking fountains, or by providing individual canteens, or by some other sanitary means. Community drinking vessels are prohibited.

(vi) No refuse or discarded material of any kind shall be permitted to accumulate, and the chamber shall be kept clean.

(vii) Unless the special decompression chamber is serving as the man lock to atmospheric pressure, the special decompression chamber shall be situated, where practicable, adjacent to the man lock on the atmospheric pressure side of the bulkhead. A passageway shall be provided, connecting the special chamber with the man lock, to permit employees 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 next 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.

(8) Compressor plant and air supply.

(a) At all times there shall be a thoroughly experienced, competent, and reliable person on duty at the air control valves as a gauge tender who shall regulate the pressure in the working areas. During tunneling operations, one gauge tender may regulate the pressure in not more than two headings: Provided; That the gauges and controls are all in one location. In caisson work, there shall be a gauge tender for each caisson.

(b) The low air compressor plant shall be of sufficient capacity to not only permit the work to be done safely, but shall also provide a margin to meet emergencies and repairs.

(c) Low air compressor units shall have at least two independent and separate sources of power supply and each shall be capable of operating the entire low air plant and its accessory systems.

(d) 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, repair, or emergency.

(e) Switching from one independent source of power supply to the other shall be done periodically to ensure that workability of the apparatus in an emergency.

(f) Duplicate low-pressure air feedlines and regulating valves shall be provided between the source of air supply and

a point beyond the locks with one of the lines extending to within 100 feet of the working face.

(g) All high-pressure and low-pressure air supply lines shall be equipped with check valves.

(h) Low-pressure air shall be regulated automatically. In addition, manually operated valves shall be provided for emergency conditions.

(i) The air intakes for all air compressors shall be located at a place where fumes, exhaust gases, and other air contaminants will be at a minimum.

(j) Gauges indicating the pressure in the working chamber shall be installed in the compressor building, the lock attendant's station, and at the employer's field office.

(9) Ventilation and air quality.

(a) Exhaust valves and exhaust pipes shall be provided and operated so that the working chamber shall be well ventilated, and there shall be no pockets of dead air. Outlets may be required at intermediate points along the main low-pressure air supply line to the heading to eliminate such pockets of dead air. The quantity of ventilation air shall be not less than 30 cubic feet per minute.

(b) The air in the workplace shall be analyzed by the employer not less than once each shift, and records of such tests shall be kept on file at the place where the work is in progress. The test results shall be within the threshold limit values specified in part B of this chapter, for hazardous gases, and within 10 percent of the lower explosive limit of flammable gases. If these limits are not met, immediate action to correct the situation shall be taken by the employer.

(c) The temperature of all working chambers which are subjected to air pressure shall, by means of after-coolers or other suitable devices, be maintained at a temperature not to exceed 85°F.

(d) Forced ventilation shall be provided during decompression. During the entire decompression period, forced ventilation through chemical or mechanical air purifying devices that will ensure a source of fresh air shall be provided.

(e) Whenever heat-producing machines (moles, shields) are used in compressed air tunnel operations, a positive means of removing the heat build-up at the heading shall be provided.

(10) Electricity.

(a) All lighting in compressed-air chambers shall be by electricity exclusively, and two independent electric-lighting systems with independent sources of supply shall be used. The emergency source shall be arranged to become automatically operative in the event of failure of the regularly used source.

(b) The minimum intensity of light on any walkway, ladder, stairway, or working level shall be not less than 10 foot-candles, and in all workplaces the lighting shall at all times be such as to enable employees to see clearly.

(c) All electrical equipment, and wiring for light and power circuits, shall comply with requirements of Part I, of this standard, for use in damp, hazardous, high temperature, and compressed air environments.

(d) External parts of lighting fixtures and all other electrical equipment, when within 8 feet of the floor, shall be constructed of noncombustible, nonabsorptive, insulating mate-

rials, except that metal may be used if it is effectively grounded.

(e) Portable lamps shall be equipped with noncombustible, nonabsorptive, insulating sockets, approved handles, basket guards, and approved cords.

(f) The use of worn or defective portable and pendant conductors is prohibited.

(11) Sanitation.

(a) Sanitary, heated, lighted, and ventilated dressing rooms and drying rooms shall be provided for all employees engaged in compressed air work. Such rooms shall contain suitable benches and lockers. Bathing accommodations (showers at the ratio of one to 10 employees per shift), equipped with running hot and cold water, and suitable and adequate toilet accommodations, shall be provided. One toilet for each 15 employees, or fractional part thereof, shall be provided.

(b) When the toilet bowl is shut by a cover, there should be an air space so that the bowl or bucket does not implode when pressure is increased.

(c) All parts of caissons and other working compartments shall be kept in a sanitary condition.

(12) Fire prevention and protection.

(a) Fire fighting equipment shall be available at all times and shall be maintained in working condition.

(b) While welding or flame-cutting is being done in compressed air, a firewatch with a fire hose or approved extinguisher shall stand by until such operation is completed.

(c) Shafts and caissons containing flammable material of any kind, either above or below ground, shall be provided with a waterline and a fire hose connected thereto, so arranged that all points of the shaft or caisson are within reach of the hose stream.

(d) 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 ensure an uninterrupted flow. Fire hose, when not in use, shall be located or guarded to prevent injury thereto.

(e) The power house, compressor house, and all buildings housing ventilating equipment, shall be provided with at least one hose connection in the waterline, with a fire hose connected thereto. A fire hose shall be maintained within reach of structures of wood over or near shafts.

(f) Tunnels shall be provided with a 2-inch minimum diameter waterline extending into the working chamber and to within 100 feet of the working face. Such line shall have hose outlets with 100 feet of fire hose 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.

(g) In addition to fire hose protection required by this part, on every floor of every building not under compressed air, but used in connection with the compressed air work, there shall be provided at least one approved fire extinguisher of the proper type for the hazards involved. At least two

approved fire extinguishers shall be provided in the working chamber as follows: One at the working face and one immediately inside the bulkhead (pressure side). Extinguishers in the working chamber shall use water as the primary extinguishing agent and shall not use any extinguishing agent which could be harmful to the employees in the working chamber. The fire extinguisher shall be protected from damage.

(h) Highly combustible materials shall not be used or stored in the working chamber. Wood, paper, and similar combustible material shall not be used in the working chamber in quantities which could cause a fire hazard. The compressor building shall be constructed of noncombustible material.

(i) Man locks shall be equipped with a manual type fire extinguisher system that can be activated inside the man lock and also by the outside lock attendant. In addition, a fire hose and portable fire extinguisher shall be provided inside and outside the man lock. The portable fire extinguisher shall be the dry chemical type.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(j) Equipment, fixtures, and furniture in man locks and special decompression chambers shall be constructed of noncombustible materials. Bedding, etc., shall be chemically treated so as to be fire resistant.

(k) Head frames shall be constructed of structural steel or open frame-work fireproofed timber. Head houses and other temporary surface buildings or structures within 100 feet of the shaft, caisson, or tunnel opening shall be built of fire-resistant materials.

(l) No oil, gasoline, or other combustible materials shall be stored within 100 feet of any shaft, caisson, or tunnel opening, except that oils may be stored in suitable tanks in isolated fireproof buildings, provided such buildings are not less than 50 feet from any shaft, caisson, or tunnel opening, or any building directly connected thereto.

(m) Positive means shall be taken to prevent leaking flammable liquids from flowing into the areas specifically mentioned in the preceding subdivision.

(n) All explosives used in connection with compressed air work shall be selected, stored, transported, and used as specified in part T of this chapter.

(13) Bulkheads and safety screens.

(a) Intermediate bulkheads with locks, or intermediate safety screens or both, are required where there is danger of rapid flooding.

(b) In tunnels 16 feet or more in diameter, hanging walkways shall be provided from the face to the man lock as high in the tunnel as practicable, with at least 6 feet of head room. Walkways shall be constructed of noncombustible material. Standard railings shall be securely installed throughout the length of all walkways on open sides in accordance with Part K of this chapter. Where walkways are ramped under safety screens, the walkway surface shall be skidproofed by cleats or by equivalent means.

(c) Bulkheads used to contain compressed air shall be tested, where practicable, to prove their ability to resist the highest air pressure which may be expected to be used.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-155-745, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-24-051, § 296-155-745, filed 11/27/96, effective 2/1/97. Statutory Authority: Chapter 49.17 RCW. 95-10-016, § 296-155-745, filed 4/25/95, effective 10/1/95; 94-15-096 (Order 94-07), § 296-155-745, filed 7/20/94, effective 9/20/94; 88-23-054 (Order 88-25), § 296-155-745, filed 11/14/88; Order 74-26, § 296-155-745, filed 5/7/74, effective 6/6/74.]

Chapter 296-200A WAC

CONTRACTOR CERTIFICATE OF REGISTRATION RENEWALS—SECURITY—INSURANCE

WAC

296-200A-900 What fees does the department charge contractors for issuance, renewal and reinstatement of certificates of registration?

WAC 296-200A-900 What fees does the department charge contractors for issuance, renewal and reinstatement of certificates of registration? (1) For the purposes of this chapter:

(a) A contractor's registration is **renewed** before it expires.

(b) A contractor's registration is **reinstated** after the registration:

- (i) Has expired; or
- (ii) Has been suspended because the contractor's insurance has expired; or
- (iii) Has been suspended because the contractor's bond has been canceled or impaired.

(c) A contractor **reregisters** when his or her business structure changes.

(2) The department charges the following fees:

(a) Before August 1, 2001:

(i) \$45.00 for each issuance, renewal or reregistration of a certificate of registration.

(ii) \$46.20 for the reinstatement of a certificate of registration.

(b) On or after August 1, 2001:

(i) \$50.00 for each issuance, renewal or reregistration of a certificate of registration for contractors with an even numbered Unified Business Identifier number. This registration is valid for one year from date of issuance, renewal or reregistration or until it is suspended or revoked.

(ii) \$100.00 for each issuance, renewal or reregistration of a certificate of registration for contractors with an odd numbered Unified Business Identifier number or those who are not required to have a Unified Business Identifier by the department of revenue. This registration is valid for two years from date of issuance, renewal or reregistration or until it is suspended or revoked.

(iii) \$46.20 for the reinstatement of a certificate of registration.

(iv) After the issuance, renewal or reregistration of a certificate of registration granted under (b)(i) and (ii) of this subsection all contractors (regardless of Unified Business Identifier number) must comply with the two-year registration provisions established under (b)(ii) of this subsection.

(c) \$11.00 for providing a duplicate certificate of registration.

(d) \$22.10 for each requested certified letter prepared by the department.

(e) \$2.00 per copy for documents copied from a contractor's file. The maximum copy charge for copies from one contractor's file will be \$25.70.

(f) On or after July 22, 2001, a fee of \$20.00 is required to cover the costs for the service of process in an action against the contractor, the contractor's bond, or the deposit under RCW 18.27.040.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-200A-900, filed 5/29/01, effective 6/29/01. Statutory Authority: Chapters 43.22, 18.27, 70.87 and 19.28 RCW. 99-12-080, § 296-200A-900, filed 5/28/99, effective 6/28/99. Statutory Authority: Chapters 18.106, 18.27 and 43.22 RCW. 98-12-041, § 296-200A-900, filed 5/29/98, effective 6/30/98. Statutory Authority: Chapter 18.27 RCW. 97-24-071, § 296-200A-900, filed 12/2/97, effective 1/5/98.]

Chapter 296-301 WAC

SAFETY STANDARDS FOR THE TEXTILE INDUSTRY

WAC

296-301-010	Textiles—Application requirements.
296-301-020	General safety requirements.
296-301-215	First aid.
296-301-220	Personal protective equipment.

WAC 296-301-010 Textiles—Application requirements. (1) Application. The requirements of this chapter for textile safety apply to the design, installation, processes, operation, and maintenance of textile machinery, equipment, and other plant facilities in all plants engaged in the manufacture and processing of textiles, except those processes used exclusively in the manufacture of synthetic fibers.

(2) These standards shall be augmented by the Washington state general safety and health standards, and any other regulations of general application which are or will be made applicable to all industries.

(3) The provisions of this chapter shall prevail in the event of conflict with or duplication of, provisions contained in chapter 296-24 WAC, the general safety and health standards, chapter 296-62 WAC, the general occupational health standards, and chapter 296-800 WAC, the safety and health core rule book.

(4) WAC 296-24-012 and 296-800-360 shall apply where applicable to this industry.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-301-010, filed 5/9/01, effective 9/1/01; Order 74-19, § 296-301-010, filed 5/6/74.]

WAC 296-301-020 General safety requirements. (1) Means of stopping machines. Every textile machine shall be provided with individual mechanical or electrical means for stopping such machines. On machines driven by belts and shafting a locking-type shifter or an equivalent positive device shall be used. On operations 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.

(2) Handles. Stopping and starting handles shall be designed to the proper length to prevent the worker's hand or fingers from striking against any revolving part, gear guard, or any other part of the machine.

(3) Machine guarding. An employer must ensure that power transmission parts are guarded according to the requirements of WAC 296-24-205 through 296-24-20527.

(4) Housekeeping. Aisles and working spaces shall be kept in good order in accordance with requirements of WAC 296-24-735 through 296-24-73505 and WAC 296-800-220.

(5) Inspection and maintenance. All guards and other safety devices, including starting and stopping devices, shall be properly maintained.

(6) Lighting and illumination. Lighting and illumination shall conform to the safety and health core rule book, WAC 296-800-210.

(7) Identification of piping systems. Identification of piping systems shall conform to American National Standard A13.1-1956.

(8) Identification of physical hazards. Identification of physical hazards shall be in accordance with the requirements of WAC 296-24-135 through 296-24-13503, of the general safety and health standards.

(9) Steam pipes. All pipes carrying steam or hot water for process or servicing machinery, when exposed to contact and located within seven feet of the floor or working platform shall be covered with a heat-insulating material, or guarded with equivalent protection.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-301-020, filed 5/9/01, effective 9/1/01; 99-17-094 and 99-22-093, § 296-301-020, filed 8/17/99 and 11/2/99, effective 1/1/00; 98-10-073, 98-24-120 and 99-12-091, § 296-301-020, filed 5/4/98, 12/2/98 and 6/1/99, effective 1/1/00; Order 74-19, § 296-301-020, filed 5/6/74.]

WAC 296-301-215 First aid. The first-aid provisions of the safety and health core rule book, WAC 296-800-150 apply within the scope of chapter 296-301 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-301-215, filed 5/9/01, effective 9/1/01; 00-01-038, § 296-301-215, filed 12/7/99, effective 2/1/00; Order 74-19, § 296-301-215, filed 5/6/74.]

WAC 296-301-220 Personal protective equipment.

(1) Personal protective equipment. Workers engaged in handling acids or caustics in bulk, repairing pipe lines containing acids or caustics, etc., shall be provided with personal protective equipment to conform to the requirements of WAC 296-800-160.

(2) Respiratory protection. Employers must provide respiratory protection as required in chapter 296-62 WAC, Part E.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-301-220, filed 5/9/01, effective 9/1/01; 99-17-094, § 296-301-220, filed 8/17/99, effective 12/1/99; Order 74-19, § 296-301-220, filed 5/6/74.]

Chapter 296-302 WAC

SAFETY STANDARDS FOR BAKERY EQUIPMENT

WAC

296-302-010 Bakery equipment—General requirements.
296-302-02501 General requirements for flour-handling.

296-302-050 Miscellaneous equipment.
296-302-060 Biscuit and cracker equipment.
296-302-06513 Oil-burning equipment.

WAC 296-302-010 Bakery equipment—General requirements. (1) Application. The requirements of this chapter shall apply to the design, installation, operation and maintenance of machinery and equipment used within a bakery.

(2) These standards shall be augmented by the Washington state general safety and health standards, and any other regulations of general application which are or will be made applicable to all industries.

(3) The provisions of this chapter shall prevail in the event of a conflict with, or duplication of, provisions contained in chapters 296-24, 296-62, and 296-800 WAC.

(4) WAC 296-24-012 and 296-800-360, shall apply where applicable to this industry.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-302-010, filed 5/9/01, effective 9/1/01; Order 74-17, § 296-302-010, filed 5/6/74.]

WAC 296-302-02501 General requirements for flour-handling. (1) Wherever any of the various pieces of apparatus comprising a flour-handling system are run in electrical unity with one another the following safeguards shall apply:

(a) Each apparatus shall be safeguarded by a disconnecting means for the motor circuits as required by National Electrical Code - 1971 edition.

(b) Wherever a flour-handling system is of such size that the beginning of its operation is far remote from its final delivery end, all electric motors operating each apparatus comprising this system shall be controlled at each of two points, one located at each remote end, either of which will stop all motors.

(c) Motor control switches shall be capable of being locked in the open position.

(d) Control circuits for magnetic controllers shall be so arranged that the opening of any one of several limit switches, which may be on an individual unit, will serve to de-energize all of the motors of that unit.

(2) Removable covers on all flour-handling equipment shall be so designed that the lifting effort shall not be more than 50 pounds.

(3) Wherever flour-handling systems are of large construction, suitable walkways or platforms or both shall be constructed around and over bins and apparatus, in accordance with the applicable requirements of the general safety and health standard, chapter 296-24 WAC and safety and health core rules, chapter 296-800 WAC.

(a) All walkway surfaces shall be maintained in nonslip condition.

(b) Elevated walkways shall have railings and toeboards in compliance with applicable requirements of the general safety and health standard, chapter 296-24 WAC and safety and health core rules, chapter 296-800 WAC.

(c) All ladders leading to upper walkways shall be in accordance with the applicable requirements of the general safety and health standard, chapter 296-24 WAC and safety and health core rules, chapter 296-800 WAC.

(d) Wherever walkways are near the ceiling construction of the building, where obstruction to head room is lower than normal standing height, methods shall be provided to warn any occupant of the walkway. This should be done by means of "tell tales" or other suitable means located ahead of the obstruction. Suitable signs shall also be placed on walkways warning occupants of possible danger.

(4) All oscillating and vibrating sifters shall be protected with guard rails in compliance with applicable requirements of the general safety and health standard, chapter 296-24 WAC and safety and health core rules, chapter 296-800 WAC.

(5) All mechanical transmission shafting, gearing, and sprocket drives shall be completely guarded, preferably with dust-tight housing. Lubrication fittings shall extend to the outside of the guard.

(6) All guards shall be readily removable.

(7) All flour-handling equipment, each individual unit or the entire system collectively, shall be so constructed that all interior or exterior protruding corners are of a rounded nature.

(8) When Class II hazardous conditions prevail, electric motors, motor controllers, and switches shall be of the type approved for such locations in accordance with the requirements of the National Electrical Code - 1971 edition.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-302-02501, filed 5/9/01, effective 9/1/01; Order 74-17, § 296-302-02501, filed 5/6/74.]

WAC 296-302-050 Miscellaneous equipment. (1)

Proof boxes. All door locks shall be operable both from within and outside the box. Guide rails shall be installed to center the rack as it enters, passes through, and leaves the proof box.

(2) Fermentation room. Fermentation room doors shall have nonshatterable wire glass or plastic panels for vision through doors.

(3) Troughs. Troughs shall be mounted on antifriction bearing casters thus making it possible for the operator to move and direct the motion of the trough with a minimum of effort.

(4) Hand trucks.

(a) Casters shall be set back from corners to be out of the way of toes and heels, but not far enough back to cause the truck to be unstable.

(b) A lock or other device shall be provided to hold the handle in vertical position when the truck is not in use.

(5) Lift trucks. A lock or other device shall be provided to hold the handle in vertical position when the truck is not in use.

(6) Racks.

(a) Sharp splintered or rough corners and edges shall be eliminated.

(b) Racks shall be equipped with handles so located with reference to the frame of the rack that no part of the operator's hands extends beyond the outer edge of the frame when holding onto the handles.

(c) Antifriction bearing casters shall be used to give the operator better control of the rack.

(d) End guards shall be used at shelf levels on proofing racks.

(7) Conveyors.

(a) Wherever a conveyor passes over a main aisleway, regularly occupied work area, or passageway, the underside of the conveyor shall be completely enclosed to prevent broken chains or other material from falling in the passageway or work area.

(b) Stop bumpers shall be installed on all delivery ends of conveyors, wherever manual removal of the product carried is practiced.

(c) All conveyors shall have stop buttons at all operating stations. In addition, emergency stop bars or switches shall be installed at any machine infeed location fed by the conveyor where pinch points exist.

(8) Overhead rail systems.

(a) Handles for operating devices for trolley switches which hang less than 6 feet 8 inches from the floor shall be of pliable material.

(b) Floor scales. Nonshatterable transparent material shall be used to cover dials.

(9) Dough chutes. The entrance to the chute shall be guarded so as to protect the employee from falling into chute, stepping into chute, or tripping over too low an edge of the chute.

(10) Skids.

(a) All sharp corners or edges shall be eliminated on all metal skids.

(b) All edges and corners shall be protected on skids to prevent exposed splinters.

(11) Ingredient premixers, emulsifiers, etc.

(a) All top openings shall be provided with covers attached to the machines. These covers should be so arranged and interlocked that power will be shutoff whenever the cover is opened to a point where the operator's fingers might come in contact with the beaters.

(b) Portable electrical agitators for ingredient premixers shall have the attachment cord so wired that the agitator will be grounded whenever it is connected to a source of power.

(12) Chain tackle.

(a) All chain tackle shall be marked prominently, permanently, and legibly with maximum load capacity.

(b) All chain tackle shall be marked permanently, and legibly with minimum support specification.

(c) Safety hooks shall be used.

(13) Trough hoists, etc.

(a) All hoists shall be marked prominently, permanently, and legibly with maximum load capacity.

(b) All hoists shall be marked permanently and legibly with minimum support specifications.

(c) Safety catches shall be provided for the chain so that the chain will hold the load in any position.

(d) Safety hooks shall be used.

(14) Air-conditioning units.

(a) All sharp corners and edges shall be eliminated.

(b) On large units with doors to chambers large enough to be entered, all door locks shall be operable from both inside and outside.

(15) Pan washing tanks.

(a) Counter-balanced hinged covers, or sliding covers, shall be provided.

(b) The surface of the floor of the working platform shall be maintained in nonslip condition.

(c) Working platforms shall be kept at least 32 inches below the top of the tank or guardrail.

(d) All electrical sockets in pan washing rooms shall be nonmetallic and keyless and other electrical equipment shall be moisture proof.

(e) Power ventilated exhaust hoods shall be provided over the tanks.

(16) Pan washing machines. Sharp corners and edges shall be eliminated.

(17) Cake depositors. All pinch points shall be eliminated, guarded, or shielded so that hands and arms cannot reach these pinch points while the machine is in operation.

(18) Icing machines. All pinch points shall be eliminated, or provided with guards or shields so hands and arms cannot reach these pinch points while the machine is in operation.

(19) Bread coolers, conveyor type.

(a) All pinch points shall be eliminated or guarded.

(b) Stop bumpers on all delivery ends of conveyors shall be installed wherever manual removal of the product carried is practiced.

(20) Bread coolers, rack type.

(a) Guardrails shall be installed to the center rack as it enters and leaves the cooler.

(b) All door locks shall be operable from both within and outside the cooler.

(21) Bread and cake boxes, trays, etc.

(a) Sharp corners and edges shall be eliminated on metal parts.

(b) All wooden corners and edges shall be protected to prevent splinters.

(22) Doughnut machines. Separate flues shall be provided, (a) for venting vapors from the frying section, and (b) for venting products of combustion from the combustion chamber used to heat the fat.

(23) Open fat kettles.

(a) The floor around kettles shall be maintained in nonslip condition.

(b) Fire extinguishing devices suitable for Class-B fires shall be provided. See WAC 296-800-300, fire extinguishers.

(c) Goggles or face shields shall be provided to prevent injuries from hot fat splashes.

(d) The top of the kettle shall be not less than 36 inches above floor or working level.

(24) Steam kettles.

(a) Positive locking devices shall be provided to hold kettles in the desired position.

(b) Kettles with steam jackets shall be provided with safety valves in accordance with the ASME Pressure Vessel Code, section VIII, Unfired Pressure Vessels, 1968.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-302-050, filed 5/9/01, effective 9/1/01; Order 74-17, § 296-302-050, filed 5/6/74.]

WAC 296-302-060 Biscuit and cracker equipment.

(1) Meal, peanut, and fig grinders.

(a) If the hopper is removable it shall be provided with an electric interlock so that the machine cannot be put in operation when the hopper is removed.

(b) Where grid guards cannot be used, feed conveyors to hoppers, or baffle-type hoppers, shall be provided. Hoppers in such cases shall be enclosed and provided with hinged covers, and equipped with electric interlock to prevent operation of the machine with the cover open.

(2) Sugar and spice pulverizers.

(a) All drive belts used in connection with sugar and spice pulverizers shall be grounded by means of metal combs or other effective means of removing static electricity. All pulverizing of sugar or spice grinding shall be done in accordance with NFPA 62-1967 (Standard for Dust Hazards of Sugar and Cocoa), NFPA 656-1959 (Standard for Dust Hazards in Spice Grinding Plants).

(b) Magnetic separators shall be provided to reduce fire and explosion hazards.

(3) Cheese, fruit, and food cutters. These machines shall be protected in accordance with the requirements of (1) of this section.

(4) Jam, icing, and marshmallow beaters of horizontal tub type. All top openings shall be provided with covers attached to the machines.

(5) Reversible dough brakes. Reversible brakes shall be provided with a guard or tripping mechanism on each side of the rolls. These guards shall be so arranged as to stop the machine or reverse the direction of the rolls so that they are outrunning if the guard is moved by contact of the operator.

(6) Cross-roll brakes. Cross-roll brakes shall be provided with guards that are similar in number and equal in effectiveness to guards on hand-fed brakes.

(7) Box- and roll-type dough sheeters.

(a) Sheeting rolls shall be guarded at the point where the dough enters the rolls so that the operator's fingers cannot get into the nip point.

(b) Hoppers for sheeters shall have an automatic stop bar or automatic stopping device along the back edge of the hopper. If construction does not permit location at the back edge, the automatic stop bar or automatic stopping device shall be located where it will be most effective to accomplish the desired protection.

(8) Cutting and panning, embossing, peeling, bar, and frutana machines.

(a) Roll stands, other than hand fed, shall be guarded at the point where the dough enters the rolls so that the operator's fingers cannot get into the nip points.

(b) Guards shall be provided at each side of the cutter to prevent hands from getting under the cutter.

(c) Reciprocating panner heads shall be guarded to protect the operator from being caught between moving and stationary parts.

(d) Motor control buttons shall be located within view of the cutting head.

(9) Rotary, die machines, pretzel rolling, and pretzel-stick extruding machines. Dough hoppers shall have the entire opening protected with grid-type guards to prevent the employee from getting his hands caught in moving parts, or the hopper shall be extended high enough so that the operator's hands cannot get into moving parts.

(10) Band ovens. Band ovens shall be so arranged, or guarded, that the operator cannot get caught at the nip point between the band and the drive pulley or the takeup pulley, or between the oven conveyor and the oven frame.

(11) Wafer-cutting machines. These machines shall be so guarded that it will be impossible for employee's fingers or hands to come in contact with the saws or knives while feeding the machine.

(12) Pan cooling towers.

(a) Where pan cooling towers extend to two or more floors, a lockout switch shall be provided on each floor in order that mechanics working on the tower may positively lock the mechanism against starting. Only one start switch shall be used in the motor control circuit.

(b) All unused sides of pan cooling tower conveyors shall be enclosed or effectively guarded to a height of 7 feet above each floor.

(c) Wherever a pan cooling tower conveyor passes through a floor, the opening shall be protected by a standard railing and toeboard as defined by the general safety and health standard, chapter 296-24 WAC and safety and health core rules, chapter 296-800 WAC, or by other equivalent protection.

(d) Wherever a pan conveyor passes over a main aisleway, regularly occupied work area, or passageway, the underside of the conveyor shall be completely enclosed to prevent pans, broken chains, or other material from falling in the aisleway, work area or passageway.

(e) Sprocket wheels of pan conveyors shall be enclosed so that accidental contact cannot be made at the point where the chain comes in contact with the sprocket.

(f) Wherever conveyor bars, flights, and attachments pass in opposite directions within 6 inches of each other, a sheet metal partition or screen with openings no larger than one-half inch shall be placed between the conveyor chains which run in opposite directions.

(13) Chocolate melting, refining, and mixing kettles. Each kettle shall be provided with a cover to enclose the top of the kettle. The bottom outlet of each kettle shall be of such size and shape that the operator cannot reach in to touch the revolving paddle or come in contact with the shear point between the paddle and the side of the kettle.

(14) Caddie, cover, and box stitchers (wire stitchers). A guard shall be mounted on the stitching head to prevent operators from getting fingers caught between the stitching head and the clincher block.

(15) Carton-wrapping and bundling machines. The end seal drums on carton and bundling machines shall be provided with guards.

(16) Carton and lining feeding machines. Cutting knives shall be provided with a hinged hood to cover the knives. These guards shall be electrically interlocked to stop the machine if they are removed.

(17) Peanut cooling trucks. Mechanically operated peanut cooling trucks shall have a grid-type cover over the entire top.

WAC 296-302-06513 Oil-burning equipment. (1) The storage and distribution of fuel oil in bakeries shall be arranged according to reference NFPA 31-1968 Standard for Installation of Oil Burning Equipment.

(2) Oil burners shall be of a type approved by Underwriters' Laboratories, Inc. (See WAC 296-800-360, using standards from outside organizations.)

(a) Each oil burner shall be equipped with an electric ignition or gas pilot.

(b) Oil burners shall be protected against flame failure and overflowing of oil by a quick-acting combustion safeguard operated by the main burner flame. The time interval between flame failure and fuel shutoff shall be short enough to prevent a dangerous accumulation of an explosive mixture or the entry of a dangerous amount of fuel oil into the heating system; with the exception that on ovens requiring 150,000 b.t.u. per hour or less any combustion safeguard listed by the Underwriters Laboratories, Inc., may be used. (See WAC 296-24-006, of the general safety and health standards.)

(c) The shutting off of the fuel supply shall be accomplished by stopping the individual burner pump equipped with a pressure cutoff valve, or by closing a suitable valve.

(d) Oil-fired ovens shall have dampers so arranged that a small amount of air is passed through the furnace at all times.

(e) Oil burners capable of being withdrawn from the furnace (for adjustment, etc.) shall be provided with an interlock which will prevent the burner from starting when in the withdrawn position.

(f) Preheating of oil, where necessary, shall be done by steam, hot water, or electric heater, and shall be thermostatically controlled. Heaters shall be substantially constructed with all joints made oil tight. Thermometers shall be installed at accessible locations to indicate the temperature of the heated oil. Heaters shall be bypassed or provided with means to prevent abnormal pressure.

(g) Oil burners equipped with mechanical means for supplying air shall have an interlock between the air pressure and the oil supply so that the burner cannot operate unless air for proper combustion is available.

(3) High-pressure atomizing oil burners shall be provided with a pressure cutoff valve between the pump and the nozzle.

(4) Air atomizing burners equipped with maximum-minimum or modulating controls, and which are arranged to have the ignition turned off after initial lighting has been accomplished, shall be equipped with a quick-acting flame safeguard directly actuated by the main flame of the burner.

(5) Mechanical atomizing burners of the rotary type shall be operated on the on-off principle and shall be equipped with safeguards actuated by the main flame.

(6) Evaporator-type burners shall be installed in such a way that provision is made to open the draft damper before oil can be admitted to the burners.

(7) Burners supplied by "vapofiers" shall be equipped with a protected gas or electric pilot. In combination vapofier-gas heating systems, the burner shall be protected in accordance with the requirements of WAC 296-302-06509.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-302-060, filed 5/9/01, effective 9/1/01; Order 74-17, § 296-302-060, filed 5/6/74.]

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-302-06513, filed 5/9/01, effective 9/1/01; Order 74-17, § 296-302-06513, filed 5/6/74.]

Chapter 296-303 WAC

SAFETY STANDARDS FOR LAUNDRY
MACHINERY AND OPERATIONS

WAC

296-303-01001 General industrial safety standards.

WAC 296-303-01001 General industrial safety standards. (1) General. These standards shall be augmented by the Washington state general safety and health standards, and any other regulations of general application which are or will be made applicable to all industries.

(2) Additional requirements. The employer shall comply with the provisions of the standards referenced in this section. In the event of any conflict between this section and WAC 296-303-015 through 296-303-040, the requirements of WAC 296-303-015 through 296-303-040 shall apply. The provisions of this chapter shall prevail in the event of conflict with, or duplication of, provisions contained in chapters 296-24, 296-62, and 296-800 WAC.

(a) Industrial lighting. American National Standard Practice for Industrial Lighting, ANSI A11.1-1965 (R-1970).

(b) Floor and wall openings, railings, and toeboards. American National Standard Safety Requirements for Floor and Wall Openings, Railings, and Toeboards, ANSI A13.1-1956.

(c) Identification of piping systems. American National Standard Safety Standard for Mechanical Power Transmission Apparatus, ANSI A13.1-1956.

(d) Mechanical power transmission apparatus. American National Standard Safety Standard for Mechanical Power Transmission Apparatus, ANSI B15.1-1971.

(e) Pressure piping—Power piping. American National Standard Code for Pressure Piping—Power Piping, ANSI B31.1-1967. Addenda to the American National Standard Code for Pressure Piping—Power Piping, ANSI B31.1.0a-1969.

(f) Sanitation. American National Standard Requirements for Sanitation in Places of Employment, ANSI Z4.1-1968.

(g) Local exhaust systems. American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1960.

(h) Gas appliances and gas piping. American National Standard for the Installation of Gas Appliances and Gas Piping, ANSI Z21.30-1964.

(3) WAC 296-24-012 and 296-800-360 shall apply where applicable to this industry.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-303-01001, filed 5/9/01, effective 9/1/01; Order 74-18, § 296-303-01001, filed 5/6/74.]

Chapter 296-304 WAC

SAFETY STANDARDS FOR SHIP REPAIRING,
SHIPBUILDING AND SHIPBREAKING

WAC

296-304-010 Scope and application.
296-304-06013 Health and sanitation.

WAC 296-304-010 Scope and application. (1) The provisions and standards of the general safety and health standards, chapters 296-24, 296-62 and 296-800 WAC, and such other codes and standards as are promulgated by the department of labor and industries which are applicable to all industries, shall be applicable in the ship repairing, shipbuilding, or shipbreaking industries whenever the employees are covered under the Washington State Industrial Safety and Health Act, chapter 49.17 RCW. The rules of this chapter and the rules of the aforementioned chapters 296-24, 296-62, and 296-800 WAC are applicable to all ship repairing, shipbuilding, and shipbreaking industries and operations, provided that such rules shall not be applicable to those operations under the exclusive safety jurisdiction of the federal government.

(2) The responsibility for compliance with these regulations is placed upon "employers" as defined in WAC 296-304-01001.

(3) It is not the intent of these regulations to place additional responsibilities or duties on owners, operators, agents or masters of vessels unless such persons are acting as employers, nor is it the intent of these regulations to relieve such owners, operators, agents or masters of vessels from responsibilities or duties now placed upon them by law, regulation or custom.

(4) The responsibilities placed upon the competent person herein shall be deemed to be the responsibilities of the employer.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-304-010, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 98-02-006, § 296-304-010, filed 12/26/97, effective 3/1/98. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-304-010, filed 10/20/95, effective 1/16/96. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-304-010, filed 1/18/95, effective 3/10/95; 89-11-035 (Order 89-03), § 296-304-010, filed 5/15/89, effective 6/30/89; Order 75-6, § 296-304-010, filed 3/10/75; Order 74-25, § 296-304-010, filed 5/7/74.]

WAC 296-304-06013 Health and sanitation. "Hazardous material" - A material with one or more of the following characteristics:

- Has a flash point below 140°F, closed cup, or is subject to spontaneous heating;
- Has a threshold limit value below 500 p.p.m. in the case of a gas or vapor, below 500 mg./m.³ for fumes, and below 25 m.p.p.c.f. in case of a dust;
- Has a single dose oral LD50 below 500 mg./kg.;
- Is subject to polymerization with the release of large amounts of energy;
- Is a strong oxidizing or reducing agent;
- Causes first degree burns to skin in short time exposure, or is systematically toxic by skin contact; or
- In the course of normal operations, may produce dusts, gases, fumes, vapors, mists, or smokes that have one or more of the above characteristics.

(1) No chemical product, such as a solvent or preservative; no structural material, such as cadmium or zinc coated steel, or plastic material; and no process material, such as welding filler metal; which is a hazardous material may be used until the employer has ascertained the potential fire, toxic, or reactivity hazards which are likely to be encountered in the handling, application, or utilization of such a material.

(2) In order to ascertain the hazards, as required by subsection (1) of this section, the employer shall obtain the following items of information which are applicable to a specific product or material to be used:

(a) The name, address, and telephone number of the source of the information specified in this section preferably those of the manufacturer of the product or material.

(b) The trade name and synonyms for a mixture of chemicals, a basic structural material, or for a process material; and the chemical name and synonyms, chemical family, and formula for a single chemical.

(c) Chemical names of hazardous ingredients, including, but not limited to, those in mixtures, such as those in: (i) Paints, preservatives, and solvents; (ii) alloys, metallic coatings, filler metals and their coatings or core fluxes; and (iii) other liquids, solids, or gases (e.g., abrasive materials).

(d) An indication of the percentage, by weight or volume, which each ingredient of a mixture bears to the whole mixture, and of the threshold limit value of each ingredient, in appropriate units.

(e) Physical data about a single chemical or a mixture of chemicals, including boiling point, in degrees Fahrenheit; vapor pressure, in millimeters of mercury; vapor density of gas or vapor (air=1); solubility in water, in percent by weight; specific gravity of material (water=1); percentage volatile, by volume, at 70°F.; evaporation rate for liquids (either butyl acetate or ether may be taken as 1); and appearance and odor.

(f) Fire and explosion hazard data about a single chemical or a mixture of chemicals, including flashpoint, in degrees Fahrenheit; flammable limits, in percent by volume in air; suitable extinguishing media or agents; special fire fighting procedures; and unusual fire and explosion hazard information.

(g) Health hazard data, including threshold limit value, in appropriate units, for a single hazardous chemical or for the individual hazardous ingredients of a mixture as appropriate, effects of overexposure; and emergency and first aid procedures.

(h) Reactivity data, including stability, incompatibility, hazardous decomposition products, and hazardous polymerization.

(i) Procedures to be followed and precautions to be taken in cleaning up and disposing of materials leaked or spilled.

(j) Special protection information, including use of personal protective equipment, such as respirators, eye protection, and protective clothing, and of ventilation, such as local exhaust, general, special, or other types.

(k) Special precautionary information about handling and storing.

(l) Any other general precautionary information.

(3) The pertinent information required by subsection (2) of this section shall be recorded either on United States Department of Labor Form LSB 00S-4, Material Safety Data Sheet, or on an essentially similar form which has been approved by the department of labor and industries. Copies of Form LSB 00S-4 may be obtained at any of the following regional offices of the occupational safety and health administration:

(a) Pacific region. (Arizona, California, Hawaii, and Nevada.)

10353 Federal Building, 450 Golden Gate Avenue, Box 36017, San Francisco, Calif. 94102.

(b) Region X, OSHA, (Alaska, Washington, Idaho, and Oregon), Federal Office Building, 909 First Avenue, Seattle, Washington 98174.

A completed MSDS form shall be preserved and available for inspection for each hazardous chemical on the work-site.

(4) The employer shall instruct employees who will be exposed to the hazardous materials as to the nature of the hazards and the means of avoiding them.

(5) The employer shall provide all necessary controls, and the employees shall be protected by suitable personal protective equipment against the hazards identified under subsection (1) of this section and those hazards for which specific precautions are required in WAC 296-304-020 through 296-304-04013.

(6) The employer shall provide adequate washing facilities for employees engaged in the application of paints or coatings or in other operations where contaminants can, by ingestion or absorption, be detrimental to the health of the employees. The employer shall encourage good personal hygiene practices by informing the employees of the need for removing surface contaminants by thorough washing of hands and face prior to eating or smoking.

(7) The employer shall not permit eating or smoking in areas undergoing surface preparation or preservation or where shiprepairing, shipbuilding, or shipbreaking operations produce atmospheric contamination.

(8) The employer shall not permit employees to work in the immediate vicinity of uncovered garbage and shall ensure that employees working beneath or on the outboard side of a vessel are not subject to contamination by drainage or waste from overboard discharges.

(9) Requirements of WAC 296-800-170, Chemical hazard communication program, will apply to shiprepairing, shipbuilding, and shipbreaking when potential hazards of chemicals and communicating information concerning hazards and appropriate protective equipment is applicable to an operation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-304-06013, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 98-02-006, § 296-304-06013, filed 12/26/97, effective 3/1/98. Statutory Authority: Chapter 49.17 RCW. 95-04-006, § 296-304-06013, filed 1/18/95, effective 3/10/95; 88-14-108 (Order 88-11), § 296-304-06013, filed 7/6/88; Order 76-7, § 296-304-06013, filed 3/1/76; Order 74-25, § 296-304-06013, filed 5/7/74.]

Chapter 296-305 WAC

SAFETY STANDARDS FOR FIRE FIGHTERS

WAC

296-305-01003	Scope and application.
296-305-01005	Definitions.
296-305-01009	Appeals.
296-305-01509	Management's responsibility.
296-305-01515	First-aid training and certification.
296-305-01517	First-aid kits.
296-305-04511	Elevated platforms.
296-305-05503	Summary of training requirements.
296-305-06005	Ground ladders.
296-305-06007	Electrical.
296-305-06503	General requirements.
296-305-06511	Indoor air quality.
296-305-06515	Hose drying towers.

WAC 296-305-01003 Scope and application. (1) The rules of this chapter shall apply with respect to any and all activities, operations and equipment of employers and employees involved in providing fire protection services which are subject to the provisions of the Washington Industrial Safety and Health Act of 1973 (chapter 49.17 RCW).

(2) The provisions of this chapter apply to all fire fighters and their work places, including the fire combat scene. Although enforcement of applicable standards will result from provable violations of these standards at the fire combat scene, agents of the department will not act in any manner that will reduce or interfere with the effectiveness of the emergency response of a fire fighting unit. Activities directly related to the combating of a fire will not be subjected to the immediate restraint provisions of RCW 49.17.130.

(3) In the development of this document many consensus standards of the industry were considered and evaluated as to adaptability to the Washington state fire service industry. Where adaptable and meaningful, the fire fighter safety elements of these standards were incorporated into this WAC. Chapter 296-305 WAC, shall be considered as the fire fighter safety standards for the state of Washington.

(4) The provisions of this chapter cover existing requirements that apply to all fire departments. All fire departments shall have in place their own policy statement and operating instructions that meet or exceed these requirements. This chapter contains state and/or federal performance criteria that fire departments shall meet.

(5) Unless specifically stated otherwise by rule, if a duplication of regulations, or a conflict exists between the rules regulating wildland fire fighting and other rules in the chapter, only the rules regulating wildland fire fighting shall apply to wildland fire fighting activities and equipment.

(6) The provisions of this chapter shall be supplemented by the provisions of the general safety and health standards of the department of labor and industries, chapters 296-24 (including Part G-2, Fire protection), 296-62 and 296-800 WAC. In the event of conflict between any provision(s) of this chapter and any provision(s) of the general safety and health standards, the provision(s) of this chapter shall apply.

(7) The provisions of this standard do not apply to industrial fire brigades, as defined in this chapter. Industrial fire brigades are covered under the provisions of chapter 296-24 WAC, Part G-2, Fire protection.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-01003, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-05-080, § 296-305-01003, filed 2/17/99, effective 6/1/99. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-01003, filed 5/10/96, effective 1/1/97.]

WAC 296-305-01005 Definitions. Unless the context indicates otherwise, words used in this chapter shall have the meaning given in this section.

Accident: An unexpected event that interrupts or interferes with the orderly progress of the fire department operations and may or may not include personal injury or property damage.

Accountability system: A system of fire fighter accountability that provides for the tracking and inventory of all members.

ACGIH: American Conference of Governmental Industrial Hygienists.

Aerial ladder: A ladder mounted on top of an apparatus, hydraulic or pneumatic controlled.

Aerial tower: Telescopic elevating platform or water tower assembly usually with a ladder on top of the section.

Aerial platform: A device consisting of two or more booms or sections with a passenger carrying platform assembly.

ANSI: American National Standards Institute.

Apparatus: A mobile piece of fire equipment such as a pumper, aerial, tender, automobile, etc.

Approved:

(1) A method, equipment, procedure, practice, tool, etc., which is sanctioned, consented to, confirmed or accepted as good or satisfactory for a particular purpose or use by a person, or organization authorized to make such a judgment.

(2) 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 Bureau of Mines, the provisions of chapter 296-800 WAC shall apply.

Audiogram: A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Authorized person: 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.

Beacon: A flashing or rotating light.

Bloodborne pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Blowup (wildfire): Sudden increase in fire intensity or rate of spread sufficient to preclude direct control or to upset existing control plans. Often accompanied by violent convection and may have other characteristics of a fire storm.

Chemical-protective clothing: Items made from chemical-resistant materials, such as clothing, hood, boots, and gloves, that are designed and configured to protect the wearer's torso, head, arms, legs, hands, and feet from hazardous materials. Chemical-protective clothing (garments) can be constructed as a single, or multi-piece, garment. The garment may completely enclose the wearer either by itself or in combination with the wearer's respiratory protection, attached or detachable hood, gloves, and boots.

Chief: The employer representative highest in rank who is responsible for the fire department's operation.

Combat scene: The site where the suppression of a fire or emergency exists.

Confinement: Those procedures taken to keep a material in a defined or local area.

Confined space: Means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and

(3) Is not designed for continuous employee occupancy.

Containment: The actions taken to keep a material in its container (e.g. stop the release of the material or reduce the amount being released.)

Contaminated: The presence or the reasonably anticipated presence of nuisance materials foreign to the normal atmospheres, blood, hazardous waste, or other potentially infectious materials on an item or surface.

Contaminated laundry: Laundry which has been soiled with blood or other potentially infectious materials or may contain contaminated sharps.

Contamination: The process of transferring a hazardous material from its source to people, animals, the environment, or equipment, which may act as a carrier.

dBA: A measure of noise level expressed as decibels measured on the "A" scale.

Deck pipe: A permanently mounted device which delivers a large stream of water.

Decontamination:

(1) The physical or chemical process of reducing and preventing the spread of contamination from persons or equipment used at a hazardous materials incident.

(2) The use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Department: Department of labor and industries.

Director of fire department: The chief or principle administrator of the fire department.

Director: The director of the department of labor and industries, or his/her designated representative.

Disinfection: A procedure which inactivates virtually all recognized pathogenic microorganisms, but not necessarily all microbial forms (example: bacterial endospores) on inanimate objects.

Drill tower: A structure which may or may not be attached to the station and which is principally used for training fire fighters in fire service techniques.

Driver: A person having satisfactorily completed the fire department's "requirements of driver" of a specific piece of fire apparatus.

Emergency: A sudden and unexpected event calling for immediate action.

Emergency incident: A specific emergency operation.

Emergency medical care: The provision of treatment to, and/or transportation of, patients which may include first-aid, cardiopulmonary resuscitation, basic life support, advanced life support, and other medical procedures that occur prior to arrival at a hospital or other health care facility.

Emergency operations: Activities of the fire department relating to rescue, fire suppression, emergency medical care, and special operations, including response to the scene of an incident and all functions performed at the scene.

Employee: 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 their personal labor for an employer under this chapter whether by way of manual labor or otherwise. Also see "Member."

Employer: 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.

Employer representative: A fire department officer authorized by the chief or director of the fire department to act in his/her behalf.

Engine (pumper): A piece of apparatus equipped with hose and a pump for the purpose of supplying water under pressure through hose lines.

Engineering control: Any procedure other than an administrative control that reduces exposures by modifying the source or reducing the exposure to an individual. Examples of engineering controls include the use of isolation, containment, encapsulation, sound absorbing materials for noise control, and ventilation.

Explosion proof equipment: Equipment enclosed in a case that is capable of withstanding an explosion or 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.

Fastest means available: The (nearest-closest) telephone, portable radio, mobile radio, telephone/radio dispatcher or any other mode of mechanical communication.

Fire apparatus: A fire department emergency vehicle used for rescue, fire suppression, or other specialized functions.

Fire boat: A fire department watercraft having a permanent, affixed fire fighting capability.

Fire combat training: Training received by fire fighters on the drill ground, drill tower, or industrial site to maintain the fire fighter's proficiency.

Fire department: An organization providing any or all of the following: Rescue, fire suppression, and other related activities. For the purposes of this standard the term "Fire Department" shall include any public, private, or military organization engaging in this type of activity.

Fire department facility: Any building or area owned, operated, occupied, or used by a fire department on a routine basis. This does not include locations where a fire department may be summoned to perform emergency operations or other duties, unless such premises are normally under the control of the fire department.

Fire department safety officer: The member of the fire department assigned and authorized as the principal safety

officer to perform the duties and responsibilities specified in this standard.

Fire fighter: A member of a fire department whose duties require the performance of essential fire fighting functions or substantially similar functions.

Fire retardant: Any material used to reduce, stop or prevent the flame spread.

Fly: Extendible sections of ground or aerial ladders.

Foot stand, ladder: Devices attached to inside of beams of ladders that when folded down, provide foot space.

Ground jack: Heavy jacks attached to frame of chassis of aerial-equipped apparatus to provide stability when the aerial portion of the apparatus is used.

Ground mobile attack: The activities of wildland fire fighting with hose lines being used by personnel working around a moving engine. See mobile attack.

Guideline: An organizational directive that establishes a standard course of action.

Halyard: Rope used on extension ladders for the purpose of raising or lowering fly section(s). A wire cable may be referred to as a halyard when used on the uppermost fly section(s) of three or four section extension ladders.

Hazard communication program: A procedure to address comprehensively the issue of evaluating the potential hazards of chemicals and communicating information concerning hazards and appropriate protective measures to employees. See WAC 296-800-170, Chemical Hazard Communication Program.

Hazardous area: The immediate area where members might be exposed to a hazard.

Hazardous atmosphere: Any atmosphere, either immediately or not immediately dangerous to life or health, which is oxygen deficient or which contains a toxic or disease-producing contaminant.

Hazardous condition: The physical condition or act which is causally related to accident occurrence. The hazardous condition is related directly to both the accident type and the agency of the accident.

Hazardous material: A substance (solid, liquid, or gas) that when released is capable of creating harm to people, the environment, and property.

Hazardous substances: Substances that present an unusual risk to persons due to properties of toxicity, chemical activity, corrosivity, etiological hazards of similar properties.

HEPA filtration: High efficiency particulate air filtration found in vacuum system capable of filtering 0.3 micron particles with 99.97% efficiency.

Hose bed: Portion of fire apparatus where hose is stored.

Hose tower: A vertical enclosure where hose is hung to dry.

Hot zone: Area immediately surrounding a hazardous materials incident, which extends far enough to prevent adverse effects from hazardous materials releases to personnel outside the zone. This zone is also referred to as the exclusion zone or the restricted zone in other documents.

Identify: To select or indicate verbally or in writing using recognized standard terms. To establish the identity of; the fact of being the same as the one described.

IDLH: Immediately dangerous to life and health.

Imminent hazard (danger): An act or condition that is judged to present a danger to persons or property and is so immediate and severe that it requires immediate corrective or preventative action.

Incident commander: The person in overall command of an emergency incident. This person is responsible for the direction and coordination of the response effort.

Incident command system (ICS): A system that includes: Roles, responsibilities, operating requirements, guidelines and procedures for organizing and operating an on-scene management structure.

Incipient (phase) fire: The beginning of a fire; where the oxygen content in the air has not been significantly reduced and the fire is producing minute amounts of water vapor, carbon dioxide, carbon monoxide and other gases; the room has a normal temperature and can be controlled or extinguished with a portable fire extinguisher or small hose, e.g., a kitchen stove fire.

Industrial fire brigade: An organized group of employees whose primary employment is other than fire fighting who are knowledgeable, trained and skilled in specialized operations based on site-specific hazards present at a single commercial facility or facilities under the same management.

Initial stage (initial action): Shall encompass the control efforts taken by resources which are first to arrive at an incident.

Injury: Physical damage suffered by a person that requires treatment by a practitioner of medicine (a physician, nurse, paramedic or EMT) within one year of the incident regardless of whether treatment was actually received.

Interior structural fire fighting: 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. See structural fire fighting.

Life safety or rescue rope: Rope dedicated solely for the purpose of constructing lines for supporting people during rescue, fire fighting, or other emergency operations, or during training evolutions.

Line: Rope when in use.

Live fire training: Any fire set within a structure, tank, pipe, pan, etc., under controlled conditions to facilitate the training of fire fighters under actual fire conditions.

Locking in: The act of securing oneself to a ladder by hooking a leg over a rung and placing top of foot against the other leg or against the ladder.

Manned station: See staffed station.

May: A permissive use or an alternative method to a specified requirement.

Member: A person involved in performing the duties and responsibilities of a fire department under the auspices of the organization. A fire department member may be a full-time or part-time employee or a paid or unpaid volunteer,

may occupy any position or rank within the fire department, and engages in emergency operations. Also see Employee.

Mobile attack: The act of fighting wildland fires from a moving engine.

Monitor: A portable appliance that delivers a large stream of water.

Mop up: The act of making a wildfire/wildland fire safe after it is controlled, such as extinguishing or removing burning materials along or near the control line, felling snags, trenching logs to prevent rolling.

NFPA: National Fire Protection Association.

NIIMS: National Interagency Incident Management System.

NIOSH: National Institute of Occupational Safety and Health.

Nondestructive testing: A test to determine the characteristics or properties of a material or substance that does not involve its destruction or deterioration.

Nonskid: The surface treatment that lessens the tendency of a foreign substance to reduce the coefficient of friction between opposing surfaces.

Occupational exposure: Means reasonably anticipated skin, eye, mucous membrane or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Officer: (1) Person in charge of a particular task or assignment.

(2) A supervisor.

OSHA: Occupational Safety and Health Administration.

Other potentially infectious materials (OPIM): (1) The following body fluids: Semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Outrigger: Manually or hydraulically operated metal enclosures and jacks which are extended and placed in contact with the ground to give the apparatus a wide, solid base to support different loads.

Overhauling: That portion of fire extinguishment involving discovery of hidden fires or smoldering material.

PASS: Personal alert safety system.

PEL: Permissible exposure limit.

Personal protective equipment (PPE): (1) The equipment provided to shield or isolate a person from the chemical, physical, and thermal hazards that may be encountered at a hazardous materials incident. Personal protective equipment includes both personal protective clothing and respiratory protection. Adequate personal protective equipment should

protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing.

(2) Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Place of employment: Any 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. For the purposes of this code, fireground and emergency scenes are also considered places of employment.

Platform: The portion of a telescoping or articulating boom used as a working surface.

Positive communication: Visual, audible, physical, safety guide rope, or electronic means which allows for two way message generation and reception.

PPE: Personal protective equipment.

Prefire training: The training of fire fighters in recognizing sources and locations of potential fires and the method of fire combat to be used.

Probable fatality: (1) An occupational injury or illness, which, by the doctor's prognosis, could lead to death.

(2) An occupational injury or illness, which by its very nature, is considered life threatening.

Protective clothing: Equipment designed to protect the wearer from heat and/or hazardous materials contacting the skin or eyes. Protective clothing is divided into five types:

- (1) Structural fire fighting protective clothing;
- (2) Liquid splash-protective clothing;
- (3) Vapor-protective clothing;
- (4) High temperature-protective proximity clothing; and
- (5) Wildland fire fighting clothing.

Note: See Protective ensemble.

Protective ensemble: Multiple elements of clothing and equipment designed to provide a degree of protection for fire fighters from adverse exposures to the inherent risks of structural fire fighting operations and certain other emergency operations. The elements of the protective ensemble are helmets, coats, trousers, gloves, footwear, interface components (hoods), and if applicable, personal alert system (PASS) devices, and self-contained breathing apparatus.

Proximity protective clothing: Radiant reflective protective garments configured as a coat and trousers, or as a coverall, and interface components that are designed to provide protection for the fire fighter's body from conductive, convective, and radiant heat.

Pumper: See engine.

Qualified: One who by possession of a recognized degree, certificate or professional standing, or who by knowledge, training or experience has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work or the project.

Rapid intervention team (RIT): On-scene team of at least two members designated, dedicated and equipped to effect an immediate rescue operation if the need arises.

RCW: Revised Code of Washington.

Rescue: Those activities directed at locating endangered persons at an emergency incident and removing those persons from danger.

Rescue craft: Any fire department watercraft used for rescue operations.

Respirator: A device designed to protect the wearer from breathing harmful atmospheres. See respiratory protection.

Respiratory equipment: Self-contained breathing apparatus designed to provide the wearer with a supply of respirable atmosphere carried in or generated by the breathing apparatus. When in use, this breathing apparatus requires no intake of air or oxygen from the outside atmosphere.

(1) **Respirators (closed circuit):** Those types of respirators which retain exhaled air in the system and recondition such air for breathing again.

(2) **Respirators (open circuit):** Those types of respirators which exhaust exhaled air to the outside of the mask into the ambient air.

(3) **Respirators (demand):** Those types of respirators whose input air to the mask is started when a negative pressure is generated by inhalation.

(4) **Respirators (pressure demand):** Those types of respirators which constantly and automatically maintain a positive pressure in the mask by the introduction of air when the positive pressure is lowered (usually from .018 psi to .064 psi) through the process of inhalation or leakage from the mask.

Respiratory protection: Equipment designed to protect the wearer from the inhalation of contaminants. Respiratory protection is divided into three types:

(1) Positive pressure self-contained breathing apparatus (SCBA);

(2) Positive pressure airline respirators;

(3) Negative pressure air purifying respirators.

Responding: The usual reference to the act of responding or traveling to an alarm or request for assistance.

Risk assessment: To set or determine the possibility of suffering harm or loss, and to what extent.

Safe and healthful working environment: The work surroundings of an employee with minimum exposure to unsafe acts and/or unsafe conditions.

Safety officer: Either the fire department safety officer or an assistant safety officer (see fire department safety officer).

Safety net: A rope or nylon strap net not to exceed 6-inch mesh, stretched and suspended above ground level at the base of drill tower, and at such a height that a falling body would be arrested prior to striking the ground.

Scabbard: A guard which will prevent accidental injury and covers the blade and pick of an axe or other sharp instrument when worn by the fire fighter.

SCBA: Self contained breathing apparatus.

Service testing: The regular, periodic inspection and testing of apparatus and equipment according to an established schedule and procedure, to insure that it is in safe and functional operating condition.

Shall: Mandatory.

Should: Recommended.

Signalman: A person so positioned that he/she can direct the driver when the drivers vision is obstructed or obscured.

SOP: Standard operating procedure or guidelines.

Staffed station: A fire station continuously occupied by fire fighters on scheduled work shifts. The staffed station may also serve as headquarters for volunteers.

Standard operating procedure or guidelines: An organizational directive that establishes a standard course of action. See SOP.

Station (fire station): Structure in which fire service apparatus and/or personnel are housed.

Structural fire fighting: The activities of rescuing, fire suppression, and property conservation involving buildings, enclosed structures, vehicles, vessels, or similar properties that are involved in a fire or emergency situation. See interior structural fire fighting.

Structural fire fighting protective clothing: This category of clothing, often called turnout or bunker gear, means the protective clothing normally worn by fire fighters during structural fire fighting operations. It includes a helmet, coat, pants, boots, gloves, and a hood. Structural fire fighters' protective clothing provides limited protection from heat but may not provide adequate protection from the harmful gases, vapors, liquids, or dusts that are encountered during hazardous materials incidents.

Support function: A hazardous chemical operation involving controlled chemical uses or exposures in nonflammable atmospheres with minimum threats in loss of life, personnel injury, or damage to property or to the environment. Functions include decontamination, remedial cleanup of identified chemicals, and training.

Support function protective garment: A chemical-protective suit that meets the requirements of NFPA Standard on Support Function Garments, 1993.

Tail/running board: Standing space on the side or rear of an engine or pumper apparatus.

Team: Two or more individuals who are working together in positive communication with each other through visual, audible, physical, safety guide rope, electronic, or other means to coordinate their activities and who are in close proximity to each other to provide assistance in case of emergency.

Tillerman: Rear driver of tractor-trailer aerial ladder.

Trench: A narrow excavation made below the surface of the ground. The depth is generally greater than the width, but the width of a trench is not greater than 15 feet.

Turnout clothing: See structural fire fighting protective clothing.

Turntable: The rotating surface located at the base of an aerial ladder, or boom, on aerial apparatus.

Universal precaution: An approach to infection control. According to the concept of universal precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Vapor barrier: 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.

Variance: An allowed or authorized deviation from specific standard(s) when an employer substitutes measures which afford an equal degree of safety. Variances are issued as temporary or permanent with interim measures issued, when requested, until a determination or decision is made.

Vessel: Means every description of watercraft or other artificial contrivance used or capable of being used as a means of transportation on water, including special-purpose floating structures not primarily designed for or used as a means of transportation on water.

WAC: Washington Administrative Code.

Wheel blocks (chocks): A block or wedge placed under a wheel to prevent motion.

Wildfire: An unplanned and unwanted fire requiring suppression action; an uncontrolled fire, usually spreading through vegetative fuels and often threatening structures.

Wildland fire: A fire burning in natural vegetation that requires an individual or crew(s) to expend more than one hour of labor to confine, control and extinguish. Agencies may substitute crews to avoid the one hour bench mark or increase crew size to complete the job in less than one hour. One hour was chosen as the maximum time that individuals should work in high temperatures in structural protective clothing.

Wildland fire fighting enclosure: A fire apparatus enclosure with a minimum of three sides and a bottom.

WISHA: Washington Industrial Safety Health Act.

Work environment: The surrounding conditions, influences or forces to which an employee is exposed while working.

Workplace: See place of employment.

WRD: WISHA regional directive.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-01005, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-05-080, § 296-305-01005, filed 2/17/99, effective 6/1/99. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-01005, filed 5/10/96, effective 1/1/97.]

WAC 296-305-01009 Appeals. Any party authorized to appeal from an action of the department as set forth in RCW 49.17.140(3), may do so by filing a notice of appeal in writing. The appeal must contain the recommended subject matter, as noted below, by serving a copy of such notice of appeal either in person or by mail upon the assistant director of the Consultation and Compliance Services Division, (7273 Linderson Way, Tumwater, Washington) P.O. Box 44600, Olympia, Washington 98504-4600. The appeal must be sent to the department within fifteen working days of the communication of the notice.

The notice of appeal should contain:

- (1) The name and address of the appealing party and his/her representative if any;
- (2) The place where the alleged safety violation occurred;
- (3) A statement identifying the order, decision or citation appealed from, by report number and date of issuance;

(4) The grounds upon which the appealing party considers such order, decision, or citation to be unjust or unlawful;

(5) A statement of facts in support of each grounds stated;

(6) The relief sought, including the specific nature and extent;

(7) A statement that the person signing the notice of appeal has read it and to the best of his/her knowledge, information and belief there is good ground to support it. A notice of appeal may be signed by the party or by his/her authorized representative.

References:

WAC 296-800-350, Inspections, citations and appeals—Contents RCW 49.17.140(3).

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-01009, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-01009, filed 5/10/96, effective 1/1/97.]

WAC 296-305-01509 Management's responsibility.

(1) It shall be the responsibility of management to establish, supervise, maintain, and enforce, in a manner which is effective in practice:

(a) A safe and healthful working environment, as it applies to noncombat conditions or to combat conditions at a fire scene after the fire has been extinguished, as determined by the officer in charge.

(b) An accident prevention program as required by this chapter.

(c) Programs for training employees in the fundamentals of accident prevention.

(d) Procedures to be used by the fire department safety officer and incident commander to ensure that emergency medical care is provided for members on duty.

(e) An accident investigation program as required by this chapter.

(2) The fire department shall be responsible for providing suitable expertise to comply with all testing requirements in this chapter. Such expertise may be secured from within the fire department, from equipment and apparatus manufacturers, or other suitable sources.

(3) Members who are under the influence of alcohol or drugs shall not participate in any fire department operations or other functions. This rule does not apply to persons taking prescription drugs as directed by a physician or dentist providing such use does not endanger the worker or others.

(4) Alcoholic beverages shall not be allowed in station houses, except at those times when station houses are used as community centers, with the approval of management.

(5) A bulletin board or posting area exclusively for safety and health and large enough to display the required safety and health posters. The WISHA poster (WISHA form F416-081-000) and other safety education material shall be provided. A bulletin board of "white background" and "green trim" is recommended.

(6) The fire department shall develop and maintain a hazard communication program as required by WAC 296-800-170, which will provide information to all employees relative to hazardous chemicals or substances to which they

are exposed, or may routinely be exposed to, in the course of their employment.

(7) Personnel.

(a) The employer shall assure that employees who are expected to do interior structural fire fighting are physically capable of performing duties that may be assigned to them during emergencies.

(b) The employer shall not permit employees with known physical limitations reasonably identifiable to the employer, for example, heart disease or seizure disorder, to participate in structural fire fighting emergency activities unless the employee has been released by a physician to participate in such activities.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-01509, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040, 99-05-080, § 296-305-01509, filed 2/17/99, effective 6/1/99. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-01509, filed 5/10/96, effective 1/1/97.]

WAC 296-305-01515 First-aid training and certification. (1) All fire fighters except directors of fire departments and the directors' designated personnel, shall have as a minimum first-aid training as evidenced by a current, valid first-aid card, EMT or First Responder certification.

(2) New fire fighters shall have such first-aid training within 90 days of the date of their employment or enroll for training in the next available class for which they are eligible.

(3) First-aid training and certification for other employees and directors of fire departments shall conform to the requirements of WAC 296-800-150.

(4) Fire service duties include exposure to bloodborne pathogens. The requirements of this section and chapter 296-62 WAC, Part J, Biological Agents, shall apply.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-01515, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-01515, filed 5/10/96, effective 1/1/97.]

WAC 296-305-01517 First-aid kits. (1) To assure the emergency medical care of the fire fighters there shall be present at each emergency incident at least the following items:

- 1 (one) utility scissors, EMT-type
- 1 CPR barrier
- 3 (three) rolls 1 inch adhesive tape
- 6 (six) 4" x 4" sterile, individually wrapped gauze pads
- 4 (four) combination pads, sterile, individually wrapped
- 4 (four) soft roller bandages, assorted size, sterile, individually wrapped cling type
- 2 (two) burn sheets, sterile, individually wrapped
- 2 (two) triangular bandages
- 1 (one) multi-trauma dressing, sterile
- 2 (two) supply disposable gloves
- 2 (two) wire splints or equivalent
- (2) All fire stations shall maintain a first-aid kit. The kit shall contain at least the following items:
 - 6 (six) 4" x 4" sterile, individually wrapped gauze pads
 - 4 (four) combination pads, sterile, individually wrapped
 - 2 (two) rolls 1 inch adhesive tape
 - 4 (four) soft roller bandages, assorted size, sterile, individually wrapped cling type

2 (two) triangular bandages

1 (one) utility scissors, EMT-type

1 (one) pair tweezers

1 (one) package assorted adhesive bandages

(3) All fire apparatus shall contain a first-aid kit as described in WAC 296-800-150.

(4) All fire departments providing emergency medical services to the public shall conform to the requirements of chapter 18.73 RCW Emergency Care and Transportation Services (and if applicable, chapter 248-17 WAC, Ambulance Rules and Regulations) which require additional first-aid equipment.

Additional references: Chapter 296-800 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-01517, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-01517, filed 5/10/96, effective 1/1/97.]

WAC 296-305-04511 Elevated platforms. (1) Elevated platform system design requirements:

(a) The platform shall have a minimum floor area of fourteen square feet.

(b) The platform shall be provided with a guard railing. The guard railing shall be 42 to 45 inches high on all sides.

(c) The railing shall be constructed so that there is no opening below it greater than 19 inches.

(d) There shall be two gates below the top railing, each of which shall be provided with suitable safety latches.

(e) A kick plate not less than four inches high shall be provided around the floor of the platform.

(f) Drain openings shall be provided to prevent water accumulation on the platform.

(g) A heat-protective shield shall be provided on the platform for the protection of the operator.

(h) Hydraulic or pneumatic systems shall have a minimum bursting strength of at least four times the operating pressure for which the system is designed.

(i) The basic structural elements of the hydraulic or articulating boom shall have a safety factor of three.

(j) Each hydraulic or pneumatic system for the boom shall be equipped with a pilot operated check valve or other appropriate device to prevent free fall in the event of hydraulic failure.

(2) Requirements related to the controlling of elevated platforms:

(a) A control or device shall be provided at both the lower control station and the platform control station to allow either operator to completely deactivate the platform controls.

(b) During the deactivation of the platform controls, the lower controls shall remain operable.

(c) A plate shall be located at the platform control unit or units listing the following information:

- (i) Model and serial number of the manufacturer;
- (ii) Rated capacity of the platform;
- (iii) Operating pressure of the hydraulic or pneumatic systems or both;
- (iv) Caution or restriction of operation or both; and
- (v) Control instructions.

(vi) This plate shall be clearly visible to the operator at the lower control position.

(d) There shall be an operator at the lower controls at all times while the fire fighter is in the bucket.

(e) The operator at the lower controls shall make certain the fire fighter on the platform is secured by his life belt, or equivalent, before raising the platform.

(3) Testing of elevated platforms and related apparatus shall be conducted annually.

(a) Testing of elevated platforms and related apparatus shall be in accordance with NFPA, Standard for Testing Fire Department Aerial Ladders 1914, 1991 edition.

(b) It is recommended that the boom section as well as the support section of the apparatus which supports the turntable should be nondestructively tested by a certified testing agency every five years.

(c) After any accident that causes structural damage, testing shall be performed and all defects detected shall be corrected before the apparatus is returned to service.

(d) Elevated platform testing shall follow recommendations of the current National Fire Code.

(e) Fire apparatus elevated platforms shall be positioned for the greatest stability feasible at the fire scene.

(4) A two-way voice communication system shall be installed between the platform and the lower control station.

(5) Automotive apparatus used in conjunction with elevated platforms shall be used in accordance with the following:

(a) Hand or air brakes shall be set before the platform is operated.

(b) Jacks or outriggers shall be used if the platform is to be elevated.

(c) Wheel blocks shall also be used when the platform is in operation unless the type of apparatus is one that has wheels that lift off the ground when the jacks or outriggers are engaged.

(d) Ground plates shall be used under the outriggers or jacks.

(e) Sand shall be put under jacks and outriggers when operating on ice or snow.

(f) When working on or near energized electrical lines, the fire department shall develop operational procedures for observing the following minimum working clearances:

(i) For lines rated 50 kv or below, the minimum clearance shall be ten feet.

(ii) For lines rated over 50 kv, the minimum clearance shall be ten feet plus 0.4 inch for each 1 kv.

(iii) For low voltage lines (operating at 750 volts or less), the work shall be performed in a manner to prevent the fire fighters contacting the energized conductor.

(6) Appliances mounted on elevated platforms. Platform mounted monitors shall be operated in accordance with the manufacturer's instructions.

Additional References: WAC 296-24-880.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-04511, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-04511, filed 5/10/96, effective 1/1/97.]

WAC 296-305-05503 Summary of training requirements. (1) Training on hearing conservation shall conform to chapter 296-62 WAC, Part K, and WAC 296-305-02005.

(2) Training on medical procedures shall conform to WAC 296-305-02501.

(3) Training on respiratory equipment shall conform to chapter 296-62 WAC, Part E, Respiratory protection, and WAC 296-305-04001.

(4) Training on employee right-to-know procedures shall conform to WAC 296-800-170, chemical hazard communication program.

(5) Training on overhaul procedures and operations shall conform to WAC 296-305-05001.

(6) Training on wildland fires shall conform to WAC 296-305-07001 through 296-305-07019.

(7) Training on confined space entry and/or rescue shall conform to chapter 296-62 WAC, Part M, Permit-required confined spaces and WAC 296-305-05003.

(8) Live fire training in structures shall conform to NFPA 1403 and this section.

(9) The employer shall provide training and education for all members commensurate with those duties and functions that members are expected to perform. Such training and education shall be provided to members before they perform emergency activities. Fire service 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 department.

(10) The employer shall assure that training and education is conducted frequently enough to assure that each member is able to perform the member's assigned duties and functions satisfactorily and in a safe manner so as not to endanger members or other employees. All members shall be provided with training at least annually. In addition, members who are expected to perform interior structural fire fighting shall be provided with an education session or training at least quarterly.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-05503, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-05503, filed 5/10/96, effective 1/1/97.]

WAC 296-305-06005 Ground ladders. This section establishes the minimum requirements for the construction, care and use of the common types of ladders used in fire combat.

(1) Ladder locks or pawls on extension ladders shall be so fastened or secured to the beams that vibration and use will not cause loosening of bolts and nuts.

(a) Pawls or ladder locks shall be so constructed that the hook portion of the pawl that engages the rung shall have sufficient bearing surface or area to prevent the hook from cutting into rungs when engaged.

(b) Such hooks shall be properly finished to eliminate sharp edges and points.

(2) Staypoles or tormenters shall be furnished on all extension ladders extending over forty feet. Staypole or tormenters spikes shall not project beyond the butt of the ladder when nested.

(3) All ladders shall be stored in a manner to provide ease of access for inspection, and to prevent danger of accident when withdrawing them for use.

(4) Fire fighters shall climb and descend ground ladders with the fly in, for safety purposes, when not in conflict with the manufacturer's recommendations. Even when ladders are routinely used in the fly out configuration, in adverse conditions fire fighters shall be permitted to climb and descend ground ladders with the fly in to assure secure footing.

(5) All ladders regardless of type shall be inspected thoroughly after each use. Records shall be kept of the inspections and repairs.

(6) The following metal ladder components shall be checked:

(a) Rungs for welds, damage or weakness caused by overloading or bumping against other objects, looseness and cracks, etc.

(b) Beams for welds, rivets and bolts, signs of strain or metal fatigue, and deformation from heat or overloading.

(c) Bolts and rivets for tightness.

(d) Butt spurs for excessive wear or other defects.

(e) Halyards for the same defects listed for wood ladder halyards and cable halyards, for fraying or breaking.

(f) Heat sensor label, when provided, for change indicating heat exposure.

(7) The following wood ladder components shall be checked:

(a) Bolts for snugness and tightness without crushing the wood.

(b) Beams for dark streaks; when a wood ground ladder develops dark streaks in the beams, the ladder shall be removed from service and service tested as specified in this chapter, prior to further use.

(c) Protective varnish finish for damage or wear, at least once a month and redone annually or at such frequency as specified by the manufacturer. If the protective finish becomes charred or blistered, the ladder shall be removed from service and service tested as specified in this chapter, prior to further use.

(8) Methods of fastening ladder halyards, either of wire or fibrous material, shall be in a manner that the connection is stronger than the halyard.

(9) Any defect noted in above visual inspection shall be corrected prior to testing.

(10) Every portable ladder shall be tested following the correction of defects disclosed by the visual inspections.

(11) New ground ladders purchased after the effective date of this chapter shall be constructed and certified in accordance with the requirements of NFPA Standard 1931, 1994 edition.

(12) All fireground ladders shall be inspected and maintained in accordance with the requirements of the 1994 edition of NFPA 1932. When metal ground ladders are tested, they shall be tested in accordance with the strength service testing procedures of the 1984 edition of NFPA 1932.

(a) Extension ladders that were constructed prior to the adoption of the 1984 edition of NFPA 1931, may, when tested in accordance with this chapter, be tested with a minimum test load of 400 pounds and a preload of 300 pounds. Ladders tested under this exception shall be used with a maximum

load limit of 500 pound distributed or 400 pound concentrated. Ladders shall be tested in the configuration they are used.

(b) Additional requirements for wooden ground ladders; whenever any wood ground ladder has been exposed or is suspected of having been exposed to direct flame contact the ladder shall be service tested as specified in section 5-2 of NFPA Standard 1932, 1984 edition.

Note 1: Hardness testing and eddy current NDE testing is not required in the fire department annual maintenance inspection unless the individual ladder has been subjected to a high heat exposure which could have annealed the metal and diminished the structural integrity. The ladder manufacturer's recommendations should be followed with respect to hardness and eddy current testing.

Note 2: Testing should follow the recommended procedures taught by Washington State Fire Protection Bureau.

Additional references: Chapter 296-24 WAC, Part J-1 and WAC 296-800-290.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-06005, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-05-080, § 296-305-06005, filed 2/17/99, effective 6/1/99. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-06005, filed 5/10/96, effective 1/1/97. Statutory Authority: Chapter 49.17 RCW. 88-14-108 (Order 88-11), § 296-305-06005, filed 7/6/88. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-305-06005, filed 11/30/83; Order 77-20, § 296-305-06005, filed 10/18/77 and Emergency Order 77-24, filed 11/17/77, effective 12/17/77.]

WAC 296-305-06007 Electrical. (1) Temporary lighting with the use of 110 - 120 VAC equipment.

(a) All lighting equipment shall be provided with heavy duty flexible cords with SO or SJ jackets or equivalent. All lighting equipment shall be used with heavy duty flexible extension cords with 12-3 conductors with SO or SJ jackets or equivalent.

(b) Electrical cords shall have weather tight bodies and caps, 20 amp rated at 120 VAC with appropriately sized plugs and sockets.

(c) Temporary lights that are used in moist, damp, and/or other hazardous locations shall be approved for the purpose.

(d) Temporary lights shall be constructed so that water cannot enter or accumulate in wireways, lampholders or other electrical parts.

(e) Temporary lights that are used in moist and/or other hazardous locations shall have 120 VAC single-phase 15 and/or 20 amp in-line resettable ground fault circuit interrupters.

(f) Temporary lights shall be equipped with a handle and be insulated from heat and possible electrical shock.

(g) Temporary lights shall not be suspended by their electrical cords unless cords and lights are designed and labeled for this means of suspension.

(h) Temporary lights shall be protected by guards of a nonconductive or insulated material to prevent accidental contact with the bulb.

(2) 120 VAC cord reels shall be approved for use in damp or hazardous locations.

(a) Bodies and caps shall be weather tight, 20 amp rated at 120 VAC.

(b) Cords on cord reels that do not exceed 150 feet in length shall be SO or SJ type jackets or equivalent.

(c) Cords that exceed 150 feet in length on reels, shall have 10-3 conductors.

(d) Cord reels that are not permanently mounted on a vehicle shall be insulated from the ground when in use.

(3) Twelve volt portable type hand lanterns shall be constructed of molded composition or other type approved for the purpose.

(a) Portable hand lanterns used in moist and/or other hazardous locations shall be operated at a maximum of 12 volts.

(b) Hand lamps shall be equipped with a handle and a substantial guard over the bulb and attached to the lampholder.

(4) Portable and vehicle-mounted generators.

(a) Portable generators. Under the following conditions, the frame of a portable generator shall not be required to be grounded and shall be permitted to serve as the grounding electrode for a system supplied by the generator:

(i) The generator supplies only equipment mounted on the generator or cord-connected and plug-connected equipment through receptacles mounted on the generator, or both, and

(ii) The noncurrent-carrying metal part of equipment and the equipment grounding conductor terminals of the receptacles are bonded to the generator frame.

(b) Vehicle-mounted generators. Under the following conditions, the frame of a vehicle may serve as the grounding electrode for a system supplied by a generator located on the vehicle:

(i) The frame of the generator is bonded to the vehicle frame; and

(ii) The generator supplies only equipment located on the vehicle and/or cord-connected and plug-connected equipment through receptacles mounted on the vehicle or on the generator; and

(iii) The noncurrent-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles are bonded to the generator frame.

Additional references: Article 250 National Electrical Code. Chapter 296-24 WAC, Part L and WAC 296-800-280.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-06007, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 99-05-080, § 296-305-06007, filed 2/17/99, effective 6/1/99. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-06007, filed 5/10/96, effective 1/1/97. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-305-06007, filed 11/30/83; Order 77-20, § 296-305-06007, filed 10/18/77 and Emergency Order 77-24, filed 11/17/77, effective 12/17/77.]

WAC 296-305-06503 General requirements. (1) Stations and administrative offices shall comply with the requirements of the general occupational health standards, WAC 296-800-210, Lighting in the workplace.

(2) Every new fire station built after the effective date of this chapter, whether manned or unmanned, shall be equipped with an approved emergency lighting system that will light dormitories, hallways, and apparatus bay areas in case of electrical power failure.

(3) No new fire station or new addition to an existing fire station, shall incorporate sliding poles or slides in their design or construction.

(4) The requirements of chapter 296-24 WAC, Part B-2, Window washing, shall be followed when employees are engaged in window washing operations.

(5) All new fire stations and other new fire department facilities which contain sleeping quarters shall be fully protected with automatic sprinkler systems.

(6) All existing fire stations and existing fire department facilities with sleeping quarters, that undergo a major renovation that consists of more than sixty percent of the assessed evaluation of the existing structure shall be fully protected with automatic sprinkler systems.

(7) Eye protection shall be worn when charging, changing or adding fluid to storage batteries. Personnel that will be charging storage batteries shall be qualified to perform this function by the employer. See WAC 296-24-23015.

(8) Stairway tread shall be of a nonskid design. Examples of nonskid: Grip strut grating, serrated edge grating, metal grating, aluminum safety tread, abrasive metal stair tread, or pressure sensitive nonskid type.

(9) In existing facilities where sliding poles or slides are used, the pole or slide hole shall be guarded in such a manner as to prevent anyone from walking directly into the pole or slide hole opening.

(10) To absorb the shock to sliding employees, the bottom of all slide poles or slides shall have a three-foot diameter cushioned rubber mat, or its equivalent.

(11) Nothing shall be stored or placed at the bottom of a pole or slide hole for a radius of three feet from the pole. Doors shall not protrude within three feet of the pole or slide.

(12) Stair and landing protection: Stairways, guardrails, landings, and handrails shall be constructed to the requirements of chapter 19.27 RCW the State Building Code Act, and chapter 296-24 WAC, Part J-1.

(13) A standard guard railing for a landing platform shall include a toeboard, which is a vertical barrier, at floor level erected along exposed edges of a floor opening, wall opening, platform, runway or ramp to prevent falls of material.

(14) Any new facility, or addition, alteration, or repair to an existing facility shall be in compliance with chapter 19.27 RCW, the State Building Code Act.

(15) New stations containing a kitchen, and station kitchens remodeled after the date of this chapter, shall have an alarm activated service disconnect of fixed cooking appliances.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-06503, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-06503, filed 5/10/96, effective 1/1/97. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-305-06503, filed 11/30/83; Order 77-20, § 296-305-06503, filed 10/18/77 and Emergency Order 77-24, filed 11/17/77, effective 12/17/77.]

WAC 296-305-06511 Indoor air quality. Air quality shall be consistent with WAC 296-62-075 through 296-62-07515, Air contaminants and WAC 296-800-240, Environmental tobacco smoke.

Note: For extended work shifts all eight-hour PEL's shall be time-weighted to adjust for additional worker exposure during extended work shifts.

(1) If indoor air monitoring indicates over-exposure to contaminant PEL's, engineering controls shall be utilized to reduce fire fighter exposure to the lowest feasible level.

(2) All fixed internal combustion equipment such as, but not limited to emergency generators, shall be effectively exhausted to the exterior of the fire stations.

(3) All facilities dedicated to the maintenance and repair of internal combustion equipment shall have means for effective ventilation to the exterior of the building.

(4) All fire stations built after January 1, 1997, shall be designed and constructed to conform to ACGIH ventilation recommended criteria for exhaust of internal combustion engines.

Additional reference: Industrial Ventilation Manual of Recommended Practices ISBN No.: 0-936712-65-1.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-06511, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-06511, filed 5/10/96, effective 1/1/97; Order 77-20, § 296-305-06511, filed 10/18/77 and Emergency Order 77-24, filed 11/17/77, effective 12/17/77.]

WAC 296-305-06515 Hose drying towers. (1) The floor openings on hose tower platforms shall be equipped with a forty-two inch guardrail with mid-rail and shall be capable of withstanding a force of 250 pounds applied in any direction at any point on the top rail. The work platform shall be equipped with toeboards.

(2) The requirements for offset ladder platforms and ladder cage guards, when ladders extend beyond twenty feet, shall apply to hose drying towers.

(3) Ropes and attachments used to hoist hose in the hose towers shall have a breaking strength of 1500 pounds for a safe load strength of 300 pounds (five-to-one safety factor).

(4) Approved head protection shall be worn by all persons in the hose tower whenever hose handling/hanging operations are taking place.

(5) Ropes utilizing a pulley block shall be appropriately sized for the sheave to prevent possible jamming or damage to the rope.

Additional reference: Chapter 296-24 WAC, Part J-1 and chapter 296-800 WAC.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-305-06515, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 96-11-067, § 296-305-06515, filed 5/10/96, effective 1/1/97; Order 77-20, § 296-305-06515, filed 10/18/77 and Emergency Order 77-24, filed 11/17/77, effective 12/17/77.]

Chapter 296-307 WAC

SAFETY STANDARDS FOR AGRICULTURE

WAC

296-307-018	What are the employer's responsibilities?
296-307-039	First-aid rule summary.
296-307-03905	Make sure that first-aid trained personnel are available to provide quick and effective first aid.
296-307-03910	Make sure first-aid training contains required subjects.
296-307-03915	Document your first-aid training.
296-307-03920	Make sure appropriate first-aid supplies are readily available.
296-307-03925	Provide a first-aid station when required.
296-307-042	Repealed.
296-307-07013	What rules apply to vehicles used to transport employees?
296-307-12040	Pesticide safety training—Standards for workers—40 CFR, § 170.130.

296-307-13025	Pesticide safety training—Standards for pesticide handlers—40 CFR, § 170.230.
296-307-14505	What records must an employer keep for pesticide applications?
296-307-550	Employer chemical hazard communication—Introduction.
296-307-55005	Develop, implement, maintain, and make available a written Chemical Hazard Communication Program.
296-307-55010	Identify and list all the hazardous chemicals present in your workplace.
296-307-55015	Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used.
296-307-55020	Make sure material safety data sheets are readily accessible to your employees.
296-307-55025	Label containers holding hazardous chemicals.
296-307-55030	Inform and train your employees about hazardous chemicals in your workplace.
296-307-55035	Follow these rules for laboratories using hazardous chemicals.
296-307-55040	Follow these rules for handling chemicals in factory-sealed containers.
296-307-55045	Translate certain chemical hazard communication documents upon request.
296-307-55050	Attempt to obtain a material safety data sheet (MSDS) upon request.
296-307-55055	Items or chemicals exempt from the rule, and exemptions from labeling.
296-307-55060	Definitions.
296-307-570	Lighting rule.
296-307-57005	Provide and maintain adequate lighting.
296-307-590	Environmental tobacco smoke in the office.
296-307-59005	Control tobacco smoke in your building.
296-307-59010	Control tobacco smoke that comes in from the outside.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-307-042	Must an employer provide first-aid kits? [Recodified as § 296-307-042. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-048, § 296-306A-042, filed 10/31/96, effective 12/1/96.] Repealed by 01-17-033, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
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WAC 296-307-018 What are the employer's responsibilities? You must:

- (1) Provide a safe and healthful working environment.
- (2) Ensure that employees do not use defective or unsafe tools and equipment, including tools and equipment that may be furnished by the employer.
- (3) Implement a written accident prevention program as required by these standards.
- (4) Implement a hazard communication program as required by WAC 296-307-550.
- (5) Establish a system for reporting and recording accidents on the OSHA 200 log. (See chapter 296-27 WAC.)
- (6) Provide safety education and training programs.
- (7) Implement the requirements of WAC 296-62-074 through 296-62-07451 to ensure the safety of employees who are exposed to cadmium in the workplace.
- (8) Implement the requirements of WAC 296-62-145 through 296-62-14529 to ensure the safety of employees who are exposed to confined spaces in the workplace.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-018, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 98-24-096, § 296-307-018, filed 12/1/98, effective 3/1/99; Recodified as § 296-307-018. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-048, § 296-306A-018, filed 10/31/96, effective 12/1/96.]

WAC 296-307-039 First-aid rule summary. Your responsibility: Make sure first-aid trained personnel are available to provide quick and effective first aid.

You must:

Make sure that first-aid trained personnel are available to provide quick and effective first aid.

WAC 246-307-03905.

Make sure first-aid training contains required subjects.

WAC 296-307-03910.

Keep current and document your first-aid training.

WAC 296-307-03915.

Make sure appropriate first-aid supplies are readily available.

WAC 296-307-03920.

Provide a first-aid station when required.

WAC 296-307-03925.

Note: Additional requirements relating to first-aid are also located in the following sections:

- WAC 296-307-07013(12), What rules apply to vehicles used to transport employees?
- WAC 296-307-16175, First-aid requirements for operators of temporary worker housing.
- WAC 296-307-16380, First-aid requirements for operators of cherry harvest camps.

Definitions:

First aid: The extent of treatment you would expect from a person trained in basic first aid, using supplies from a first-aid kit.

Emergency medical service:

Medical treatment and care given at the scene of any medical emergency or while transporting any victim to a medical facility.

You can get copies of these rules by calling 1-800-4BE SAFE (1-800-423-7233), or by going to <http://www.lni.wa.gov>.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-039, filed 8/8/01, effective 9/1/01; Recodified as § 296-307-039. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-048, § 296-306A-039, filed 10/31/96, effective 12/1/96.]

WAC 296-307-03905 Make sure that first-aid trained personnel are available to provide quick and effective first aid. You must:

• Choose one of the following two options to make sure that your employees have access to personnel who are trained in first aid.

Option 1:

Make sure first-aid trained persons are in your workplace to help your employees if they become hurt or ill on the job by doing the following:

- Make sure that:

♦ Each person in charge of employees has first-aid training; or

♦ Another person with first-aid training is present or available to your employees, whenever you have 2 or more employees present.

Note: This rule is met if persons other than an employee, such as the farm operator or spouse, hold a current first-aid certificate and are available during working hours.

EXCEPTION: This rule does not apply to individual employees whose duties require them to work alone at isolated workstations. However, employees working alone must be checked at intervals by some method agreed upon by you and the employee.

- Adequately post emergency telephone numbers in your workplace.

Option 2:

Develop and maintain a written first-aid response plan for your workplace. If you choose this option, you must do **all** of the following:

- Determine how many, if any, employees should be trained in first aid, based on the following factors:

♦ What type(s) of occupational hazards are present in your workplace?

♦ How likely is it that a workplace injury or illness will occur?

♦ How serious are the occupational hazards in your workplace?

♦ How remote is your workplace?

♦ How complex is your worksite in terms of size, design, etc.?

♦ What medical emergencies have occurred at your workplace in the past?

♦ How far away and how long does it take to get to emergency medical services?

Note: Employers who require their employees to provide first aid must comply with the bloodborne pathogen rule, WAC 296-62-080.

You must:

• Make sure your first-aid response plan:

- Fits your work location, type of work, and environmental conditions.

- Identifies the available emergency medical services and access numbers and where they are posted.

- Describes the type of first-aid training employees receive, if applicable.

- Identifies the location(s) of first-aid supplies and/or first-aid stations.

- Identifies the contents of first-aid kits.

- Describes how first-aid supplies or kits will be inspected and maintained.

- Describes how injured or ill employees will have access to first-aid trained employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-03905, filed 8/8/01, effective 9/1/01.]

WAC 296-307-03910 Make sure first-aid training contains required subjects.

Note: Assess your workplace to determine if there are certain job hazards, if the time and distance from emergency medical services indicate a need for training beyond the items listed below.

You must:

• Make sure that every two years, employees successfully complete first-aid training in the following core elements:

- Role and responsibilities of the first-aid provider.

- Assessing a scene.

- Performing an initial and ongoing assessment of an injured or ill person.

- Scene safety.

- Body substance isolation/bloodborne pathogens.

- Performing an emergency move.

- Placing an ill person in the recovery position.

- Opening and maintaining an airway.

- Providing rescue breathing.
- Managing an obstructed airway.
- Performing adult/one-rescuer CPR.
- Recognizing the warning signs and symptoms of medical problems.
- Recognizing and caring for an injured or ill person with decreased levels of responsiveness.
- Controlling external bleeding and recognizing internal bleeding.
- Recognizing and caring for victims of shock.
- Recognizing and stabilizing spinal injury.
- Recognizing and manually stabilizing suspected skeletal injuries.
- Knowledge of voluntary provisions of first aid, consent and confidentiality.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-03910, filed 8/8/01, effective 9/1/01.]

WAC 296-307-03915 Document your first-aid training. You must:

- Keep a written record of your employees' first-aid training by keeping rosters, first-aid cards, or certificates. You may store your documentation on a computer, as long as the information is readily available when requested by personnel of the department of labor and industries.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-03915, filed 8/8/01, effective 9/1/01.]

WAC 296-307-03920 Make sure appropriate first-aid supplies are readily available. You must:

- Make sure first-aid supplies are readily available. (See first-aid kit table.)
- Make sure first-aid supplies at your workplace are appropriate to:
 - Your occupational setting.
 - The response time of your emergency medical services.

First-Aid Kit Table

Number of employees normally assigned to worksite	Minimum first-aid supplies required at worksite
1 - 15 Employees	1 First-aid kit
16 - 30 Employees	2 First-aid kits
31 - 50 Employees	3 First-aid kits
Over 50 Employees (within 1/2 mile radius of supplies)	First-aid station (see WAC 296-307-03925)

- Note:
- First-aid kits from your local retailer or safety supplier should be adequate for most nonindustrial employers.
 - The following is a list of suggested items for your first-aid kit:
 - 1 absorbent compress, 4 x 8 inches
 - 16 adhesive bandages, 1 x 3 inches
 - 1 adhesive tape, 5 yards long
 - 10 antiseptic single-use packages, 0.5 g application
 - 6 burn treatment single-use packages, 0.5 g application
 - 1 eye covering (for two eyes)
 - 1 eye wash, 1 fluid ounce
 - 4 sterile pads, 3 x 3 inches
 - 2 pair of medical exam gloves
 - 1 triangular bandage, 39 x 39 x 55 inches
 - Optional first-aid kit contents
 - Bandage compresses, 2 x 2 inches, 3 x 3 inches and 5 x 5 inches
 - Self-activating cold packs, 4 x 5 inches

- Roller bandages, 6 yards long
- Mouth-to-mouth barrier for CPR
- Kits should be checked at least weekly to ensure adequate number of needed items are available.
- Kits may be carried in any motor vehicle that is used near the crew.

You must:

- Make sure that first-aid supplies are:
 - Easily accessible to all your employees.
 - Stored in containers that protect them from damage, deterioration, or contamination. Containers must be clearly marked, not locked, and may be sealed.
 - Able to be moved to the location of an injured or acutely ill worker.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-03920, filed 8/8/01, effective 9/1/01.]

WAC 296-307-03925 Provide a first-aid station when required. You must:

- Provide a first-aid station with at least one first-aid trained employee available if there are fifty or more employees per shift at one location.
- Make sure the first-aid station:
 - Is available to employees during all working hours.
 - Is equipped with first-aid supplies that are appropriate for your number of employees, occupational setting, and working conditions.
- Has at least one portable first-aid kit.

Note: Kits may be carried in any motor vehicle that is used near the crew. The vehicle may be considered a first-aid station when it is identified as one and when the driver is trained in first-aid.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-03925, filed 8/8/01, effective 9/1/01.]

WAC 296-307-042 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-307-07013 What rules apply to vehicles used to transport employees? You must ensure that motor vehicles used regularly to transport employees meet the following requirements:

(1) The vehicles are well equipped, covered against the weather, and maintained in good mechanical condition at all times.

(2) A sufficient number of properly secured seats are provided in each vehicle to accommodate the number of employees transported. When emergency conditions make it necessary to transport more employees than the seating capacity can accommodate, all employees must ride within the vehicle. No employee may ride on fenders or running boards of the vehicle.

(3) No employees may ride in or on any vehicle with their legs hanging over the end or sides. All trucks without tail gates should have safety bars.

(4) The vehicles have storage strong enough to retain sharp tools that could present a hazard to employees being transported.

(5) All dump-trucks used to transport employees have an adequate safety chain or locking device to ensure that the body of the truck is not raised while employees are riding in it.

(6) Explosives or highly inflammable materials are not carried in or on the vehicle while it is used to transport employees.

(7) Exhaust systems are installed and maintained in proper condition, and are designed to eliminate the employee exposure to exhaust gases and fumes.

(8) Within the cab, crew trucks must carry only the number of passengers for which they are designed. In any seating arrangement, the driver must be able to maintain full freedom of motion. The driver's normal vision must be free from obstruction by passengers or the seating arrangement.

(9) All enclosed crew trucks have an emergency exit in addition to the regular entrance.

(10) Trucks used for hauling gravel may be used as crew trucks if they meet the following requirements:

- (a) Steps in proper places;
- (b) Wooden floors;
- (c) Securely fastened seats;
- (d) Truck is properly covered; and
- (e) Compliance with all other general regulations covering crew trucks.

(11) Half-ton vehicles must haul no more than six persons including driver. Three-quarter-ton vehicles must haul no more than eight persons including driver.

(12) The vehicle is equipped with the first-aid supplies required by WAC 296-307-042, two blankets, and a fire extinguisher.

Note: Additional requirements relating to first aid are located in WAC 296-307-039.

(13) Heating units with open fires are not used in vehicles transporting crews.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-07013, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 98-24-096, § 296-307-07013, filed 12/1/98, effective 3/1/99; Recodified as § 296-307-07013. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-048, § 296-306A-07013, filed 10/31/96, effective 12/1/96.]

WAC 296-307-12040 Pesticide safety training—Standards for workers—40 CFR, § 170.130. (1) General requirement.

(a) Agricultural employer assurance. The agricultural employer shall assure that each worker, required by this section to be trained, has been trained according to this section during the last five years, counting from the end of the month in which the training was completed.

Note: In addition to the training required by this section, the agricultural employer shall assure without exception, that all employees are trained in accordance with WAC 296-307-550, Employer chemical hazard communication.

(b) Requirement for workers performing early entry activities. Before a worker enters a treated area on the agricultural establishment during a restricted-entry interval to perform early entry activities permitted by WAC 296-307-12020 and contacts anything that has been treated with the pesticide to which the restricted-entry interval applies, including but not limited to, soil, water, or surfaces of plants, the agricultural employer shall assure that the worker has been trained.

(c) Requirements for other agricultural workers.

(i) Information before entry. Except as provided in (b) of this subsection, before a worker enters any areas on the agricultural establishment where, within the last thirty days a pesticide to which this part applies has been applied or the restricted-entry interval for such pesticide has been in effect, the agricultural employer shall assure that the worker has been provided the pesticide safety information specified in subsection (3) of this section, in a manner that agricultural workers can understand, such as by providing written materials or oral communication or by other means. The agricultural employer must be able to verify compliance with this requirement.

(ii) Training before the start of a work period. The agricultural employer shall assure that a worker has been trained before the worker enters any areas on the agricultural establishment where, within the last thirty days a pesticide to which this chapter applies has been applied or a restricted-entry interval for such pesticide has been in effect, the agricultural employer shall assure that the worker has been trained.

(2) Exceptions. The following persons need not be trained under this section:

(a) A worker who is currently certified as an applicator of restricted-use pesticides under chapter 17.21 RCW.

(b) A worker who satisfies the training requirements of chapter 17.21 RCW.

(c) A worker who satisfies the handler training requirements of WAC 296-307-13025(3).

(d) A worker who is certified or licensed as a crop advisor by the Washington state department of agriculture under RCW 15.58.230: Provided, That a requirement for such certification or licensing is pesticide safety training that includes all the information set out in WAC 296-307-13025 (3)(d).

(3) Training programs.

(a) General pesticide safety information shall be presented to workers either orally from written materials or audiovisually. The information must be presented in a manner that the workers can understand (such as through a translator) using nontechnical terms. The presenter also shall respond to workers' questions.

(b) The person who conducts the training shall meet at least one of the following criteria:

(i) Be currently certified as an applicator of restricted-use pesticides under chapter 17.21 RCW; or

(ii) Be currently designated as a trainer of certified applicators or pesticide handlers by the Washington state department of agriculture in accordance with chapters 15.58 and 17.21 RCW; or

(iii) Have completed a pesticide safety train-the-trainer program approved by the Washington state department of agriculture in accordance with chapters 15.58 and 17.21 RCW; or

(iv) Satisfy the training requirements in WAC 296-307-13025(3).

(c) Any person who issues a Washington state department of agriculture-approved Worker Protection Standard worker training card must assure that the worker who receives the training card has been trained in accordance with subsection (4)(d) of this section.

(d) The training materials shall convey, at a minimum, the following information:

(i) Where and in what form pesticides may be encountered during work activities.

(ii) Hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization.

(iii) Routes through which pesticides can enter the body, including information on wearing work clothing that protects the body from pesticide residues.

(iv) Signs and symptoms of common types of pesticide poisoning.

(v) Emergency first aid for pesticide injuries or poisonings.

(vi) How to obtain emergency medical care.

(vii) Routine and emergency decontamination procedures, including preventing pesticides from entering the body by:

- Emergency eyeflushing techniques;
- Washing work clothes separately from other clothes before wearing them again;
- Washing before eating, drinking, using chewing gum or tobacco, or using the toilet;
- Washing/showering with soap and water, shampooing hair, and putting on clean clothes after work; and
- Washing immediately in the nearest clean water if pesticides are spilled on the body. As soon as possible shower, shampoo, and change into clean clothes.

(viii) Hazards from chemigation and drift.

(ix) Hazards from pesticide residues on clothing.

(x) Warnings about taking pesticides or pesticide containers home.

(xi) Requirements of this part designed to reduce the risks of illness or injury resulting from workers' occupational exposure to pesticides, including application and entry restrictions, the design of the warning sign, posting of warning signs, oral warnings, the availability of specific information about applications, and the protection against retaliatory acts.

(4) Verification of training.

(a) Except as provided in subsection (4)(b) of this section, if the agricultural employer assures that a worker possesses a Washington state department of agriculture-approved Worker Protection Standard worker training card, then the requirements of subsection (1) of this section will have been met.

(b) If the agricultural employer is aware or has reason to know that a Washington state department of agriculture-approved Worker Protection Standard worker training card has not been issued in accordance with this section, or has not been issued to the worker bearing the card, or the training was completed more than five years before the beginning of the current month, a worker's possession of that certificate does not meet the requirements of subsection (1) of this section.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-12040, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 98-24-096, § 296-307-12040, filed 12/1/98, effective 3/1/99; Recodified as § 296-307-12040. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-20-082, § 296-306A-12040, filed 9/30/96, effective 11/1/96.]

WAC 296-307-13025 Pesticide safety training—Standards for pesticide handlers—40 CFR, § 170.230. (1) Requirement. Before any handler performs any handling task, the handler employer shall assure that the handler has been trained in accordance with this section during the last five years, counting from the end of the month in which the training was completed.

Note: In addition to the training required by this section, the agricultural employer shall assure, without exception, that all employees are trained in accordance with WAC 296-307-550, Employer chemical hazard communication.

(2) Exceptions. The following persons need not be trained under this section:

(a) A handler who is currently certified as an applicator of restricted-use pesticides under chapter 17.21 RCW.

(b) A handler who is certified or licensed as a crop advisor by the Washington state department of agriculture under RCW 15.58.230: Provided, That a requirement for such certification or licensing is pesticide safety training that includes all the information set out in WAC 296-307-13025 (3)(d).

(3) Training programs.

(a) General pesticide safety information shall be presented to handlers either orally from written materials or audiovisually. The information must be presented in a manner that the handlers can understand (such as through a translator). The presenter also shall respond to handlers' questions.

(b) The person who conducts the training shall meet at least one of the following criteria:

(i) Be currently certified as an applicator of restricted-use pesticides under chapter 17.21 RCW; or

(ii) Be currently designated as a trainer of certified applicators or pesticide handlers by the Washington state department of agriculture under chapters 15.58 or 17.21 RCW; or

(iii) Have completed a pesticide safety train-the-trainer program approved by a state, federal, or tribal agency having jurisdiction.

(c) Any person who issues a Washington state department of agriculture-approved Worker Protection Standard handler training card must assure that the handler who receives the training card has been trained in accordance with (d) of this subsection.

(d) The pesticide safety training materials must convey, at a minimum, the following information:

(i) Format and meaning of information contained on pesticide labels and in labeling, including safety information such as precautionary statements about human health hazards.

(ii) Hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization.

(iii) Routes by which pesticides can enter the body.

(iv) Signs and symptoms of common types of pesticide poisoning.

(v) Emergency first aid for pesticide injuries or poisonings.

(vi) How to obtain emergency medical care.

(vii) Routine and emergency decontamination procedures.

(viii) Need for and appropriate use of personal protective equipment.

(ix) Prevention, recognition, and first-aid treatment of heat-related illness.

(x) Safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup.

(xi) Environmental concerns such as drift, runoff, and wildlife hazards.

(xii) Warnings about taking pesticides or pesticide containers home.

(xiii) Requirements of this part that must be followed by handler employers for the protection of handlers and other persons, including the prohibition against applying pesticides in a manner that will cause contact with workers or other persons, the requirement to use personal protective equipment, the provisions for training and decontamination, and the protection against retaliatory acts.

(4) Verification of training.

(a) Except as provided in (b) of this subsection, if the handler employer assures that a handler possesses a Washington state department of agriculture-approved Worker Protection Standard handler training card, then the requirements of subsection (1) of this section will have been met.

(b) If the handler employer is aware or has reason to know that a Washington state department of agriculture-approved Worker Protection Standard handler training card has not been issued in accordance with this section, or has not been issued to the handler bearing the card, or the handler training was completed more than five years before the beginning of the current month, a handler's possession of that card does not meet the requirements of subsection (1) of this section.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-13025, filed 8/8/01, effective 9/1/01. Statutory Authority: RCW 49.17.040. 98-24-096, § 296-307-13025, filed 12/1/98, effective 3/1/99; Recodified as § 296-307-13025. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-20-082, § 296-306A-13025, filed 9/30/96, effective 11/1/96.]

WAC 296-307-14505 What records must an employer keep for pesticide applications? (1) If you apply pesticides, or have pesticides applied for you, related to the production of an agricultural crop, you must keep records for each application. The records must include the following:

(a) The address or exact location where the pesticide was applied or stored;

Note: If you apply pesticides to one acre or more, the location must be shown on the map on the required form for at least the first application.

(b) The year, month, day, and time the pesticide was applied or stored;

(c) The product name on the registered label and the United States Environmental Protection Agency registration number, if applicable, of the pesticide that was applied or stored;

(d) The crop or site to which the pesticide was applied (application crop or site);

(e) The amount of pesticide applied per acre, or other appropriate measure;

(f) The concentration of pesticide applied;

(g) The total area to which pesticide was applied;

(h) If applicable, the licensed applicator's name, address, and telephone number and the name of the individual(s) making the application;

(i) The direction and estimated velocity of the wind at the time the pesticide was applied;

Exception: Wind information does not have to be recorded for applications of baits in bait stations and pesticide applications within structures.

(j) Any other reasonable information required by the department.

(2) A commercial pesticide applicator must provide a copy of the pesticide application records to the owner or lessee of the lands to which the pesticide is applied. Pesticide application records may be provided on any form that includes all required information.

(3) You must update records on the same day that a pesticide is applied. You may use a copy as the record of the pesticide application. You must maintain the records for at least seven years after the date of the application.

(4) You must ensure that pesticide application records are readily accessible to employees and their designated representatives in a central location in the workplace. The records must be available beginning on the day the application is made and for at least thirty days after. You may view the pesticide application records and make your own record from that information.

(5) New or newly assigned employees must be made aware of the accessibility of the application records before working with pesticides or in an area containing pesticides.

(6) When storing pesticides, you must, at least once a year, perform an inventory of the pesticides stored in any work area.

(7) The pesticide inventory records must include the following information:

(a) The location where the pesticide is stored;

(b) The year, month, day, and time the pesticide was first stored;

(c) The product name used on the registered label and the United States Environmental Protection Agency Registration Number, if applicable, of the pesticide that is stored; and

(d) The amount of pesticide in storage at the time of the inventory.

(8) You must maintain a record of pesticide purchases made between the annual inventory dates.

(a) Instead of this purchase record, you may obtain from distributors from whom you buy pesticides, a statement obligating the distributor to maintain the purchase records on your behalf to meet the requirements of this section.

(b) We may require you to submit all purchase records covering the purchases during a specified period of time or in a specified geographical area.

(9) When you end all pesticide activities, you must file the records with us. Anyone who succeeds or replaces you must retain the records required by this section, but that person is not liable for any violations you commit.

(10) You must ensure that the records required under this section are readily accessible to us for inspection. You must also provide copies of the records on request, to:

(a) An employee or the employee's designated representative in the case of an industrial insurance claim filed under Title 51 RCW with the department of labor and industries;

(b) Treating health care personnel; or

(c) The pesticide incident reporting and tracking review panel.

(11) The designated representative or treating health care personnel are not required to identify the employee represented or treated.

(12) We will keep the name of any affected employee confidential according to RCW 49.17.080(1).

(13) When treating health care personnel request records under this section, and the record is required to determine treatment, you must provide copies of the record immediately. Information for treating health care personnel must be made immediately available by telephone, if requested, with a copy of the records provided within twenty-four hours. For all other requests, you must provide copies of the records within seventy-two hours.

(14) If requested, you must provide copies of records on a form provided by the department.

(15) If you suspect that an employee is ill or injured because of an exposure to one or more pesticides, you must immediately provide the employee with a copy of the relevant pesticide application records.

(16) If you refuse to provide a copy of a requested record, the requester may notify the department of the request and your refusal.

(a) Within seven working days, we will request that you provide us with all pertinent copies of the records, except that in a medical emergency we will request within two working days.

(b) You must provide copies of the records to us within twenty-four hours after we request.

(17) We inspect for the records required under this section as part of any on-site inspection of a workplace conducted under this chapter or chapter 49.17 RCW. We will determine, during the inspection, whether the records are readily transferable to a form adopted by the department, and readily accessible to employees. However, your records will not be inspected more than once in any calendar year, unless a previous inspection has found recordkeeping violations. If recordkeeping violations are found, we may conduct reasonable multiple inspections, according to department rules. Nothing in this section limits our inspection of records pertaining to pesticide-related injuries, illnesses, fatalities, accidents, or complaints.

(18) If you fail to maintain the records, or provide access to or copies of the records required under this section, you will be subject to penalties authorized under RCW 49.17.180.

(19) The department of labor and industries and the department of agriculture will jointly adopt by rule, forms that satisfy the information requirements of this section and RCW 17.21.100.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-14505, filed 8/8/01, effective 9/1/01; Recodified as § 296-307-14505. 97-09-013, filed 4/7/97, effective 4/7/97. Statutory Authority: RCW 49.17.040, [49.17].050 and [49.17].060. 96-22-048, § 296-306A-14505, filed 10/31/96, effective 12/1/96.]

[2002 WAC Supp—page 1398]

WAC 296-307-550 Employer chemical hazard communication—Introduction. Important:

Thousands of chemicals can be found in today's workplaces. These chemicals may have the capacity to cause health problems, from minor skin irritations to serious injuries or diseases like cancer.

The employer chemical hazard communication rule was developed to make sure employers and employees are informed about chemical hazards in the workplace.

This rule applies to:

- Employers engaged in businesses where chemicals are used, distributed, or produced for use or distribution.
- Contractors or subcontractors that work for employers engaged in businesses where chemicals are used, distributed, or produced for use or distribution.

Note: • If you produce, import, distribute and/or repackage chemicals, or choose not to rely on labels or material safety data sheets provided by the manufacturer or importer, you must comply with Chemical hazard communication for manufacturers, importers and distributors, WAC 296-62-054.

• You may withhold trade secret information under certain circumstances, see Trade secrets, WAC 296-62-053, to find out what information may be withheld as a trade secret and what information must be released.

EXEMPTIONS:

- For the purposes of this employer hazard communication rule, if you are engaged in agricultural production of crops or livestock, "employee" does not mean:
 - Immediate family members of the officers of any corporation, partnership, sole proprietorship or other business entity or officers of any closely held corporation.
- Certain products, chemicals, or items are exempt from this rule. Below is a summarized list of these exemptions. See WAC 296-307-55055 at the end of this rule to get complete information about these exemptions:
 - Any hazardous waste or substance
 - Tobacco or tobacco products
 - Wood or wood products that are not chemically treated and will not be processed, for example, by sawing and sanding
 - Food or alcoholic beverages
 - Some drugs, such as retail or prescription medications
 - Retail cosmetics
 - Ionizing and nonionizing radiation
 - Biological hazards
 - Any consumer product or hazardous substance when workplace exposure is the same as that of a consumer
 - ♦ Retail products used in offices in the same manner and frequency used by consumers can be termed "consumer products." Consumer products include things such as: Correction fluid, glass cleaner, and dishwashing liquid.

Example:

If you use a household cleaner in your workplace in the same way that a consumer would use it when cleaning their house, the exposure should be the same as the consumer's. ("In the same way" means using the household cleaner in the same manner and frequency.) A janitor using a household cleaner, such as bleach, throughout the day, is not considered to be consumer use.

– Manufactured items that remain intact are exempt for this rule.

The following are examples:

Item	Covered by this rule	Not covered by this rule
Brick	sawed or cut in half	used whole or intact
Pipe	cut by a torch	bent with a tube bender
Nylon rope	burning the ends	tying a knot

– Manufactured items that are fluids or in the form of particles are not exempt for this rule.

Your responsibility:

To inform and train your employees about the hazards of chemicals they may be exposed to during normal working conditions, or in foreseeable emergencies by:

- Making a list of the hazardous chemicals present in your workplace
- Preparing a written Chemical Hazard Communication Program for your workplace
- Informing your employees about this rule and your program
- Providing training to your employees about working in the presence of hazardous chemicals
- Getting and keeping the material safety data sheets (MSDSs) for the hazardous chemicals
- Making sure that labels on containers of hazardous chemicals are in place and easy to read

You must:

Develop, implement, maintain, and make available a written Chemical Hazard Communication Program

WAC 296-307-55005

Identify and list all the hazardous chemicals present in your workplace

WAC 296-307-55010

Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used

WAC 296-307-55015

Make sure that material safety data sheets (MSDSs) are readily accessible to your employees

WAC 296-307-55020

Label containers holding hazardous chemicals

WAC 296-307-55025

Inform and train your employees about hazardous chemicals in your workplace

WAC 296-307-55030

Follow these rules for laboratories using hazardous chemicals

WAC 296-307-55035

Follow these rules for handling chemicals in factory sealed containers

WAC 296-307-55040

The department must:

Translate certain chemical hazard communication documents upon request

WAC 296-307-55045

Attempt to obtain a material safety data sheet (MSDS) upon request

WAC 296-307-55050

Exemption: Items or chemicals exempt from the rule, and exemptions from labeling

WAC 296-307-55055

Definitions

WAC 296-307-55060

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-550, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55005 Develop, implement, maintain, and make available a written Chemical Hazard Communication Program. You must:

- Develop, implement, maintain, and make available a written Chemical Hazard Communication Program specifically for your workplace. The Chemical Hazard Communication Program must, at a minimum, include:

- A list of hazardous chemicals known to be present in your workplace

- Procedures for making sure all containers are properly labeled

- A description of how you are going to obtain and maintain your material safety data sheets (MSDSs)

- A description of how you are going to train and inform your employees about hazardous chemicals in their workplace

- A description of how you are going to inform your employees about:

- ◆ Chemical hazards used during nonroutine tasks

- ◆ The hazards associated with chemicals contained in unlabeled pipes in their work areas

You must:

- Make sure your written Chemical Hazard Communication Program includes the following communication methods you will apply if you produce, use, or store hazardous chemicals at your workplace(s) in such a way that the employees of other employer(s) may be exposed:

- Provide the other employer(s) with a copy of the relevant material safety data sheets (MSDSs), or provide access to the MSDSs in a central location at the workplace

- Inform the other employer(s) of any precautionary measures that need to be taken to protect employees during normal operating conditions and in foreseeable emergencies

- Describe how to inform the other employer(s) of the labeling system used in the workplace

Note: • Examples of employees of other employers who could be exposed to chemical hazards that you produce, use, or store in your workplace include employees of construction companies, cleaning services, or maintenance contractors visiting or working on-site.

- Your employees have the right to get chemical hazard communication information from other employers at workplaces where they are working; and employees of other employers have the right to get the information from you when they are working at your workplace.

- Include in your written Chemical Hazard Communication Program the methods that you will use to share information with other employers and their employees at your workplace(s) regarding:

- Access to MSDSs

- Precautionary measures such as personal protective equipment (PPE) and emergency plans

- Any labeling systems used at the workplace.

If you rely on another employer's chemical hazard communication program to share the information required and the program meets the requirements of this rule, document in your own written Chemical Hazard Communication Program.

You must:

- Make your Chemical Hazard Communication Program available to your employees.

Note: Where employees must travel between workplaces during a workshift, that is, if their work is carried out at more than one geographical location, the written Chemical Hazard Communication Program may be kept at the primary workplace facility.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55005, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55010 Identify and list all the hazardous chemicals present in your workplace. You must:

- Identify all hazardous chemicals in your workplace. This includes any chemical that is known to be present in

your workplace in such a way that employees may be exposed to it under normal conditions of use or in a foreseeable emergency.

• Create a list of these chemicals using the chemical or common name on the material safety data sheet (MSDS). This list:

- Must be compiled for the workplace as a whole, or for individual work areas.
- Is necessary to make sure that all hazardous chemicals are identified and that MSDS, and labeling rules are met.
- Must be current.

Note: The following are some ways to determine whether a product is hazardous:

- Look for words on the label, such as "CAUTION," "WARNING," or "DANGER."
- Look for words or "hazard coding" that indicate that the chemical is flammable, an irritant, corrosive, carcinogenic, etc. "Hazard coding" refers to words, numbers, or colors that tell you a chemical is dangerous.
- Check the product's MSDS for hazard information. Examples of hazardous chemicals are: Acids, adhesives, caustics, fuels, paints, varnishes, shellacs and pesticides. Too many other classes of hazardous chemicals exist to list them all here. If you have any questions about a chemical you have at your workplace, contact your local L&I office.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55010, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55015 Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used. You must:

• Obtain a MSDS for each hazardous chemical used as soon as possible if the MSDS is not provided with the shipment of a hazardous chemical from the chemical manufacturer or importer.

Note:

- To obtain a MSDS, you may try calling the manufacturer or checking their website.
- If you have a commercial account with a retailer or wholesaler, you have the right to request and receive a MSDS about hazardous chemicals you purchase.
- If a chemical is purchased from a retailer with no commercial accounts, you have the right to request and receive the manufacturer's name and address so that you can contact them and request a MSDS for the chemical.
- Whoever prepares the MSDS is required to mark all blocks on the form, even if there is no relevant information for that section.
- If you have problems getting a MSDS within 30 calendar days after making a written request to the chemical manufacturer, importer, or distributor, you can get help from WISHA. You may contact your local regional office for assistance or make a written request for assistance to the: Department of Labor and Industries
Right-to-Know Program
P.O. Box 44610
Olympia, Washington 98504-4610
- Include in your request:
 - A copy of the purchaser's written request to the chemical manufacturer, importer, or distributor
 - The name of the product suspected of containing a hazardous chemical
 - The identification number of the product, if available
 - A copy of the product label, if available
 - The name and address of the chemical manufacturer, importer, or distributor from whom the product was obtained

You must:

- Maintain a MSDS for each hazardous chemical:
 - Keep copies of the required MSDSs for each hazardous chemical present in your workplace. These may be kept in any form, including as a part of operating procedures.

[2002 WAC Supp—page 1400]

– Each MSDS must be in English. You may also keep copies in other languages.

Note:

- If you choose not to rely on MSDSs or labels provided by the manufacturer or importer, you must comply with the chemical hazard communication standard for manufacturers, importers, and distributors, WAC 296-62-054.
- It may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. MSDSs can be designed to cover groups of hazardous chemicals in a work area.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-370-55015, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55020 Make sure material safety data sheets are readily accessible to your employees. You must:

- Make sure that MSDSs are readily accessible, easily obtained without delay during each work shift to employees when they are in their work area(s).
- Make sure that employees, who must travel between workplaces during a work shift, such as when their work is carried out at more than one geographical location, can immediately obtain the required MSDS information in an emergency. (MSDSs may be kept at a central location at the primary workplace facility and accessed by means such as voice communication or laptop computer.)

Note:

- Electronic access (such as computer or fax), microfiche, and other alternatives to maintaining paper copies of the MSDSs are permitted as long as they do not create barriers to immediate employee access in each workplace.
- Barriers to immediate access of electronic MSDSs may include:
 - Power outages
 - Equipment failure
 - System delays
 - Deficient user knowledge to operate equipment
 - Location of equipment outside the work area

Solutions to eliminating these and other possible barriers to access may require the availability of back-up systems, employee training, and providing access equipment in the work areas.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55020, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55025 Label containers holding hazardous chemicals.

EXEMPTIONS: The following is a summary of items that are exempt from this rule. For complete information about each of these, see WAC 296-307-55055.

- Pesticides, when labeled as required by the Environmental Protection Agency (EPA)
- Food, food additives, color additives, drugs, cosmetics, or medical/veterinary devices or products
- Alcoholic beverages not intended for industrial use
- Consumer products labeled, as required, by the Consumer Product Safety Commission
- Agriculture or vegetable seeds treated and labeled as required by the Federal Seed Act

Note: You are not required to label portable containers into which hazardous chemicals are transferred from labeled containers, if the chemical is used and controlled by the employee who performed the transfer within the same shift.

You must:

- Make sure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the following information:
 - The identity of the hazardous chemical(s) using either the chemical or common name

Note: You are not required to list each component in a hazardous mixture on the label. If a mixture is referred to on a material safety data sheet (MSDS) by a product name, then the product name should be used as the identifier.

– Appropriate hazard warnings which give general information about the relevant health and physical hazards of the chemicals. This includes health effects information, such as information about organs most likely to be affected by the chemicals.

EXAMPLES OF LABEL:

Name of Chemical Physical Hazards Health Hazards; • Health effects information • Affected Target Organs

– For individual stationary process containers, you may use alternate labeling methods such as:

- ◆ Signs
- ◆ Placards
- ◆ Process sheets
- ◆ Batch tickets
- ◆ Operating procedures or
- ◆ Other such written materials, as long as the alternate method identifies the containers and conveys the required label information.

Note: • You may use words, pictures, symbols or any combination to communicate the hazards of the chemical. Be sure to train your employees so they can demonstrate a knowledge of the labeling system you use.



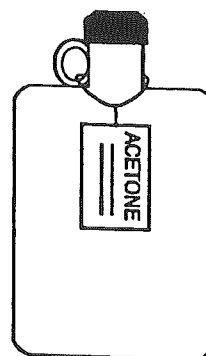
- Some alternative labeling systems do not communicate target organ information, so the employee will have to rely on training provided by the employer to obtain this information.

You must:

• Not remove or deface existing labels on incoming containers of hazardous chemicals (such as those marked with United States Department of Transportation (USDOT) markings, placards, and labels), unless the container is immediately labeled with the required information. You do not need to put on new labels if existing labels already provide the required information. If the package or container is sufficiently cleaned of residue and purged of vapors to remove any potential health or physical hazard, existing labels can be removed.

• Make sure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift.

Note: • Employers with non-English speaking employees may use other languages in the warning information in addition to the English language.



- Above is an example of a labeled container. You may use a laminated or coated label, affixed to the container with a wire, to avoid deterioration of labels due to a solvent, such as acetone.

You must:

- Make sure if the hazardous chemical is regulated by WISHA or OSHA in a substance-specific health rule, that the labels or other warnings are used according to those rules.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55025, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55030 Inform and train your employees about hazardous chemicals in your workplace.

Note: The employer chemical hazard communication information and training requirements also apply to pesticides. Employers who have employees who are exposed to pesticides must be in compliance with this rule and the worker protection standards, WAC 296-307-12040.

You must:

- Provide employees with effective information on hazardous chemicals in their work area at the time of their initial job assignment. Whenever a new physical or health hazard related to chemical exposure is introduced into their employees' work areas, information must be provided.

– Inform employees of:

- ◆ The requirements of this rule.
- ◆ Any operations in their work area where hazardous chemicals are present.
- ◆ The location and availability of your written Chemical Hazard Communication Program, including the list(s) of hazardous chemicals and material safety data sheets (MSDSs) required by this rule.

• Provide employees with effective training about hazardous chemicals in their work area at the time of their initial job assignment. Whenever a new physical or health hazard related to chemical exposure is introduced, the employees must be trained. Make sure that employee training includes:

– Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area. Examples of these methods and observations may include:

- ◆ Monitoring conducted by you
- ◆ Continuous monitoring devices
- ◆ Visual appearance or odor of hazardous chemicals when being released
- ◆ Physical and health hazards of the chemicals in the work area, including the likely physical symptoms or effects of overexposure

◆ Steps employees can take to protect themselves from the chemical hazards in your workplace, including specific procedures implemented by you to protect employees from exposure to hazardous chemicals. Specific procedures may include:

- Appropriate work practices
- Engineering controls
- Emergency procedures
- Personal protective equipment to be used
- Details of the Chemical Hazard Communication Program developed by you, including an explanation of the labeling system and the MSDS, and how employees can obtain and use the appropriate hazard information.

• Tailor information and training to the types of hazards to which employees will be exposed. The information and training may be designed to cover categories of hazards, such as flammability or cancer-causing potential, or it may address specific chemicals. Chemical-specific information must always be available through labels and MSDSs.

• Make reasonable efforts to post notices in your employees' native languages (as provided by the department) if those employees have trouble communicating in English.

- Note:
- Interactive computer-based training or training videos can be used provided they are effective.
 - Your MSDSs may not have WISHA permissible exposure limits (PELs) listed. In some cases, WISHA PELs are stricter than the OSHA PELs and other exposure limits listed on the MSDSs you receive. If this is the case, you must refer to the WISHA PEL table, WAC 296-62-075, for the appropriate exposure limits to be covered during training.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55030, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55035 Follow these rules for laboratories using hazardous chemicals.

- Note: Laboratories are required to have a written Chemical Hygiene Plan under WAC 296-62-400, if applicable. They are not required to have a written Chemical Hazard Communication Program.
- You may combine your Accident Prevention Program and Chemical Hazard Communication Program to assist you in developing a Chemical Hygiene Plan for your laboratory.

You must:

(1) Make sure that labels on incoming containers of hazardous chemicals are in place and readable.

(2) Maintain material safety data sheets (MSDSs) received with incoming shipments of hazardous chemicals and make them available to laboratory employees when they are in their work areas.

(3) Provide laboratory employees with information and training as described in: "Inform and train your employees about hazardous chemicals in your workplace," WAC 296-307-55030, except for the part about the location and availability of the written Chemical Hazard Communication Program.

- Note: Laboratory employers that ship hazardous chemicals are considered to be either chemical manufacturers or distributors. When laboratory employers ship hazardous chemicals they must comply with the rule, "Hazard communication standards for chemical manufacturers, importers and distributors," WAC 296-62-054.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55035, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55040 Follow these rules for handling chemicals in factory-sealed containers. You must:

This applies to situations where employees only handle chemicals in factory-sealed containers that are not opened under normal use (such as those found in marine cargo handling, trucking, warehousing, or retail sales). **You must:**

(1) Make sure that labels on incoming containers of hazardous chemicals are in place and readable.

(2) Keep or obtain material safety data sheets.

• Keep any MSDSs that are received with incoming shipments of the sealed containers of hazardous chemicals

• If a factory-sealed container of hazardous chemicals comes without a MSDS, obtain one as soon as possible, if an employee requests it

(3) Make sure that the MSDSs are readily accessible during each work shift to employees when they are in their work area(s).

(4) Inform and train your employees about hazardous chemicals in your workplace, to protect them in case of a hazardous chemical spill or leak from a factory-sealed container. You do not have to cover the location and availability of the written Chemical Hazard Communication Program.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55040, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55045 Translate certain chemical hazard communication documents upon request. The department must:

• Upon receipt of a written or verbal request, prepare and make available (within available resources) to employers or the public, a translation into Cambodian, Chinese, Korean, Spanish, or Vietnamese of any of the following:

– An employer's written Chemical Hazard Communication Program

– A material safety data sheet or

– Written materials prepared by the department to inform employees of their rights described in this rule, regarding chemical hazard communication

- Note: Written requests for translations should be directed to:
- Department of Labor and Industries
Right-to-Know Program
P.O. Box 44610
Olympia, Washington 98504-4610

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55045, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55050 Attempt to obtain a material safety data sheet (MSDS) upon request. The department must:

• Upon receipt of an employer's written request for a material safety data sheet, attempt to obtain the MSDS from the chemical manufacturer, importer, or distributor. When the department receives the MSDS, the department must forward a copy of it to the purchaser at no cost. Small business employers will be given priority for this service.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55050, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55055 Items or chemicals exempt from the rule, and exemptions from labeling.

• Listed below are the full descriptions of the items or chemicals that are exempt, or not covered, by this rule:

– Any consumer product or hazardous substance, defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substance Act (15 U.S.C. 1261 et seq.) respectively, where you can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure that is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended.

– Any hazardous waste, defined by the Hazardous Waste Management Act chapter 70.105 RCW, when subject to regulations issued under that act by the department of ecology, that describes specific safety, labeling, personnel training, and other rules for the accumulation, handling, and management of hazardous waste.

– Any hazardous waste, defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that act by the Environmental Protection Agency.

– Any hazardous substance, defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et seq.), when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with Environmental Protection Agency regulations.

– Tobacco or tobacco products.

– Wood or wood products, including lumber that will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to the employees is the potential for flammability or combustibility. Wood or wood products that have been treated with hazardous chemicals covered by this rule, and wood that may be subsequently sawed or cut, generating dust, are not exempt.

– Articles, meaning manufactured items other than a fluid or particle that:

♦ Are formed to a specific shape or design during manufacture;

♦ Have end use function(s) dependent in whole or in part upon their shape or design during end use; and

♦ Under normal conditions of use, do not release more than very small quantities, for example minute or trace amounts of a hazardous chemical such as emissions from a marking pen or a newly varnished wood chair, and do not pose a physical hazard or health risk to employees.

– Food or alcoholic beverages that are sold, used, or prepared in a retail establishment such as a grocery store, restaurant, or drinking place, and foods intended for personal consumption by employees while in the workplace.

– Any drug, defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (for example, tablets or pills); drugs that are packaged by the chemical manufacturer for sale to consumers in a retail establishment (for example over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace

(for example, first-aid supplies). Aerosolized or cytotoxic drugs administered by a health care worker are not excluded.

– Cosmetics packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the *workplace*.

– Ionizing and nonionizing radiation.

– Biological hazards.

• This rule does not require labeling of the following chemicals:

– Any pesticide, defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that act and labeling regulations issued under that act by the Environmental Protection Agency.

– Any chemical substance or mixture, in the Toxic Substance Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that act, and labeling requirements issued under that act by the Environmental Protection Agency.

– Any food, food additive, color additive, drug, cosmetic, or medical/veterinary device or product, including materials intended for use as ingredients in such products (for example, flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum Toxin Act of 1913 (21 U.S.C. 151 et seq.) and regulations issued under those acts, when they are subject to the labeling requirements under those acts by either the Food and Drug Administration or the Department of Agriculture.

– Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that act, when subject to the labeling requirements of that act and labeling regulations issued under that act by the Bureau of Alcohol, Tobacco, and Firearms.

– Any consumer product or hazardous substance, as defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety rule or labeling requirement of those acts, or regulations issued under those acts by the Consumer Product Safety Commission.

– Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act (7 U.S.C. 1551 et seq.), and the labeling requirements issued under that act by the Department of Agriculture.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55055, filed 8/8/01, effective 9/1/01.]

WAC 296-307-55060 Definitions.**Chemical**

Any element, chemical compound, or mixture of elements and/or compounds.

Chemical manufacturer

An employer with a workplace where one or more chemicals are produced for use or distribution.

Chemical name

The scientific designation of a chemical in accordance with one of the following:

- The nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC)
- The chemical abstracts service (CAS) rules of nomenclature

OR

- A name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

Combustible liquid

A combustible liquid has a flashpoint of at least 100°F (37.8°C) and below 200°F (93.3°C). Mixtures with at least 99% of their components having flashpoints of 200°F (93.3°C) or higher are not considered combustible liquids.

Commercial account

An arrangement in which a retail distributor sells hazardous chemical(s) to an employer, generally in large quantities over time, and/or at costs that are below the regular retail price.

Common name

Any designation or identification such as:

- Code name
- Code number
- Trade name
- Brand name
- Generic name used to identify a chemical other than by its chemical name.

Compressed gas

A gas or mixture of gases that, when in a container, has an absolute pressure exceeding:

- 40 psi at 70°F (21.1°C)

OR

- 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C)

Compressed gas can also mean a liquid with a vapor pressure that exceeds 40 psi at 100°F (37.8°C).

Container

Any container, except for pipes or piping systems, that contains a hazardous chemical. It can be any of the following:

- Bag
- Barrel
- Bottle
- Box
- Can
- Cylinder
- Drum
- Reaction vessel
- Storage tank.

Designated representative

- Any individual or organization to which an employee gives written authorization.
- A recognized or certified collective bargaining agent without regard to written employee authorization.
- The legal representative of a deceased or legally incapacitated employee.

Director

The director means the director of the department of labor and industries or their designee.

Distributor

A business, other than a chemical manufacturer or importer, that supplies hazardous chemicals to other distribu-

tors or to employers. See WAC 296-62-054 for requirements dealing with manufacturers, distributors and importers - hazard communication.

Employee

The term employee and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, means an employee of an employer who is employed in the business of his or 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 personal labor for an employer under this standard whether by way of manual labor or otherwise.

Employer

An employer is 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 persons, partnership, or business entity not having employees, and who is covered by the Industrial Insurance Act must be considered both an employer and an employee.

Explosive

A chemical that causes a sudden, almost instant release of pressure, gas, and heat when exposed to a sudden shock, pressure, or high temperature.

Exposure or exposed

An employee has been, or may have possibly been, subjected to a hazardous chemical, toxic substance or harmful physical agent while working. An employee could have been exposed to hazardous chemicals, toxic substances, or harmful physical agents in any of the following ways:

- Inhalation
- Ingestion
- Skin contact
- Absorption
- Related means.

The terms exposure and exposed only cover workplace exposure involving a toxic substance or harmful physical agent in the workplace different from typical nonoccupational situations in the way it is:

- Used
- Handled
- Stored
- Generated

OR

- Present.

Flammable

A chemical covered by one of the following categories:

- Aerosol flammable means an aerosol that, when tested by the method described in 16 CFR 1500.45 yields either a flame projection more than 18 inches at full valve opening or a flashback (a flame extending back to the valve) at any degree of valve opening;

- Gas, flammable means:

— A gas that, at temperature and pressure of the surrounding area, forms a flammable mixture with air at a concentration of 13% by volume or less; or

— A gas that, at temperature and pressure of the surrounding area, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit;

• Liquid, flammable 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 99% or more of the total volume of the mixture.

• Solid, flammable means a solid, other than a blasting agent or explosive as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that is likely to cause fire through friction, moisture absorption, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily. Solid, inflammable also means that when the substance is ignited, it burns so powerfully and persistently that it creates a serious hazard. A chemical must be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint

• The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by any of the following measurement methods:

— Tagliabue closed tester: (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

— Pensky-Martens closed tester: (See American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

— Setaflash closed tester: (See American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78).)

Note: Organic peroxides, which undergo auto accelerating thermal decomposition, are excluded from any of the flashpoint measurement methods specified above.

Foreseeable emergency

Any potential event that could result in an uncontrolled release of a hazardous chemical into the workplace. Examples of foreseeable emergencies include equipment failure, rupture of containers, or failure of control equipment.

Hazardous chemical

Any chemical that is a physical or health hazard.

Hazard warning

Can be a combination of words, pictures, symbols, or combination appearing on a label or other appropriate form of warning which shows the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s).

Note: See definition for physical hazard and health hazard to determine which hazards must be covered.

Health hazard

Any chemical with the potential to cause acute or chronic health effects in exposed employees. The potential must be statistically significant based on evidence from at least one study conducted under established scientific principles. Health hazards include:

- Chemicals which are carcinogens
- Toxic or highly toxic agents
- Reproductive toxins
- Irritants
- Corrosives
- Sensitizers
- Hepatotoxins
- Nephrotoxins
- Neurotoxins
- Agents which act on the hematopoietic system
- Agents which damage the lungs, skin, eyes, or mucous membranes.

See WAC 296-62-054 for more definitions and explanations about the scope of health hazards covered by this part.

See WAC 296-62-054 for the criteria used for determining whether or not a chemical is considered hazardous for purposes of this rule.

Identity

Any chemical or common name listed on the material safety data sheet (MSDS) for the specific chemical. Each identity used must allow cross-references among the:

- Required list of hazardous chemicals
- Chemical label
- MSDSs.

Importer

The first business within the customs territory of the USA that:

- Receives hazardous chemicals produced in other countries

AND

- Supplies them to distributors or employers within the USA.

See WAC 296-62-054 for requirements dealing with manufacturers, importers and distributors - hazard communication.

Material safety data sheet (MSDS)

Written or printed material that tells you about the chemical(s), what it can do to and how to protect yourself, others, or the environment.

For requirements for developing MSDSs see WAC 296-62-054—manufacturers, importers, and distributors - hazard communication.

Mixture

Any combination of 2 or more chemicals (if that combination did not result from a chemical reaction).

Organic peroxide

This is an organic compound containing the bivalent-O-O-structure. It may be considered a structural derivative of hydrogen peroxide if one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer

A chemical other than a blasting agent or explosive as defined in WAC 296-52-417 or CFR 1910.109(a), that starts or promotes combustion in other materials, causing fire either of itself or through the release of oxygen or other gases.

Permissible exposure limits (PELs)

PELs are airborne concentrations of substances measured by their concentration in the air no matter what amount is breathed by the employee. The permissible exposure limits (PELs) must include the following four categories:

- Permissible exposure limits - Time-weighted average (PEL-TWA) is the time-weighted average airborne exposure to any 8-hour work shift of a 40-hour work week and must not be exceeded.

- Permissible exposure limits - Short-term exposure limit (PEL-STEL) is the employee's 15-minute time-weighted average exposure which must not be exceeded at any time during a work day unless another time limit is specified in a parenthetical notation below the limit. If another time period is specified, the time-weighted average exposure over that time period must not be exceeded at any time during the working day.

- Permissible exposure limits - Ceiling (PEL-C) is the employee's exposure which must not be exceeded during any part of the work day. If instantaneous monitoring is not feasible, then the ceiling must be assessed as a 15-minute time-weighted average exposure which must not be exceeded at any time over a working day.

- Skin notation is the potential contribution to the overall employee exposure by the cutaneous route including mucous membranes and eye, either by airborne, or more particularly, by direct contact with the substance. These substances are identified as having a skin notation in the OSHA and WISHA PEL tables (29 CFR Part 1910 Subpart Z and WAC 296-62-075, respectively).

Physical hazard

A chemical that has scientifically valid evidence to show it is one of the following:

- Combustible liquid
- Compressed gas
- Explosive
- Flammable
- Organic peroxide
- Oxidizer
- Pyrophoric
- Unstable (reactive)
- Water reactive.

Produce

Any one of the following:

- Manufacture
- Process
- Formulate
- Blend
- Extract
- Generate
- Emit
- Repackage.

Purchaser

An employer who buys one or more hazardous chemicals to use in their workplace.

Pyrophoric

A chemical is pyrophoric if it will ignite spontaneously in the air when the temperature is 130°F (54.4°C) or below.

Responsible party

Someone who can provide appropriate information about the hazardous chemical and emergency procedures.

Specific chemical identity

This term applies to chemical substances. It can mean the:

- Chemical name
- Chemical abstracts service (CAS) registry number
- Any other information that reveals the precise chemical designation of the substance.

Trade secret

Any confidential:

- Formula
- Pattern
- Process
- Device
- Information
- Collection of information.

The trade secret is used in an employer's business and gives an opportunity to gain an advantage over competitors who do not know or use it.

See WAC 296-62-053 for requirements dealing with trade secrets.

Unstable (reactive)

An unstable or reactive chemical is one that in its pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Use

Means to:

- Package
- Handle
- React
- Emit
- Extract
- Generate as a by-product
- Transfer.

Water-reactive

A water-reactive chemical reacts with water to release a gas that is either flammable or presents a health hazard.

Work area

A room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

Workplace

The term workplace means an establishment, job site, or project, at one geographical location containing one or more work areas.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-55060, filed 8/8/01, effective 9/1/01.]

WAC 296-307-570 Lighting rule. Your responsibility:
To provide and maintain adequate lighting in your workplace.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-570, filed 8/8/01, effective 9/1/01.]

WAC 296-307-57005 Provide and maintain adequate lighting.

Note: This section establishes minimal levels of lighting for safety purposes only. Guidelines pertaining to optimal levels of lighting and illumination may be found in Practice for Industrial Lighting, ANSI/IES RP7-1979.

You must:

• Provide and maintain adequate lighting for all work activities in your workplace. See the following table.

Lighting Table		
Activity	Minimum Acceptable average lighting level in an area:	Any one single measurement used to determine the average lighting level* cannot be less than:
	(Foot-candles)	(Foot-candles)
Indoor task	10	5
Outdoor task	5	2.5
Nontask activities for both indoor and outdoor	3	1.5

- Lighting levels must be measured at thirty inches above the floor/working surface or at the task.

You must:

• Have adequate light for employees to see nearby objects that might be potential hazards or to see to operate emergency controls or other equipment, if general lighting is not available.

- Note:**
- Lighting levels can be measured with a light meter.
 - Conversion information: 1 foot candle = 1 lumen incident per square foot = 10.76 lux.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-57005, filed 8/8/01, effective 9/1/01.]

WAC 296-307-590 Environmental tobacco smoke in the office. Your responsibility:

To control exposure to environmental tobacco smoke in your office work environment

You must:

Control tobacco smoke in your building

WAC 296-307-59005

Control tobacco smoke that comes in from the outside

WAC 296-307-59010

Note: This rule does not preempt any federal, state, municipal, or other local authority's regulation of indoor smoking that is more protective than this section.

Definitions: *Office work environment* is an indoor or enclosed occupied space where clerical work, administration, or business is carried out.

In addition, it includes:

- Other workplace spaces controlled by the employer and used by office workers, such as cafeterias, meeting rooms, and washrooms.

- Office areas of manufacturing and production facilities, not including process areas.
- Office areas of businesses such as food and beverage establishments, agricultural operations, construction, commercial trade, services, etc.

Smoking

A person is smoking if they are:

- Lighting up
- Inhaling
- Exhaling
- Carrying a pipe, cigar or cigarette of any kind that is burning.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-590, filed 8/8/01, effective 9/1/01.]

WAC 296-307-59005 Control tobacco smoke in your building.

EXEMPTION: The minimum criteria specified in this rule do not apply to outdoor structures provided for smokers such as gazebos or lean-tos.

You must:

- Prohibit smoking in your office work environment

OR

• Restrict smoking inside your office work environment to designated enclosed smoking rooms that meet the following minimum criteria:

- Identify smoking rooms clearly with signs.

– Make sure the designated smoking rooms are not in common areas, such as:

◆ Places where nonsmoking employees are required to work or visit

- ◆ Restrooms
- ◆ Washrooms
- ◆ Hallways
- ◆ Stairways
- ◆ Cafeterias/lunchrooms
- ◆ Meeting rooms

– Make sure that no employee is required to enter a designated smoking room while someone is smoking there.

– Conduct cleaning and maintenance work in designated smoking rooms when smokers are not present.

You must:

• Ventilate designated smoking rooms at a rate of at least 60 cubic feet per minute per smoker (calculated on the basis of the maximum number of smokers expected during the course of a normal working day), which can be supplied by transfer air from adjacent areas.

– Maintain enough negative air pressure in designated smoking areas to prevent smoke from migrating into nonsmoking areas, at all times.

– Operate a separate mechanical exhaust system in designated smoking rooms, to make sure exhausted air moves directly outside, and does not recirculate into nonsmoking areas.

– Prohibit use of the designated smoking room if the mechanical exhaust system is not working properly, until repairs are completed.

Note: This ventilation rate is recommended for occupancies of no more than 7 people for every 100 square feet of net occupied space in the designated smoking room.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-59005, filed 8/8/01, effective 9/1/01.]

WAC 296-307-59010 Control tobacco smoke that comes in from the outside. You must:

• Use engineering or administrative controls to minimize the amount of tobacco smoke that comes into your office(s) from outside the building.

– Make sure that outside smoking areas used by your employees are not close to doorways, air intakes, and other openings that may allow airflow directly into an office.

Note: By changing the way workers do their job, you can reduce work exposure to potential hazards. These changes are called administrative controls and include such things as:

- Job rotation
- Wetting down dusty areas
- Having employees shower after exposure to potentially harmful substances
- Maintaining equipment properly
- Cleaning up work areas to control the effect of potential hazards

Engineering controls let you plan or physically change the machinery or work environment to prevent employee exposure to potential hazards. This includes any modification of plant equipment, processes, or materials to reduce employees' exposure to toxic materials or harmful physical agents.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-17-033, § 296-307-59010, filed 8/8/01, effective 9/1/01.]

Chapter 296-350 WAC**WISHA ADMINISTRATIVE RULES****WAC**

296-350-100	Repealed.
296-350-10010	Repealed.
296-350-10020	Repealed.
296-350-10030	Repealed.
296-350-10040	Repealed.
296-350-10050	Repealed.
296-350-150	Repealed.
296-350-15010	Repealed.
296-350-15015	Repealed.
296-350-15020	Repealed.
296-350-15025	Repealed.
296-350-15030	Repealed.
296-350-15035	Repealed.
296-350-15040	Repealed.
296-350-15045	Repealed.
296-350-350	Repealed.
296-350-35010	Repealed.
296-350-35015	Repealed.
296-350-35020	Repealed.
296-350-35025	Repealed.
296-350-35030	Repealed.
296-350-35035	Repealed.
296-350-35040	Repealed.
296-350-35045	Repealed.
296-350-35050	Repealed.
296-350-35055	Repealed.
296-350-35060	Repealed.
296-350-500	Repealed.
296-350-600	Repealed.
296-350-60010	Repealed.
296-350-60015	Repealed.
296-350-60020	Repealed.
296-350-60025	Repealed.
296-350-60030	Repealed.
296-350-60035	Repealed.
296-350-60040	Repealed.
296-350-60045	Repealed.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-350-100	Inspections and citations. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-100, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
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296-350-10010	Selecting workplaces to inspect. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-10010, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-10020	Inspections—Site visit. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-10020, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-10030	Complaints by employees or employee representatives. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-10030, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-10040	Results of a WISHA inspection—Notice of violations. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-10040, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-10050	Posting a citation and notice. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-10050, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-150	Civil penalties. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-150, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15010	Assessing civil penalties—Purpose. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15010, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15015	Minimum penalty amounts. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15015, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15020	Severity and probability determine base penalties. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15020, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15025	Severity. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15025, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15030	Probability. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15030, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15035	Gravity and base penalties. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15035, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15040	Adjustments to base penalties. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15040, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-15045	Increasing penalty amounts. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-15045, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
296-350-350	Extension of abatement date(s)—Application—Authority. [Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-350-350, filed 7/20/94, effective 8/1/94.]

- 296-350-35010 Application for extension of abatement date(s). [Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-350-35010, 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), § 296-350-35010, filed 11/13/80; Order 76-29, § 296-350-35010, filed 9/30/76; Order 75-14, § 296-350-35010, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35015 Extension of abatement date(s)—Application—Timeliness. [Order 76-29, § 296-350-35015, filed 9/30/76; Order 75-14, § 296-350-35015, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35020 Extension of abatement date(s)—Application—Service. [Order 75-14, § 296-350-35020, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35025 Extension of abatement date(s)—Application—Contents. [Order 75-14, § 296-350-35025, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35030 Extension of abatement date(s)—Provisional determination. [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), § 296-350-35030, filed 11/13/80; Order 75-14, § 296-350-35030, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35035 Extension of abatement date(s)—Notice of application—Notice of opportunity for hearing—Notice of provisional determination. [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), § 296-350-35035, filed 11/13/80; Order 75-14, § 296-350-35035, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35040 Extension of abatement date(s)—Posting. [Order 75-14, § 296-350-35040, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35045 Extension of abatement date(s)—Application for hearing. [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), § 296-350-35045, filed 11/13/80; Order 75-14, § 296-350-35045, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35050 Extension of abatement date(s)—Notice of hearing. [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), § 296-350-35050, filed 11/13/80; Order 75-14, § 296-350-35050, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35055 Extension of abatement date(s)—Hearings. [Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-350-35055, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-350-35055, filed 6/11/82. 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), § 296-350-35055, filed 11/13/80; Order 75-14, § 296-350-35055, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-35060 Extension of abatement date(s)—Decision and order. [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), § 296-350-35060, filed 11/13/80; Order 75-14, § 296-350-35060, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-500 Citation and notice—Copy to employee representative. [Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-350-500, filed 7/20/94, effective 9/20/94; 87-24-051 (Order 87-24), § 296-350-500, filed 11/30/87. 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), § 296-350-500, filed 11/13/80; Order 75-14, § 296-350-500, filed 4/14/75.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-600 WISHA appeals. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-600, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60010 Filing an appeal—Who, when and where. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60010, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60015 What must be in a WISHA appeal. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60015, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60020 Why we reassume jurisdiction. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60020, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60025 Reassuming jurisdiction or forwarding an appeal to the board. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60025, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60030 Reviewing appeals and extending review time. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60030, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60035 Informal WISHA conferences. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60035, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60040 Issuing and appealing corrective notices. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60040, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.
- 296-350-60045 Notifying employees. [Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 00-11-098, § 296-350-60045, filed 5/17/00, effective 8/1/00.] Repealed by 01-11-038, filed 5/9/01, effective 9/1/01. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050.

WAC 296-350-100 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-10010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-10020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-10030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-10040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-10050 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-150 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15035 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-15045 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-350 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35035 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35045 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35050 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35055 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-35060 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-500 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-600 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60010 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60015 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60020 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60025 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60030 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60035 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60040 Repealed. See Disposition Table at beginning of this chapter.

WAC 296-350-60045 Repealed. See Disposition Table at beginning of this chapter.

Chapter 296-401B WAC

CERTIFICATION OF COMPETENCY FOR JOURNEYMAN ELECTRICIANS (Formerly chapter 296-401A WAC)

WAC

296-401B-700 Fees for certificates of competency, examination and reciprocity.

WAC 296-401B-700 Fees for certificates of competency, examination and reciprocity. When an individual applies to take a competency examination or to obtain a cer-

tificate of competency, the individual must pay the appropriate fee(s) listed below.

Type of Certificate	Fee
(1) Journeyman or specialty electrician certificate renewal (per 36-month period)	\$66.30
(2) Late renewal of journeyman or specialty electrician certificate (per 36-month period)	\$133.70
(3) Journeyman or specialty electrician examination application (non-refundable)	\$27.70
(4) Journeyman or specialty electrician original certificate	\$43.70
(5) Training certificate (expires one year after purchase)	\$21.30
(6) Training certificate renewal or update of hours	\$21.30
(7) Unsupervised electrical training certificate	\$21.30
(8) Journeyman or specialty electrician test or retest	\$50.10
(9) Reciprocal journeyman or specialty certificate	\$71.40
(10) Reinstatement of journeyman or specialty certificate	\$21.30
(11) Continuing education course submittal and approval, per course	\$42.60
(12) Continuing education course renewal, per course	\$21.30
(13) Refund processing fee. All requests for refunds will be assessed a processing fee	\$10.80

Note: Failure to appear for an examination results in forfeiture of the examination fee.

[Statutory Authority: RCW 43.22.350, 43.22.434, 43.22.480, 43.22.500, 18.27.070, 18.27.075, 70.87.030, 19.28.041, 19.28.051, 19.28.101, 19.28.121, 19.28.161, 19.28.201, 19.28.211, 19.28.341, 2001 c 159, and chapters 43.22, 19.28, 18.27, and 70.87 RCW. 01-12-035, § 296-401B-700, filed 5/29/01, effective 6/29/01. Statutory Authority: RCW 19.28.031, 19.28.551, 19.28.010, 19.28.101, 19.28.171, 19.28.191, 19.28.251, 19.28.470, 19.28.490, 67.42.050, 2000 c 238, and chapter 19.28 RCW. 01-01-097, § 296-401B-700, filed 12/15/00, effective 1/18/01.]

Chapter 296-800 WAC

SAFETY AND HEALTH CORE RULES

WAC

296-800-100	Introduction.
296-800-110	Employer responsibilities: Safe workplace—Summary.
296-800-11005	Provide a workplace free from recognized hazards.
296-800-11010	Provide and use means to make your workplace safe.
296-800-11015	Prohibit employees from entering, or being in, any workplace that is not safe.
296-800-11020	Construct your workplace so it is safe.
296-800-11025	Prohibit alcohol and narcotics from your workplace.
296-800-11030	Prohibit employees from using equipment or materials that do not meet the applicable WISHA requirements.
296-800-11035	Establish, supervise, and enforce rules that lead to a safe and healthy work environment that are effective in practice.
296-800-120	Rule.
296-800-12005	Employee responsibilities.
296-800-130	Safety committees and safety meetings—Summary.

296-800-13005	Establish a safety committee or have safety meetings.
296-800-13010	Make sure that each meeting includes a discussion of established safety topics.
296-800-13015	Make sure that safety committee meeting minutes are recorded and preserved.
296-800-140	Accident prevention program.
296-800-14005	Develop a formal, written accident prevention program.
296-800-14020	Develop, supervise, implement, and enforce safety and health training programs that are effective in practice.
296-800-14025	Make sure your accident prevention program is effective in practice.
296-800-150	Rule summary.
296-800-15005	Make sure that first-aid trained personnel are available to provide quick and effective first aid.
296-800-15010	Make sure first-aid training contains required subjects.
296-800-15015	Document your first-aid training.
296-800-15020	Make sure appropriate first-aid supplies are readily available.
296-800-15025	Provide a first-aid station when required.
296-800-160	Summary.
296-800-16005	Do a hazard assessment for PPE.
296-800-16010	Document your hazard assessment for PPE.
296-800-16015	Select appropriate PPE for your employees.
296-800-16020	Provide PPE to your employees.
296-800-16025	Train your employees to use PPE.
296-800-16030	Retrain employees to use PPE, if necessary.
296-800-16035	Document PPE training.
296-800-16040	Require your employees to use necessary PPE on the job.
296-800-16045	Keep PPE in safe and good condition.
296-800-16050	Make sure your employees use appropriate eye and face protection.
296-800-16055	Make sure your employees use appropriate head protection.
296-800-16060	Make sure your employees use appropriate foot protection.
296-800-16065	Make sure your employees use appropriate hand protection.
296-800-16070	Make sure your employees are protected from drowning.
296-800-170	Employer chemical hazard communication—Introduction.
296-800-17005	Develop, implement, maintain, and make available a written Chemical Hazard Communication Program.
296-800-17010	Identify and list all the hazardous chemicals present in your workplace.
296-800-17015	Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used.
296-800-17020	Make sure material safety data sheets (MSDSs) are readily accessible to your employees.
296-800-17025	Label containers holding hazardous chemicals.
296-800-17030	Inform and train your employees about hazardous chemicals in your workplace.
296-800-17035	Follow these rules for laboratories using hazardous chemicals.
296-800-17040	Follow these rules for handling chemicals in factory-sealed containers.
296-800-17045	Translate certain chemical hazard communication documents upon request.
296-800-17050	Attempt to obtain a material safety data sheet (MSDS) upon request.
296-800-17055	Items or chemicals exempt from the rule, and exemptions from labeling.
296-800-180	Material safety data sheets (MSDSs) as exposure records.
296-800-18005	Preserve exposure records for at least 30 years.
296-800-18010	Inform current employees of exposure records.
296-800-18015	Provide access to exposure records.
296-800-18020	Transfer records when ceasing to do business.
296-800-190	Summary/rule.
296-800-19005	Provide a safety bulletin board in your workplace.
296-800-200	WISHA poster.
296-800-20005	Post and keep a WISHA poster in your workplace.
296-800-210	Lighting.
296-800-21005	Provide and maintain adequate lighting.
296-800-220	Housekeeping, drainage, and storage—Summary.
296-800-22005	Keep your workplace clean.
296-800-22010	Sweep and clean your workplace to minimize dust.
296-800-22015	Keep your workplace free of obstacles that interfere with cleaning.
296-800-22020	Control pests in your workplace.
296-800-22022	Make sure floors are maintained in a safe condition.
296-800-22025	Keep your workroom floors dry, when practical.

296-800-22030	Provide proper drainage.	296-800-31040	Provide outdoor exit routes that meet these requirements.
296-800-22035	Store things safely.	296-800-31045	Minimize danger to employees while they are using emergency exit routes.
296-800-22040	Control vegetation in your storage areas.	296-800-31050	Mark exits adequately.
296-800-230	Summary.	296-800-31053	Provide adequate lighting for exit routes and signs.
296-800-23005	Provide safe drinking (potable) water in your workplace.	296-800-31055	Maintain the fire retardant properties of paints or other coatings.
296-800-23010	Clearly mark the water outlets that are not fit for drinking (nonpotable).	296-800-31060	Maintain emergency safeguards.
296-800-23015	Make sure that systems delivering not-fit-for-drinking (nonpotable) water prevent backflow into drinking water systems.	296-800-31065	Maintain exit routes during construction and repair.
296-800-23020	Provide bathrooms for your employees.	296-800-31067	Provide doors in freezer or refrigerated rooms that open from the inside.
296-800-23025	Provide convenient, clean washing facilities.	296-800-31070	Install and maintain an appropriate employee alarm system.
296-800-23030	Keep containers used for garbage or waste in a sanitary condition.	296-800-31075	Establish procedures for sounding emergency alarms.
296-800-23035	Remove garbage and waste in a way that does not create a health hazard.	296-800-31080	Test the employee alarm system.
296-800-240	Summary.	296-800-320	Summary.
296-800-24005	Control tobacco smoke in your building.	296-800-32005	Report the death, probable death of any employee, or the in-patient hospitalization of 2 or more employees within 8 hours.
296-800-24010	Control tobacco smoke that comes in from the outside.	296-800-32010	Make sure that any equipment involved in an accident is not moved.
296-800-250	Summary.	296-800-32015	Assign people to assist the department of labor and industries.
296-800-25005	Provide fixed stairs where required.	296-800-32020	Conduct a preliminary investigation for all serious injuries.
296-800-25010	Provide stairs that minimize hazards.	296-800-32025	Document the investigation findings.
296-800-25015	Provide handrails and stair railings.	296-800-330	Releasing accident investigation reports.
296-800-260	Summary.	296-800-340	Protecting the identity of the source of confidential information.
296-800-26005	Guard or cover floor openings and floor holes.	296-800-350	Introduction.
296-800-26010	Protect open-sided floors and platforms.	296-800-35002	Types of workplace inspections.
296-800-270	Summary.	296-800-35004	Scheduling inspections.
296-800-27005	Do not overload floors or roofs.	296-800-35006	Inspection techniques.
296-800-27010	Make sure that floors are safe.	296-800-35008	Response to complaints submitted by employees or their representatives.
296-800-27015	Make sure floors can support equipment that moves or has motion.	296-800-35010	Citations mailed after an inspection.
296-800-27020	Post approved load limits (weight limits) for floors.	296-800-35012	Employees (or their representatives) can request a citation and notice.
296-800-280	Basic electrical rules.	296-800-35016	Posting a citation and notice and employee complaint information.
296-800-28005	Inspect all electrical equipment your employees use to make sure the equipment is safe.	296-800-35018	Reasons to assess civil penalties.
296-800-28010	Make sure all electrical equipment is used for its approved or listed purpose.	296-800-35020	Minimum penalties.
296-800-28015	Make sure electrical equipment used or located in wet or damp locations is designed for such use.	296-800-35022	Base penalty calculations—Severity and probability.
296-800-28020	Make sure electrical equipment that is not marked is not used.	296-800-35024	Severity rate determination.
296-800-28022	Identify disconnecting means.	296-800-35026	Probability rate determination.
296-800-28025	Maintain electrical fittings, boxes, cabinets and outlets in good condition.	296-800-35028	Determining the gravity of a violation.
296-800-28030	Maintain all flexible cords and cables in good condition and use safely.	296-800-35030	Base penalty adjustments.
296-800-28035	Guard electrical equipment to prevent your employees from electrical hazards.	296-800-35032	Types of base penalty adjustments.
296-800-28040	Make sure electrical equipment is effectively grounded.	296-800-35038	Maximum base penalty amount.
296-800-28045	Make sure electrical equipment has overcurrent protection.	296-800-35040	Reasons for increasing civil penalty amounts.
296-800-290	Summary.	296-800-35042	Employers must certify that violations have been abated.
296-800-29005	Inspect your portable metal ladders periodically.	296-800-35044	For willful, repeated, or serious violations, submit additional documentation.
296-800-29010	Make sure your portable metal ladders are kept in good condition.	296-800-35046	Submitting correction action plans.
296-800-29015	Use your portable metal ladders safely.	296-800-35048	Submit progress reports to the department when required.
296-800-29020	Inspect your portable wooden ladders frequently.	296-800-35049	WISHA determines the date by which abatement documents must be submitted.
296-800-29025	Make sure your portable wooden ladders are kept in a good condition.	296-800-35050	Inform affected employees and their representatives of abatement actions you have taken.
296-800-29030	Use your portable wooden ladders safely and for their intended purpose.	296-800-35052	Tag cited moveable equipment to warn employees of a hazard.
296-800-29035	Safely use a portable wooden ladder when working more than 25 feet above ground.	296-800-35056	You can request more time to comply.
296-800-29040	Use wooden stepladders safely.	296-800-35062	WISHA's response to your request for more time.
296-800-300	Summary—Portable fire extinguishers.	296-800-35063	Post the department's response.
296-800-30005	Provide portable fire extinguishers in your workplace.	296-800-35064	A hearing can be requested about the department's response.
296-800-30010	Select and distribute portable fire extinguishers in your workplace.	296-800-35065	Post the department's hearing notice.
296-800-30015	Make sure that portable fire extinguishers are kept fully charged, in operable condition, and left in their designated places.	296-800-35066	Hearing procedures.
296-800-30020	Inspect and test all portable fire extinguishers.	296-800-35072	Post the hearing decision.
296-800-30025	Train your employees to use portable fire extinguishers.	296-800-35076	Employers and employees can request an appeal of a citation and notice.
296-800-310	Summary.	296-800-35078	Await the department's response to your appeal request.
296-800-31005	Provide an adequate number of exit routes.	296-800-35080	Department actions when reassuming jurisdiction over an appeal.
296-800-31010	Make sure that exit routes are large enough.	296-800-35082	Appealing a corrective notice.
296-800-31015	Make sure that exit routes meet their specific design and construction requirements.	296-800-35084	Notify employees.
296-800-31020	Make sure that each exit route leads outside.	296-800-360	Rule.
296-800-31025	Provide unobstructed access to exit routes.	296-800-36005	Comply with standards national organizations or of federal agencies when referenced in WISHA rules.
296-800-31030	Exit doors must be readily opened from the inside.	296-800-370	Definitions.
296-800-31035	Use side-hinged doors to connect rooms to exit routes.		

WAC 296-800-100 Introduction. The WISHA Core Rules: Your foundation for a safe and healthful workplace. This book contains 26 basic safety and health rules that affect all employers and should cover almost everything

small, nonmanufacturing employers need for a safe and healthful workplace. These core rules include requirements for your Accident Prevention Program, personal protective equipment, first aid, and hazard communication program.

Note: You may need to comply with other WISHA rules. For a complete list of WISHA rules, see the resources section of this book.

Why does workplace safety and health matter to you?

On average, two people lose their lives every week in job-related incidents in Washington state. Each year, more than 250,000 workers' compensation claims are accepted for work-related injuries and illnesses. Medical care and wage replacement for these injured workers costs more than a billion dollars. The indirect costs of workplace injuries are even larger in terms of lost quality of life, personal financial ruin, operating costs of business, and decreased profitability. Employers and employees who work together to identify and control hazards on the job can save lives and money while improving business and productivity.

What are L&I and WISHA?

The department of labor and industries (L&I) is a state agency that provides many different services:

- Workplace safety and health, including inspections and enforcement, consultation, technical assistance, training, education and grants. (WISHA)
- Workers' compensation (or industrial insurance), including claims management, rate setting, medical payments, and research.
- Specialty compliance services, including contractor registration, electrical inspections, boiler and elevator inspections, apprenticeship programs and employment standards.

Many of these services are available from L&I's twenty-two regional offices (see the resource section of this book for a list of regional offices).

In 1973, the legislature passed the Washington Industrial Safety and Health Act or WISHA (Revised Code of Washington (chapter 49.17 RCW)). WISHA requires employers to provide safe and healthful workplaces for all employees. It gives L&I the responsibility to establish and enforce workplace safety and health rules. These rules are the Washington Administrative Code (WAC).

How does WISHA work?

WISHA covers nearly all employers and employees in Washington, including employees who work for the state, counties, and cities. L&I inspectors enforce WISHA rules by inspecting workplaces without advance notice including investigations of work-related deaths, injuries, and employees' complaints. When WISHA inspectors find a violation in a workplace, they issue a citation to the employer and a penalty may be attached. If you have questions about whether you are covered by WISHA, call 1-800-4BE SAFE (1-800-423-7233) or a local office of L&I.

What is OSHA and its relationship to WISHA?

The U.S. Congress created the Occupational Safety and Health Administration (OSHA) in 1971 to develop and enforce workplace safety and health rules throughout the country. States may choose to run their own safety and health programs as long as they are at least as effective as OSHA. Washington state has chosen to run its own program and most

employers in the state, therefore, are subject to enforcement by L&I and not by federal OSHA.

In Washington state, OSHA covers workplaces with federal employees, nonfederal employees working on federal reservations and military bases, employees working on floating worksites (floating dry docks, fishing boats, construction barges), and employees working for tribal employers on tribal lands.

Does WISHA apply to you?

WISHA applies to almost every employer and employee in Washington. WISHA applies to you if:

- You hire someone to work for you as an employee, including workers from a temporary agency.
- You are hired to work for someone as their employee.
- You own your own business or you are a corporate officer and have elected industrial insurance coverage for yourself.
- You have a contract with someone else that primarily involves personal labor, even though you are not required to pay industrial insurance or unemployment insurance premiums.
- You volunteer your personal labor, or you have volunteers working for you who receive any benefit or compensation.

If you have any questions about your particular situation, call **1-800-4BE SAFE (1-800-423-7233)** or contact your local office of L&I for help. See the resource section of this book for a complete list of L&I offices.

Are there other safety and health rules I need to know about?

In addition to the rules in the *WISHA Safety and Health Core Rules* book, there are other general WISHA rules that may apply to employers, depending upon the industry and workplace activities. See the resource section of this book for a complete list of WISHA rules or go to the website for all the state rules administered by L&I at <http://www.wa.gov/lni/home/wacs.htm>. If you have questions about these rules or would like copies of them, call 1-800-4BE SAFE (1-800-423-7233) or your local office of L&I.

How do the WISHA rules relate to fire, building and electrical codes?

Fire codes: WISHA rules contain basic requirements for portable fire extinguishers, exit routes, housekeeping, storage, stairs and electrical hazards for the protection of employees in your workplace. The rules contained in this book are the most basic requirements to make sure that as an employer you provide a safe and healthy work environment. However, these are not the only rules regarding the requirements for portable fire extinguishers, exit routes, housekeeping, storage, stairs and electrical equipment. The fire marshal and local fire authorities enforce the Uniform Fire Code (UFC). WISHA and UFC differ in some areas, for example UFC

requires exit sign lettering to be 6" or more and WISHA only states that the letters have to be clearly visible. Fire codes have more detailed and extensive requirements for the protection of the public than WISHA. Some codes overlap with WISHA requirements.

Building and electrical codes: WISHA rules are minimum requirements regardless of when the building was built or remodeled. Buildings must also comply with building and electrical codes at the time of construction. If you remodel, you must comply with the building and electrical codes applicable at that time. Building authorities and electrical inspection authorities enforce rules from the Uniform Building Code (UBC), and the National Electrical Code (NEC).

You are encouraged to call your local fire, building or electrical authority. For more information on the requirements in your area look in the government section of your phone book. Copies of these codes are available at your local library.

How can WISHA help employers and employees?

Employers can ask WISHA safety and health consultation staff for free, confidential consulting services in your workplace. WISHA safety and health professionals can examine your workplace and make recommendations about how to comply with WISHA rules. If the consultant finds hazards, the employer will be given a reasonable period of time to correct the hazard without citation or penalty.

Sometimes you might have to wait for an appointment because of the demand for these services. You still must provide a safe workplace while you wait for a consultation.

WISHA offers a wide variety of free services:

- Safety and health workshops held in locations throughout the state
- A comprehensive safety and health video lending library
- Safety and health publications geared for both employer and employee
- Website with on-line publications and learning opportunities

Note: By law, WISHA consultants do not have any enforcement authority.

Link: For more information, call 1-800-4BE SAFE (1-800-423-7233) or visit <http://www.wa.gov/lni/home/training.htm>.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-100, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-100, filed 5/9/01, effective 9/1/01.]

WAC 296-800-110 Employer responsibilities: Safe workplace—Summary. Your responsibility: To provide a safe and healthy workplace free from recognized hazards.

You must:

Provide a workplace free from recognized hazards.

WAC 296-800-11005.

Provide and use means to make your workplace safe.

WAC 296-800-11010.

Prohibit employees from entering, or being in, any workplace that is not safe.

WAC 296-800-11015.

Construct your workplace so it is safe.

WAC 296-800-11020.

Prohibit alcohol and narcotics from your workplace.

WAC 296-800-11025.

Prohibit employees from using equipment or materials that do not meet requirements.

WAC 296-800-11030.

Establish, supervise, and enforce rules that lead to a safe and healthy work environment that are effective in practice.

WAC 296-800-11035.

Note: •Use these rules where there are no specific rules applicable to the particular hazard.

•Employees may discuss and participate in any WISHA safety and health related practice and may refuse to perform dangerous tasks without fear of discrimination. Discrimination includes: Dismissal, demotion, loss of seniority, denial of a promotion, harassment, etc. (see chapter 296-360 WAC, Discrimination) pursuant to RCW 49.17.160 for a complete description of discrimination and the department's responsibility to protect employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-110, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-110, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11005 Provide a workplace free from recognized hazards. You must:

- Provide your employees a workplace free from recognized hazards that are causing, or are likely to cause, serious injury or death.

Note: A hazard is recognized if it is commonly known in the employer's industry, or if there is evidence that the employer knew or should have known of the existence of the hazard, or if it can be established that any reasonable person would have recognized the hazard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-11005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-11005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11010 Provide and use means to make your workplace safe. You must:

- Provide and use safety devices, safeguards, and use work practices, methods, processes, and means that are reasonably adequate to make your workplace safe.

– Do not remove, displace, damage, destroy or carry off any safety device, safeguard, notice or warning, furnished for use in any employment or place of employment.

– Do not interfere with use of any of the above.

– Do not interfere with the use of any method or process adopted for the protection of any employee.

– Do everything reasonably necessary to protect the life and safety of your employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-11010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11015 Prohibit employees from entering, or being in, any workplace that is not safe. You must:

- Prohibit employees from entering, or being in, any workplace that is not safe.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-11015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11020 Construct your workplace so it is safe. You must:

- Not construct, or cause to be constructed, a workplace that is not safe.
- This rule applies to employers, owners, and renters of property used as a place of employment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-11020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-11020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11025 Prohibit alcohol and narcotics from your workplace. You must:

- Prohibit alcohol and narcotics from your workplace, except in industries and businesses that produce, distribute, or sell alcohol and narcotic drugs.
- Prohibit employees under the influence of alcohol or narcotics from the worksite.

EXEMPTION: Employees who are taking prescription drugs, as directed by a physician or dentist, are exempt from this section, if the employees are not a danger to themselves or other employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-11025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11030 Prohibit employees from using equipment or materials that do not meet the applicable WISHA requirements. You must:

- Prohibit employees from using equipment, materials, tools, or machinery that fails to meet the applicable WISHA requirements, including the rules for specific industries.
- Be responsible for the safe condition of tools and equipment used by employees.

Note: This applies to all equipment, materials, tools, and machinery whether owned by the employer or under control of another firm or individual.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-11030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-11035 Establish, supervise, and enforce rules that lead to a safe and healthy work environment that are effective in practice. You must:

- Establish, supervise, and enforce rules that lead to a safe and healthy work environment that are effective in practice.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-11035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-120 Rule. Employee's responsibility: To play an active role in creating a safe and healthy workplace and comply with all applicable safety and health rules.

Note: Employees may discuss and participate in any WISHA safety and health related practice and may refuse to perform dangerous tasks without fear of discrimination. Discrimination includes: Dismissal, demotion, loss of seniority, denial of a promotion, harassment, etc. (see chapter 296-360 WAC, Discrimination) pursuant to RCW 49.17.160 for a complete description of discrimination and the department's responsibility to protect employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-120, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-120, filed 5/9/01, effective 9/1/01.]

WAC 296-800-12005 Employee responsibilities. Employees must:

- Study and follow all safe practices that apply to their work.
- Coordinate and cooperate with all other employees in the workplace to try to eliminate on-the-job injuries and illnesses.
- Apply the principles of accident prevention in their daily work and use proper safety devices and protective equipment as required by their employment or employer.
- Take care of all personal protective equipment (PPE) properly.
- Not wear torn or loose clothing while working around machinery.

Note: Things such as clothing, hair, and jewelry can get caught in machinery and be a hazard on the job.

Employees must:

- Report promptly to their supervisor every industrial injury or occupational illness.
- Not remove, displace, damage, or destroy or carry off any safeguard, notice, or warning provided to make the workplace safe.
- Not interfere with use of any safeguard by anyone in the workplace.
- Not interfere with the use of any work practice designed to protect them from injuries.
- Do everything reasonably necessary to protect the life and safety of employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-12005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-12005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-130 Safety committees and safety meetings—Summary. Your responsibility: To establish a workplace safety committee/meeting to develop and maintain a safe and healthy workplace for all employees.

You must:

Establish a safety committee or have safety meetings.

WAC 296-800-13005.

Make sure that each meeting includes a discussion of established safety topics.

WAC 296-800-13010.

Make sure that safety committee meeting minutes are recorded and preserved.

WAC 296-800-13015.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-130, filed 5/9/01, effective 9/1/01.]

WAC 296-800-13005 Establish a safety committee or have safety meetings. You must:

If:	Then:
You employ 11 or more employees on the same shift at the same location	You must establish a safety committee

<p>You have 10 or less employees or If you have 11 or more that meet these conditions:</p> <ul style="list-style-type: none"> • Work on different shifts and 10 or less employees are on each shift or • Work in widely separated locations and 10 or less employees are at each location 	<p>You may elect to have a safety meeting instead of a safety committee</p>
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You must:

Make sure your safety committee:

- Has both employer-selected and employee-elected members.

- The number of employer-selected members must be equal to or less than the number of employee-elected members.

- The term of employee-elected members must be a maximum of one year. This rule does not specify the number of terms a representative can serve.

- If there is an employee-elected member vacancy, a new member must be elected prior to the next scheduled meeting.

- Has an elected chairperson.
- Determines how often the safety committee will meet.

Note: • If the committee cannot agree on the frequency of safety meetings, the department of labor and industries' regional safety consultation representative must be consulted for recommendations (see the resource section in this book).

Note: Employees selected by the employees bargaining representative or union qualify as "employee-elected."

You must:

Make sure your safety committee:

- Determines when and where the safety committee will meet.

- Meetings cannot exceed one hour, unless extended by a majority vote of the committee.

Make sure safety meetings:

- Are held at least once a month; or weekly (or biweekly) if conditions arise that require discussions of safety problems.

- Be composed of at least one management representative, in addition to the crew/staff.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-13005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-13005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-13010 Make sure that each meeting includes a discussion of established safety topics. You must:

- At each safety committee or safety meeting:
 - Review safety and health inspection reports to help correct safety hazards.

- Evaluate the accident investigations conducted since the last meeting to determine if causes of the unsafe situation were identified and corrected.

- Evaluate the workplace accident and illness prevention program and discuss recommendations for improvement if needed.

- Document attendance.

[2002 WAC Supp—page 1416]

– Write down subject(s) discussed.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-13010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-13010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-13015 Make sure that safety committee meeting minutes are recorded and preserved. You must:

- Prepare minutes from each safety committee meeting:
 - Preserve them for one year.

- Make them available for review by safety and health consultation personnel of the department of labor and industries.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-13015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-140 Accident prevention program. Summary.

Your responsibility: To establish, supervise and enforce an accident prevention program (APP) that is effective in practice. (You may call this your total safety and health plan.)

You must:

- Develop a formal, written accident prevention program (APP).

WAC 296-800-14005.

Develop, supervise, implement, and enforce safety and health training programs that are effective in practice.

WAC 296-800-14020.

Make sure your accident prevention program (APP) is effective in practice.

WAC 296-800-14025.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-140, filed 5/9/01, effective 9/1/01.]

WAC 296-800-14005 Develop a formal, written accident prevention program. You must:

- Develop a formal accident prevention program that is outlined in writing. The program must be tailored to the needs of your particular workplace or operation and to the types of hazards involved.

Note: The term "accident prevention program" refers to your written plan to prevent accidents, illnesses, and injuries on the job. Your accident prevention program may be known as your safety and health plan, injury prevention program, or by some other name.

You must:

- Make sure your Accident Prevention Program contains at least the following elements:

- A safety orientation:

- ♦ A description of your total safety and health program.

- ♦ On-the-job orientation showing employees what they need to know to perform their initial job assignments safely.

- ♦ How and when to report on-the-job injuries including instruction about the location of first-aid facilities in your workplace.

- ♦ How to report unsafe conditions and practices.

- ♦ The use and care of required personal protective equipment (PPE).

◆ What to do in an emergency, including how to exit the workplace.

◆ Identification of hazardous gases, chemicals, or materials used on-the-job and instruction about the safe use and emergency action to take after accidental exposure.

– A safety and health committee.

(WAC 296-800-130.)

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-14005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-14020 Develop, supervise, implement, and enforce safety and health training programs that are effective in practice. You must:

• Develop, supervise, implement, and enforce training programs to improve the skill, awareness, and competency of all your employees in the field of occupational safety and health.

• Make sure training includes on-the-job instruction to employees prior to their job assignment about hazards such as:

- Safe use of powered materials-handling equipment, such as forklifts, backhoes, etc.
- Safe use of machine tool operations.
- Use of toxic materials.
- Operation of utility systems.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-14020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-14025 Make sure your accident prevention program is effective in practice. You must:

• Establish, supervise, and enforce your accident prevention program in a manner that is effective in practice.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-14025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-150 Rule summary. Your responsibility: Make sure first-aid trained personnel are available to provide quick and effective first aid.

You must:

Make sure that first-aid trained personnel are available to provide quick and effective first aid.

WAC 246-800-15005.

Make sure first-aid training contains required subjects.

WAC 296-800-15010.

Keep current and document your first-aid training.

WAC 296-800-15015

Make sure appropriate first-aid supplies are readily available.

WAC 296-800-15020.

Provide a first-aid station when required.

WAC 296-800-15025.

Note: Your workplace may be covered by separate first-aid rules. If you do any of the types of work listed below, you must follow separate industry specific rules:

Industry	Chapter (WAC)
Agriculture	296-307
Compressed air	296-36
Construction	296-155
Fire fighting	296-305

Industry

Logging

Sawmill

Ship building and repairing

Chapter (WAC)

296-54

296-78

296-304

You can get copies of these rules by calling 1-800-4BE SAFE (1-800-423-7233), or by going to <http://www.lni.wa.gov>.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-150, filed 5/9/01, effective 9/1/01.]

WAC 296-800-15005 Make sure that first-aid trained personnel are available to provide quick and effective first aid. You must:

• Choose one of the following two options to make sure that your employees have access to personnel who are trained in first aid.

Option 1:

Make sure first-aid trained employees are in your workplace to help your employees if they become hurt or ill on the job by doing the following:

– Make sure that:

◆ Each person in charge of employees has first-aid training; or

◆ Another person with first-aid training is present or available to your employees, whenever you have 2 or more employees present.

– Adequately post emergency telephone numbers in your workplace.

OR

Option 2:

Develop and maintain a written first-aid response plan for your workplace. If you choose this option, you must do all of the following:

– Determine how many, if any, employees should be trained in first-aid, based on the following factors:

◆ What type(s) of occupational hazards are present in your workplace?

◆ How likely is it that a workplace injury or illness will occur?

◆ How serious are the occupational hazards in your workplace?

◆ How remote is your workplace?

◆ How complex is your worksite in terms of size, design, etc.?

◆ What medical emergencies have occurred at your workplace in the past?

◆ How far away and how long does it take to get to emergency medical services?

Note: Employers who require their employees to provide first-aid must comply with the bloodborne pathogen rule, WAC 296-62-080.

You must:

• Make sure your first-aid response plan:

– Fits your work location, type of work, and environmental conditions.

– Identifies the available emergency medical services and access numbers and where they are posted.

– Describes the type of first-aid training employees receive, if applicable.

- Identifies the location(s) of first-aid supplies and/or first-aid stations.
- Identifies the contents of first-aid kits.
- Describes how first-aid supplies or kits will be inspected and maintained.
- Describes how injured or ill employees will have access to first-aid trained employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-15005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-15005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-15010 Make sure first-aid training contains required subjects. You must:

- Make sure that every two years, employees are trained in and able to demonstrate their skill and knowledge of the following subject areas:
 - Role and responsibilities of the first-aid provider.
 - Assessing a scene.
 - Performing an initial and ongoing assessment of an injured or ill person.
 - Scene safety.
 - Body substance isolation/bloodborne pathogens.
 - Performing an emergency move.
 - Placing an ill person in the recovery position.
 - Opening and maintaining an airway.
 - Providing rescue breathing.
 - Managing an obstructed airway.
 - Performing adult/one-rescuer CPR.
 - Recognizing the warning signs and symptoms of medical problems.
 - Recognizing and caring for an injured or ill person with decreased levels of responsiveness.
 - Controlling external bleeding and recognizing internal bleeding.
 - Recognizing and caring for victims of shock.
 - Recognizing and stabilizing spinal injury.
 - Recognizing and manually stabilizing suspected skeletal injuries.
 - Knowledge of voluntary provisions of first aid, consent and confidentiality.

Note: Assess your workplace to determine if there are certain job hazards and/or if the time and distance from emergency medical services indicate a need for training beyond the items listed above.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-15010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-15010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-15015 Document your first-aid training. You must:

- Keep a written record of your employees' first-aid training by keeping rosters, first-aid cards, or certificates. You may store your documentation on a computer, as long as the information is readily available when requested by personnel of the department of labor and industries.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-15015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-15020 Make sure appropriate first-aid supplies are readily available. You must:

- Make sure first-aid supplies are readily available.
- Make sure first-aid supplies at your workplace are appropriate to:
 - Your occupational setting.
 - The response time of your emergency medical services.

Note: First-aid kits from your local retailer or safety supplier should be adequate for most nonindustrial employers.

You must:

- Make sure that first-aid supplies are:
 - Easily accessible to all your employees.
 - Stored in containers that protect them from damage, deterioration, or contamination. Containers must be clearly marked, not locked, and may be sealed.
 - Able to be moved to the location of an injured or acutely ill worker.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-15020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-15025 Provide a first-aid station when required. You must:

- Provide a first-aid station with at least one first-aid trained employee available if there are fifty or more employees per shift at one location.
- Make sure the first-aid station:
 - Is well marked.
 - Is available to employees during all working hours.
 - Is equipped with first-aid supplies that are appropriate for your number of employees, occupational setting, and working conditions.
 - Has at least one portable first-aid kit.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-15025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-160 Summary. Your responsibility: To make sure that your employees have, use, and care for the appropriate personal protective equipment (PPE).

PPE is an item or items used to protect the eyes, face, head, body, arms, hands, legs, and feet such as goggles, helmets, head covers, gloves, rubber slickers, disposable coveralls, safety shoes, protective shields, and barriers.

You must:

Do a hazard assessment for PPE.

WAC 296-800-16005.

Document your hazard assessment for PPE.

WAC 296-800-16010.

Select appropriate PPE for your employees.

WAC 296-800-16015.

Provide PPE to your employees.

WAC 296-800-16020.

Train your employees to use PPE.

WAC 296-800-16025.

Retrain employees to use PPE, if necessary.

WAC 296-800-16030.

Document PPE training.

WAC 296-800-16035.

Require your employees to use necessary PPE on the job.
WAC 296-800-16040.

Keep your PPE safe and in good condition.

WAC 296-800-16045.

Make sure your employees use appropriate face and eye protection.

WAC 296-800-16050.

Make sure your employees use appropriate head protection.

WAC 296-800-16055.

Make sure your employees use appropriate foot protection.

WAC 296-800-16060.

Make sure your employees use appropriate hand protection.

WAC 296-800-16065.

Make sure your employees are protected from drowning.

WAC 296-800-16070.

Exemption: • WAC 296-800-16015, 296-800-16025, 296-800-16030, and 296-800-16035 do not apply to electrical protective equipment or respiratory protection. See chapters 296-24 WAC, Part L and chapter 296-62 WAC, Part E, for rules about these types of protective equipment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-160, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-160, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16005 Do a hazard assessment for PPE. You must:

• Look for and identify hazards or potential hazards in your workplace and determine if PPE is necessary on the job.

Note: PPE alone should not be relied on to provide protection for your employees. PPE should be used after all other reasonable means of reducing hazards have been carried out. Identifying hazards in your workplace should be built into your regular routine. You should take active steps to get rid of all identified hazards. For example, you can:

- Consider other ways to get hazardous jobs done.
- Reduce hazardous materials or processes.
- Apply engineering controls to reduce or eliminate hazards.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16010 Document your hazard assessment for PPE. You must:

• Verify that a hazard assessment for PPE has been done at your workplace and complete a written certification (paper or electronic format) that includes the:

- Name of the workplace
- Address of the workplace you inspected for hazards
- Name of person certifying that a workplace hazard assessment was done
- Date(s) the workplace hazard assessment was done
- Statement identifying the document as the certification of hazard assessment for PPE for the workplace

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16015 Select appropriate PPE for your employees. You must:

(1) Select appropriate PPE.

- Select appropriate PPE for your employees if hazards are present, or likely to be present.
- Select PPE for each at-risk employee to use for protection from the hazards identified in your workplace hazard assessment.

(2) Select PPE that properly fits each at-risk employee.

Note: The hazards in your workplace have special rules that apply to them.
For information about PPE for specific workplaces, see these WISHA rule books:

Construction Work	Chapter 296-155 WAC
Electrical Workers	Chapter 296-45 WAC
Fire Fighters	Chapter 296-305 WAC
General Occupational Health Standards	Chapter 296-62 WAC
General Safety and Health Standards	Chapter 296-24 WAC
Logging Operations	Chapter 296-54 WAC
Pulp, Paper and Paper Board Mills and Converters	Chapter 296-79 WAC
Ship Repairing, Ship Building and Shipbreaking	Chapter 296-304 WAC
Ski Area Facilities and Operations	Chapter 296-59 WAC
Telecommunication	Chapter 296-32 WAC
Textile Industry	Chapter 296-301 WAC

Note: For help in selecting PPE for your employees, you have several options. You may:

- Visit the OSHA website <http://www.osha-slc.gov/SLTC/personalprotectiveequipment/index.html>.
- Call 1-800-4BE SAFE (1-800-423-7233) for guidelines for selecting PPE.
- Consult with safety and health professionals knowledgeable in this area. See resource section for links to professional organizations.
- Discuss PPE choices with your employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-16015, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-16015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16020 Provide PPE to your employees. You must:

- Provide PPE wherever hazards exist from:
 - Processes or the environment
 - Chemical hazards
 - Radiological hazards or
 - Mechanical irritants that could cause injury or impairment to the function of any body part through absorption, inhalation, or physical contact.
- Provide necessary PPE to employees at no cost to the employee if the PPE:
 - Will be used to protect against hazardous materials
 - Is the type that would not reasonably or normally be worn away from the workplace, such as single use or disposable PPE.

Note: Examples of PPE that the employer must provide are:

- Boots or gloves that could become contaminated with hazardous materials in the workplace.

- Safety glasses, goggles, and nonprescription protective eye wear.
 - Goggles that fit over prescription eye wear.
 - Hard hats.
 - Full body harnesses and lanyards.
 - Single use or disposable PPE such as plastic type gloves used in the food service or medical industries.
- Examples of PPE that the employer may **not** have to provide are:
- Coats to protect against inclement weather.
 - Leather boots, with or without steel toes, that will not become contaminated on the job.
 - Prescription protective eye wear (except as part of a full face piece or hooded respirator).

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-16020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-16020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16025 Train your employees to use PPE. You must:

- Communicate your PPE selection decision to each at-risk employee.
- Provide training to each employee who is required to use PPE on the job. Each affected employee must be trained to know at least the following:
 - When PPE is necessary
 - What PPE is necessary
 - How to put on, take off, adjust, and wear PPE
 - Limitations of PPE
 - Proper care, maintenance, useful life, and disposal of PPE.
- Make sure before an employee is allowed to perform work requiring the use of PPE that the employee can:
 - Demonstrate an understanding of the training specified above; and
 - Demonstrate the ability to use PPE properly.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-16025, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-16025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16030 Retrain employees to use PPE, if necessary. You must:

- Retrain an employee when you have reason to believe the understanding, motivation, and skills required to use the PPE has not been retained. Circumstances where retraining is required include:
 - Changes in the workplace that make previous training out of date.
 - Changes in the types of PPE to be used make previous training out of date.
 - Work habits or demonstrated knowledge indicate that the employee has not retained the necessary understanding, skill, or motivation to use PPE.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16035 Document PPE training. You must:

- Document in writing that each employee using PPE has received and understood the required training.
- This documentation must include:
- Name of each employee
 - Date(s) of training
 - Subject of the training

[2002 WAC Supp—page 1420]

Note: Documentation may be stored on a computer as long as it is available to safety and health personnel from the department of labor and industries.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16040 Require your employees to use necessary PPE on the job. You must:

- Require your employees to use necessary PPE on the job.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16040, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16045 Keep PPE in safe and good condition. You must:

- Make sure all PPE is safe for the work to be performed.
- It must:
- Be durable.
 - Fit snugly.
 - Not interfere with the employee's movements.
 - Make sure PPE is used and maintained in a clean and reliable condition.
 - Defective equipment **MUST NOT** be used.
 - Make sure if employees provide their own PPE, that it is adequate for the workplace hazards, and maintained in a clean and reliable condition.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16045, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16050 Make sure your employees use appropriate eye and face protection. You must:

- Make sure that employees exposed to hazards that could injure their eyes and/or face use appropriate protection. Examples of these hazards include:
 - Flying particles.
 - Molten metal.
 - Liquid chemicals.
 - Acids or caustic liquids.
 - Chemical gases or vapors.
 - Any light that could injure the eyes such as lasers, ultraviolet, or infrared light.
- Make sure employees exposed to hazards from flying objects have eye protection with side protection, such as safety glasses with clip-on or slide-on side shields.
- Make sure eye protection for employees who wear prescription lenses:
 - Incorporates the prescription into the design of the eye protection; or
 - Is large enough to be worn over the prescription lenses without disturbing them.
- Make sure PPE used to protect the eyes and face meet the following specific ANSI (American National Standards Institute) standards: (Most commercially available PPE is marked with the specific ANSI requirements.)
 - PPE bought before February 20, 1995, must meet ANSI standard A87.1-1968.
 - PPE bought after February 20, 1995, must meet ANSI standard Z87.1-1989.

– If you use eye or face protection that does not meet these ANSI standards, you must show they are equally effective.

Note: ANSI is the American National Standards Institute that publishes nationally recognized safety and health requirements. Their address is:
ANSI (American National Standards Institute)
1819 L Street NW
Washington, DC 20036
Phone: (202) 293-8020
Fax: (202) 293-9287
<http://www.ansi.org>

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-16050, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-16050, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16055 Make sure your employees use appropriate head protection. You must:

(1) Make sure employees wear appropriate protective helmets.

- Where employees are exposed to hazards that could cause a head injury. Examples of this type of hazard include:

- Flying or propelled objects.
- Falling objects or materials.

- Where employees are working around or under scaffolds or other overhead structures.

- That helmets meet the following specific ANSI standards (most commercially available PPE is marked with specific ANSI requirements):

- Protective helmets bought before February 20, 1995, must meet ANSI standard Z89.1-1969.

- Protective helmets bought after February 20, 1995, must meet ANSI standard Z89.1-1986.

- If you use protective helmets that do not meet these ANSI standards, you must show they are equally effective.

(2) Make sure employees working near exposed electrical conductors that could contact their head wear a protective helmet designed (that meet the above ANSI standards) to reduce electrical shock hazard.

- Caps with metal buttons or metal visors must **not** be worn around electrical hazards.

(3) Make sure employees working around machinery or in locations that present a hair-catching or fire hazard wear caps or head coverings that completely cover their hair.

- Employees must wear a hair net that controls all loose ends when:

- Hair is as long as the radius of pressure rolls with exposed in-running nip points.

- Hair is twice as long as the circumference of exposed revolving shafts or tools in fixed machines.

- Employees must wear a hair covering of solid material when:

- The employee is exposed to an ignition source and may run into an area containing class-1 flammable liquids, such as ether, benzene, or combustible atmospheres if their hair is on fire.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16055, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16060 Make sure your employees use appropriate foot protection. You must:

(1) Use appropriate foot protection.

- Where employees are exposed to hazards that could injure their feet. Examples of these hazards are:

- Falling objects
- Rolling objects
- Piercing/cutting injuries
- Electrical hazards

- That meets specific ANSI requirements. (Most commercially available PPE is marked with specific ANSI requirements.)

- PPE bought before February 20, 1995, must meet ANSI standard Z41.1-1967.

- PPE bought after February 20, 1995, must meet ANSI standard Z41-1991.

- If you use foot protection that does not meet these ANSI standards, you must show it is equally effective.

(2) Make sure your employees wear calks or other suitable footwear to protect against slipping while they are working on top of logs.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16060, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16065 Make sure your employees use appropriate hand protection. You must:

- Make sure employees exposed to hazards that could injure their hands use appropriate hand protection. Examples of these hazards include:

- Absorbing harmful substances
- Severe cuts, lacerations or abrasions
- Punctures
- Chemical burns and/or thermal burns
- Harmful temperature extremes

- Make sure when choosing hand protection, you consider how well the hand protection performs relative to the:

- Task
- Conditions present
- Duration of use
- Hazards
- Potential hazards

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16065, filed 5/9/01, effective 9/1/01.]

WAC 296-800-16070 Make sure your employees are protected from drowning. You must:

(1) Provide and wear personal flotation devices (PFD).

- When they work in areas where the danger of drowning exists, such as:

- On the water.
- Over the water.
- Alongside the water.

Note: Employees are not exposed to the danger of drowning when:

- The water is known to be less than chest high on the employee.
- Employees are working behind standard height and strength guardrails.
- Employees are working inside operating cabs or stations that eliminate the possibility of accidentally falling into the water.
- Employees are wearing an approved safety belt with a lifeline attached that prevents the possibility of accidentally falling into the water.

You must:

• Provide your employees with approved United States Coast Guard PFDs. Ski belts or inflatable type PFDs are prohibited. The following are appropriate or allowable United States Coast Guard-approved PFDs:

Type of PFD	General Description
Type I	Off-shore life jacket, effective for all waters or where rescue may be delayed.
Type II	Near-shore buoyant vest, intended for calm, inland water or where there is a good chance of quick rescue.
Type III	Flotation aid, good for calm, inland water, or where there is a good chance of rescue.
Type V	Flotation aids such as board-sailing vests, deck suits, and work vests.

Note: Commercially available PFDs are marked or imprinted with the type of PFD.

• Inspect PFDs before and after each use for defects and make sure that defective PFDs are not used.

You must:

(2) Provide approved life rings with an attached line on all docks, walkways, and fixed installations on or adjacent to water more than five feet deep.

• Life rings must:

- Be United States Coast Guard approved 30 inch size.
- Have attached lines that are at least 90 feet in length.
- Have attached lines at least 1/4 inch in diameter.
- Have attached lines with a minimum breaking strength of 500 pounds.

- Be spaced no more than 200 feet apart.
- Be kept in easily visible and readily accessible locations.

• Life rings and attached lines must:

- Be maintained to retain at least 75 percent of their designed buoyancy and strength.

- Be provided in the immediate vicinity when employees are assigned work at other casual locations where the risk of drowning exists.

- Work assigned over water where the vertical drop from an accidental fall would be more than 50 feet, must be subject to specific procedures as approved by the department.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-16070, filed 5/9/01, effective 9/1/01.]

WAC 296-800-170 Employer chemical hazard communication—Introduction. Important:

Thousands of chemicals can be found in today's workplaces. These chemicals may have the capacity to cause health problems, from minor skin irritations to serious injuries or diseases like cancer.

The Employer Chemical Hazard Communication rule was developed to make sure employers and employees are informed about chemical hazards in the workplace.

This rule applies to:

• Employers engaged in businesses where chemicals are used, distributed, or produced for use or distribution.

• Contractors or subcontractors that work for employers engaged in businesses where chemicals are used, distributed, or produced for use or distribution.

Exemptions: •Certain products, chemicals, or items are exempt from this rule. Below is a summarized list of these exemptions. See WAC 296-800-17055 at the end of this rule to get complete information about these exemptions:

- Any hazardous waste or substance
- Tobacco or tobacco products
- Wood or wood products that are not chemically treated and will not be processed, for example, by sawing and sanding
- Food or alcoholic beverages
- Some drugs, such as retail or prescription medications
- Retail cosmetics
- Ionizing and nonionizing radiation
- Biological hazards
- Any consumer product or hazardous substance when workplace exposure is the same as that of a consumer

♦ Retail products used in offices in the same manner and frequency used by consumers can be termed "consumer products", and include things such as: Correction fluid, glass cleaner, and dishwashing liquid.

Example: If you use a household cleaner in your workplace in the same manner and frequency that a consumer would use it when cleaning their house, your exposure should be the same as the consumer's, you are exempt. A janitor using a household cleaner, such as bleach, throughout the day, is not considered to be a consumer, and is not exempt.

- Manufactured items that remain intact are exempt from this rule.
- Manufactured items that are fluids or in the form of particles are not exempt from this rule.

The following are examples:

Item	Covered by this rule	Not covered by this rule
Brick	Sawed or cut in half	Used whole or intact
Pipe	Cut by a torch	Bent with a tube bender
Nylon Rope	Burning the ends	Tying a knot

Note: • If you produce, import, distribute and/or repackage chemicals, or choose not to rely on labels or material safety data sheets provided by the manufacturer or importer, you must comply with chemical hazard communication for manufacturers, importers and distributors, WAC 296-62-054.

- You may withhold trade secret information under certain circumstances. See trade secrets, WAC 296-62-053, to find out what information may be withheld as a trade secret and what information must be released.

Your responsibility: To inform and train your employees about the hazards of chemicals they may be exposed to during normal working conditions, or in foreseeable emergencies by:

- Making a list of the hazardous chemicals present in your workplace
- Preparing a written Chemical Hazard Communication Program for your workplace
- Informing your employees about this rule and your program
- Providing training to your employees about working in the presence of hazardous chemicals
- Getting and keeping the material safety data sheets (MSDSs) for the hazardous chemicals
- Making sure that labels on containers of hazardous chemicals are in place and easy to read

You must:

Develop, implement, maintain, and make available a written Chemical Hazard Communication Program.

WAC 296-800-17005.

Identify and list all the hazardous chemicals present in your workplace.

WAC 296-800-17010.

Obtain and maintain material safety data sheets (MSDS) for each hazardous chemical used.

WAC 296-800-17015.

Make sure that material safety data sheets (MSDS) are readily accessible to your employees.

WAC 296-800-17020.

Label containers holding hazardous chemicals.

WAC 296-800-17025.

Inform and train your employees about hazardous chemicals in your workplace.

WAC 296-800-17030.

Follow these rules for laboratories using hazardous chemicals.

WAC 296-800-17035.

Follow these rules for handling chemicals in factory sealed containers.

WAC 296-800-17040.

The department must:

Translate certain chemical hazard communication documents upon request.

WAC 296-800-17045.

Attempt to obtain a material safety data sheet (MSDS) upon request.

WAC 296-800-17050.

Exemption:

Items or chemicals exempt from the rule, and exemptions from labeling.

WAC 296-800-17055.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-170, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-170, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17005 Develop, implement, maintain, and make available a written Chemical Hazard Communication Program. You must:

- Develop, implement, maintain, and make available a written Chemical Hazard Communication Program specifically for your workplace. The Chemical Hazard Communication Program must, at a minimum, include:

- A list of hazardous chemicals known to be present in your workplace.

- Procedures for making sure all containers are properly labeled.

- A description of how you are going to obtain and maintain your material safety data sheets (MSDSs).

- A description of how you are going to train and inform your employees about hazardous chemicals in their workplace.

- A description of how you are going to inform your employees about:

- ♦ Chemical hazards used during nonroutine tasks.

- ♦ The hazards associated with chemicals contained in unlabeled pipes in their work areas.

You must:

- Make sure your written chemical hazard communication program includes the following communication methods you will apply if you produce, use, or store hazardous chemicals at your workplace(s) in such a way that the employees of other employer(s) may be exposed:

- Provide the other employer(s) with a copy of the relevant material safety data sheets (MSDSs), or provide access to the MSDSs in a central location at the workplace.

- Inform the other employer(s) of any precautionary measures that need to be taken to protect employees during normal operating conditions and in foreseeable emergencies.

- Describe how to inform the other employer(s) of the labeling system used in the workplace.

Note: • Examples of employees of other employers who could be exposed to chemical hazards that you produce, use, or store in your workplace include employees of construction companies, cleaning services, or maintenance contractors visiting or working on-site.

- Your employees have the right to get chemical hazard communication information from other employers at workplaces where they are working; and

Employees of other employers have the right to get the information from you when they are working at your workplace.

- Include in your written Chemical Hazard Communication Program the methods that you will use to share information with other employers and their employees at your workplace(s) regarding:

- Access to MSDSs.

- Precautionary measures such as personal protective equipment (PPE) and emergency plans.

- Any labeling systems used at the workplace.

If you rely on another employer's Chemical Hazard Communication Program to share the information required and the program meets the requirements of this rule, document this in your own written Chemical Hazard Communication Program.

You must:

- Make your Chemical Hazard Communication Program available to your employees.

Note: • You must make the written Chemical Hazard Communication Program available, upon request, to employees, their designated representatives, the department and NIOSH, in accordance with the requirements of Access to records, WAC 296-62-052.

- Where employees must travel between workplaces during a workshift, that is, if their work is carried out at more than one geographical location, the written Chemical Hazard Communication Program may be kept at the primary workplace facility.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17010 Identify and list all the hazardous chemicals present in your workplace. You must:

- Identify all hazardous chemicals at your workplace.

- This includes any chemical that is known to be present in your workplace in such a way that employees may be exposed to it under normal conditions of use or in a foreseeable emergency.

- Create a list of these chemicals using the chemical or common name on the material safety data sheet (MSDS).

This list:

- Must be compiled for the workplace as a whole, or for individual work areas.
- Is necessary to make sure that all hazardous chemicals are identified and that MSDS, and labeling rules are met.
- Must be current.

Note: The following are some ways to determine whether a product is hazardous:

- Look for words on the label, such as "CAUTION," "WARNING," or "DANGER."
- Look for words or "hazard coding" that indicate that the chemical is flammable, an irritant, corrosive, carcinogenic, etc. "Hazard coding" refers to words, numbers, or colors that tell you a chemical is dangerous.
- Check the product's MSDS for hazard information. Examples of hazardous chemicals are: Acids, adhesives, caustics, fuels, paints, varnishes, shellacs and pesticides. Too many other classes of hazardous chemicals exist to list them all here. If you have any questions about a chemical you have at your workplace, contact your local L&I office (see the resource section of this book).

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17015 Obtain and maintain material safety data sheets (MSDSs) for each hazardous chemical used.

Note: MSDSs are a type of employee exposure record. Therefore, you must comply with the material safety data sheets (MSDSs) as exposure records, WAC 296-800-180, located in this book.

You must:

- Obtain a MSDS for each hazardous chemical used as soon as possible if the MSDS is not provided with the shipment of a hazardous chemical, from the chemical manufacturer or importer.

Note:

- To obtain a MSDS, you may try calling the manufacturer or checking their website.
- If you have a commercial account with a retailer or wholesaler, you have the right to request and receive a MSDS about hazardous chemicals you purchase.
- If a chemical is purchased from a retailer with no commercial accounts, you have the right to request and receive the manufacturer's name and address so that you can contact them and request a MSDS for the chemical.
- Whoever prepares the MSDS is required to mark all blocks on the form, even if there is no relevant information for that section.
- If you have problems getting a MSDS within 30 calendar days after making a written request to the chemical manufacturer, importer, or distributor, you can get help from WISHA. You may contact your local regional office for assistance or make a written request for assistance to the: Department of Labor and Industries
Right-to-Know Program
P.O. Box 44610
Olympia, Washington 98504-4610.
Include in your request:
 - A copy of the purchaser's written request to the chemical manufacturer, importer, or distributor.
 - The name of the product suspected of containing a hazardous chemical.
 - The identification number of the product, if available.
 - A copy of the product label, if available.
 - The name and address of the chemical manufacturer, importer, or distributor from whom the product was obtained.

You must:

- Maintain a MSDS for each hazardous chemical:
 - Keep copies of the required MSDSs for each hazardous chemical present in your workplace.

- Each MSDS must be in English. You may also keep copies in other languages.

Note

- If you choose not to rely on MSDSs or labels provided by the manufacturer or importer, you must comply with the Chemical hazard communication standard for manufacturers, importers, and distributors, WAC 296-62-054.
- It may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. MSDS can be designed to cover groups of hazardous chemicals in a work area.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17015, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17020 Make sure material safety data sheets (MSDSs) are readily accessible to your employees. You must:

- Make sure that MSDSs are readily accessible, easily obtained without delay during each work shift by employees when they are in their work area(s).
- Make sure that employees can immediately obtain the required MSDS information in an emergency.
 - Where employees must travel between workplaces during a workshift, such as when their work is carried out at more than one geographical location, the MSDSs may be kept at a central location at the primary workplace facility.
 - This can be done by means such as voice communication or laptop computer.

Note:

- Electronic access (such as computer or fax), microfiche, and other alternatives to maintaining paper copies of the MSDSs are permitted as long as they do not create barriers to immediate employee access in each workplace.
- Barriers to immediate access of electronic MSDSs may include:
 - Power outages
 - Equipment failure
 - System delays
 - Deficient user knowledge to operate equipment
 - Location of equipment outside the work area.
 Solutions to eliminating these and other possible barriers to access may require the availability of back-up systems, employee training, and providing access equipment in the work areas.
- MSDSs must also be made readily available, upon request, to the department in accordance with the requirements of material safety data sheets (MSDSs) as exposure records, WAC 296-800-180. NIOSH (National Institute for Occupational Safety and Health) must also be given access to MSDSs in the same manner.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17025 Label containers holding hazardous chemicals.

Exemptions:

- The following is a summary of items that are exempt from this rule:
 - Pesticides, when labeled as required by the Environmental Protection Agency (EPA).
 - Food, food additives, color additives, drugs, cosmetics, or medical/veterinary devices or products.
 - Alcoholic beverages not intended for industrial use.
 - Consumer products labeled as required by the Consumer Product Safety Commission.
 - Agriculture or vegetable seeds treated and labeled as required by the Federal Seed Act.
 For complete information about each of these, see WAC 296-800-17055.

Note: You are not required to label portable containers into which hazardous chemicals are transferred from labeled containers, if the chemical is used and controlled by the employee who performed the transfer within the same shift.

You must:

- Make sure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the following information:

- The identity of the hazardous chemical(s) using either the chemical or common name.

- Appropriate hazard warnings which give general information about the relevant health and physical hazards of the chemicals. This includes health effects information, such as information about organs most likely to be affected by the chemicals.

- For individual stationary process containers, you may use alternate labeling methods such as:

- ◆ Signs
 - ◆ Placards
 - ◆ Process sheets
 - ◆ Batch tickets
 - ◆ Operating procedures or
 - ◆ Other such written materials,

as long as the alternate method identifies the containers and conveys the required label information.

- Note:
- You are not required to list each component in a hazardous mixture on the label. If a mixture is referred to on a material safety data sheet (MSDS) by a product name, then the product name should be used as the identifier.
 - You may use words, pictures, symbols or any combination to communicate the hazards of the chemical.

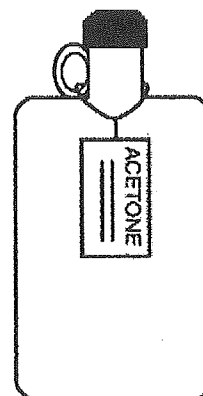
Sample Container Labels



- Be sure to train your employees so they can demonstrate a knowledge of the labeling system you use.
- Some alternative labeling systems do not communicate target organ information, so the employee will have to rely on training provided by the employer to obtain this information.

You must:

- Not remove or deface existing labels on incoming containers of hazardous chemicals (such as those marked with the United States Department of Transportation (USDOT) markings, placards and labels), unless the container is immediately labeled with the required information. You do not need to put on new labels if existing labels already provide the required information. If the package or container is sufficiently cleaned of residue and purged of vapors to remove any potential health or physical hazard, existing labels can be removed.



Above is an example of a labeled container. You may use a laminated or coated label, affixed to the container with a wire, to avoid deterioration of labels due to a solvent, such as acetone.

- Make sure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift.

Note: Employers with non-English speaking employees may use other languages in the warning information in addition to the English language.

- Make sure if the hazardous chemical is regulated by WISHA or OSHA in a substance-specific health rule, that the labels or other warnings are used according to those rules.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17025, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17030 Inform and train your employees about hazardous chemicals in your workplace. You must:

- Provide employees with effective information on hazardous chemicals in their work area at the time of their initial job assignment. Whenever a new physical or health hazard related to chemical exposure is introduced into their employees' work areas, information must be provided.

- Inform employees of:

- ◆ The requirements of this rule
 - ◆ Any operations in their work area where hazardous chemicals are present
 - ◆ The location and availability of your written Chemical Hazard Communication Program, including the list(s) of hazardous chemicals and material safety data sheets (MSDSs) required by this rule.

- Provide employees with effective training about hazardous chemicals in their work area at the time of their initial job assignment. Whenever a new physical or health hazard related to chemical exposure is introduced, the employees must be trained.

- Make sure employee training includes:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area.

Examples of these methods and observations may include:

- ◆ Monitoring conducted by you

◆ Continuous monitoring devices
 ◆ Visual appearance or odor of hazardous chemicals when being released

◆ Physical and health hazards of the chemicals in the work area, including the likely physical symptoms or effects of overexposure

◆ Steps employees can take to protect themselves from the chemical hazards in your workplace, including specific procedures implemented by you to protect employees from exposure to hazardous chemicals. Specific procedures may include:

- Appropriate work practices
- Engineering controls
- Emergency procedures
- Personal protective equipment to be used

■ Details of the chemical hazard communication program developed by you, including an explanation of the labeling system and the MSDS, and how employees can obtain and use the appropriate hazard information.

• Tailor information and training to the types of hazards to which employees will be exposed. The information and training may be designed to cover categories of hazards, such as flammability or cancer-causing potential, or it may address specific chemicals. Chemical-specific information must always be available through labels and MSDSs

• Make reasonable efforts to post notices in your employees' native languages (as provided by the department) if those employees have trouble communicating in English.

- Note:
- Interactive computer-based training or training videos can be used provided they are effective.
 - Your MSDSs may not have WISHA permissible exposure limits (PELs) listed. In some cases, WISHA PELs are stricter than the OSHA PELs and other exposure limits listed on the MSDSs you receive. If this is the case, you must refer to the WISHA PEL table, WAC 296-62-075, for the appropriate exposure limits to be covered during training.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17030, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17035 Follow these rules for laboratories using hazardous chemicals.

- Note:
- Laboratories are required to have a written Chemical hygiene plan under WAC 296-62-400, if applicable. They are **not** required to have a written Chemical Hazard Communication Program.
 - You may combine your accident prevention program and chemical hazard communication program to assist you in developing a chemical hygiene plan for your laboratory.

You must:

(1) Make sure that labels on incoming containers of hazardous chemicals are in place and readable.

(2) Maintain material safety data sheets (MSDSs) received with incoming shipments of hazardous chemicals and make them readily accessible to laboratory employees when they are in their work areas.

(3) Provide laboratory employees with information and training as described in: "Inform and train your employees about hazardous chemicals in your workplace," WAC 296-800-17030. You do not have to cover the location and the availability of the Hazard Communication Program.

- Note: Laboratory employers that ship hazardous chemicals are considered to be either chemical manufacturers or distribu-

tors. When laboratory employers ship hazardous chemicals they must comply with the rule, "hazard communication standards for chemical manufacturers, importers and distributors," WAC 296-62-054.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17035, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17040 Follow these rules for handling chemicals in factory-sealed containers. This applies to situations where employees only handle chemicals in factory-sealed containers that are not opened under normal use (such as those found in marine cargo handling, trucking, warehousing, or retail sales).

You must:

(1) Make sure that labels on incoming containers of hazardous chemicals are in place and readable.

(2) Keep or obtain material safety data sheets (MSDSs).

• Keep any MSDSs that are received with incoming shipments of the sealed containers of hazardous chemicals.

• If a factory-sealed container of hazardous chemicals comes without a MSDS, obtain one as soon as possible, if an employee requests it.

(3) Make sure that the MSDSs are readily accessible during each work shift to employees when they are in their work area(s).

(4) Inform and train your employees about hazardous chemicals in your workplace, to protect them in case of a hazardous chemical spill or leak from a factory-sealed container. You do not have to cover the location and availability of the written Chemical Hazard Communication Program.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-17040, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-17040, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17045 Translate certain chemical hazard communication documents upon request. The department must:

• Upon receipt of a written or verbal request, prepare and make available (within available resources) to employers or the public, a translation into Cambodian, Chinese, Korean, Spanish, or Vietnamese of any of the following:

– An employer's written Chemical Hazard Communication Program.

– A material safety data sheet or

– Written materials prepared by the department to inform employees of their rights described in this rule, regarding chemical hazard communication.

- Note: Written requests for translations should be directed to:
 Department of Labor and Industries
 Right-to-Know Program
 P.O. Box 44610
 Olympia, Washington 98504-4610.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-17045, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17050 Attempt to obtain a material safety data sheet (MSDS) upon request. The department must:

• Upon receipt of an employer's written request for a material safety data sheet, attempt to obtain the MSDS from the chemical manufacturer, importer, or distributor. When

the department receives the MSDS, the department must forward a copy of it to the purchaser at no cost. Small business employers will be given priority for this service.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-17050, filed 5/9/01, effective 9/1/01.]

WAC 296-800-17055 Items or chemicals exempt from the rule, and exemptions from labeling.

• Listed below are the full descriptions of the items or chemicals that are exempt, or not covered, by this rule:

– Any consumer product or hazardous substance, defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substance Act (15 U.S.C. 1261 et seq.) respectively, where you can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure that is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended.

– Any hazardous waste defined by the Hazardous Waste Management Act chapter 70.105 RCW, when subject to regulations issued under that act by the department of ecology that describes specific safety, labeling, personnel training, and other rules for the accumulation, handling and management of hazardous waste.

– Any hazardous waste defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that act by the Environmental Protection Agency.

– Any hazardous substance defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et seq.), when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with Environmental Protection Agency regulations.

– Tobacco or tobacco products.

– Wood or wood products, including lumber that will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to the employees is the potential for flammability or combustibility. Wood or wood products that have been treated with hazardous chemicals covered by this rule, and wood that may be subsequently sawed or cut, generating dust, are not exempted.

– Articles, meaning manufactured items other than a fluid or particle that:

◆ Are formed to a specific shape or design during manufacture;

◆ Have end use function(s) dependent in whole or in part upon their shape or design during end use; and

◆ Under normal conditions of use, do not release more than very small quantities, for example, minute or trace amounts of a hazardous chemical such as, emissions from a marking pen or a newly varnished wood chair, and do not pose a physical hazard or health risk to employees

– Food or alcoholic beverages that are sold, used, or prepared in a retail establishment such as a grocery store, restaurant, or drinking place, and foods intended for personal consumption by employees while in the workplace.

– Any drug, defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (for example, tablets or pills); drugs that are packaged by the chemical manufacturer for sale to consumers in a retail establishment (for example, over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (for example, first aid supplies). Aerosolized or cytotoxic drugs administered by a health care worker are not excluded.

– Cosmetics packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace.

– Ionizing and nonionizing radiation.

– Biological hazards.

• This rule does not require labeling of the following chemicals:

– Any pesticide defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that act and labeling regulations issued under that act by the Environmental Protection Agency.

– Any chemical substance or mixture defined in the Toxic Substance Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that act, and labeling requirements issued under that act by the Environmental Protection Agency.

– Any food, food additive, color additive, drug, cosmetic, or medical/veterinary device or product, including materials intended for use as ingredients in such products (for example, flavors and fragrances), are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum Toxin Act of 1913 (21 U.S.C. 151 et seq.) and regulations issued under those acts, when they are subject to the labeling requirements under those acts by either the Food and Drug Administration or the Department of Agriculture.

– Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that act, when subject to the labeling requirements of that act and labeling regulations issued under that act by the Bureau of Alcohol, Tobacco, and Firearms.

– Any consumer product or hazardous substance defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety rule or labeling requirement of those acts, or regulations issued under those acts by the Consumer Product Safety Commission.

– Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act (7 U.S.C. 1551 et seq.) and the labeling requirements issued under that act by the Department of Agriculture.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-17055, filed 5/9/01, effective 9/1/01.]

WAC 296-800-180 Material safety data sheets (MSDSs) as exposure records. Important: Exposure records contain information about employees' exposure to toxic substances or harmful physical agents. Material safety data sheets (MSDSs) are one type of exposure record. The

preservation of and access to exposure records is necessary to improve detection, treatment, and prevention of occupational diseases.

This rule supplements the chemical hazard communication rule by extending access to MSDSs, or their alternative, after employment and after the hazardous chemical is no longer used in the workplace. Your responsibility:

To preserve and provide access to material safety data sheets (MSDSs) or their alternative as exposure records.

You must:

Preserve exposure records for at least 30 years.

WAC 296-800-18005.

Inform current employees of exposure records.

WAC 296-800-18010.

Provide access to exposure records.

WAC 296-800-18015.

Transfer records when ceasing to do business.

WAC 296-800-18020.

- Note:
- Access to records, WAC 296-62-052, requires the preservation and access to other exposure records including records such as workplace monitoring data and biological monitoring results and medical records. If you keep these other types of employee exposure records or employee medical records, you must comply with these additional requirements.
 - This rule applies to every employer who maintains, makes, contracts for, or has access to MSDSs for chemicals used in their workplace.
 - The specific identity of a toxic substance may be withheld from a disclosable record if it is a verifiable trade secret. For trade secret requirements see WAC 296-62-053.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-180, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-180, filed 5/9/01, effective 9/1/01.]

WAC 296-800-18005 Preserve exposure records for at least 30 years. You must:

- Keep material safety data sheets (MSDSs) and analysis using MSDSs for at least thirty years, including current, former, and future employers receiving transferred records. Preserve MSDSs in any form, as long as the information is not altered and is retrievable. You may keep alternative records instead of MSDSs concerning the identity of a substance. The alternative record must also be kept for thirty years and contain the following information:

- Some record of the identity (chemical name, if known) of a substance or agent
- Where the substance or agent was used
- When the substance or agent was used

Note: Keeping alternative records may be less work than you think. When developing your hazard communication program's list of hazardous chemicals (WAC 296-800-17010), add the "where used" and "when used" information required by this rule.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-18005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-18010 Inform current employees of exposure records. You must:

- Inform current employees who are, or will be exposed to toxic substance or harmful physical agents of:
 - The existence, location, and availability of material safety data sheets (MSDSs) or alternative records, and any other records covered by this rule.

- The person responsible for maintaining and providing access to records.

- Their rights of access to these records.

- Exposure records when the employee first enters into employment and then once a year thereafter.

Note: Informing employees of the availability of these records may be accomplished by posting, group discussion or by individual notifications.

You must:

- Keep a copy of this rule and make copies available upon request to employees.

- Distribute to employees any informational materials about this rule that are made available to the employer by the department.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-18010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-18015 Provide access to exposure records. You must:

- Provide access, whenever requested by an employee or their designated representative, to a relevant exposure record:

- In a reasonable time, place, and manner.

- Within fifteen working days. If the employer cannot meet this requirement, they must inform the requesting party of the reason for the delay and the earliest date the record will be made available.

Note:

- Employee means any current, former or transferred worker.
- A relevant exposure record could be MSDSs or their alternative,

OR

- Analysis using MSDSs or their alternative.

You must:

- Make sure the department has prompt access to any exposure records and related analysis. This must be done without violation of any rights under the Constitution or the Washington Industrial Safety and Health Act that the employer chooses to exercise.

Note: Nothing in this rule is meant to prevent employees and collective bargaining agents from getting access to information beyond that required by this rule.

You must:

- Make sure that whenever an employee or designated representative requests an initial copy of an exposure record, related analysis or new information added to the record:

- A copy of the record is provided without cost to the employee or their representative or

- The facilities are made available for copying without cost to the employee or their representative or

- The record is loaned to the employee or their representative for a reasonable time to enable a copy to be made.

Note: Whenever a record has been previously provided without cost to an employee or designated representative, and they request additional copies, the employer may charge reasonable, nondiscriminatory administrative costs (e.g., search and copying expenses, but no overhead expenses).

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-18015, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-18015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-18020 Transfer records when ceasing to do business. You must:

- Transfer all material safety data sheets (MSDSs) as exposure records to the successor employer, who must do the following to these records:

- Received
- Preserve
- Keep unchanged

- If there is no successor to receive and preserve the employee exposure records:

- Notify affected current employees of their rights of access to records at least 3 months prior to the cessation of the employer's business

and

- Transfer the records to the department, if required by a specific WISHA safety and health rule.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-18020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-18020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-190 Summary/rule. Your responsibility: To provide a safety bulletin board.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-190, filed 5/9/01, effective 9/1/01.]

WAC 296-800-19005 Provide a safety bulletin board in your workplace. You must:

- Install and maintain a safety bulletin board in every fixed workplace (establishment) that has eight or more employees. Make sure the safety bulletin board is large enough to post information such as the following:

- Safety bulletins
- Safety newsletters
- Safety posters
- Accident statistics
- Other safety educational material.

Note: You may want to post your emergency phone numbers on the safety bulletin board.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-19005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-200 WISHA poster. Your responsibility: To post the WISHA poster, which informs your employees of their job safety and health protection rights.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-200, filed 5/9/01, effective 9/1/01.]

WAC 296-800-20005 Post and keep a WISHA poster in your workplace. You must:

- Post it where it can easily be seen by employees and keep it in good condition.

Note: You can order a free copy of the WISHA Poster (Form F416-081-000) from any labor and industries office. Find the labor and industries office closest to you by:

- Looking at <http://www.wa.gov/lni/pa/direct.htm> or
- Calling 1-800-4BE SAFE (1-800-423-7233) or
- Checking the resource section of this book for regional offices.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-20005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-20005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-210 Lighting. Your responsibility: To provide and maintain adequate lighting in your workplace.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-210, filed 5/9/01, effective 9/1/01.]

WAC 296-800-21005 Provide and maintain adequate lighting.

Note: This section establishes minimal levels of lighting for safety purposes only. Guidelines pertaining to optimal levels of lighting and illumination may be found in Practice for Industrial Lighting, ANSI/IES RP7-1979. (See the resource section of this book on how to contact ANSI.)

You must:

- Provide and maintain adequate lighting for all work activities in your workplace. See the following table.

Lighting Table		
Activity	Minimum acceptable average lighting level in an area:	Any one single measurement used to determine the average lighting level* cannot be less than:
	(Foot-candles)	(Foot-candles)
Indoor task	10	5
Outdoor task	5	2.5
Nontask activities for both indoor and outdoor	3	1.5

* Lighting levels must be measured at thirty inches above the floor/working surface at the task.

You must:

- Have adequate light for employees to see nearby objects that might be potential hazards or to see to operate emergency controls or other equipment, if general lighting is not available.

Note:

- Lighting levels can be measured with a light meter.
- Conversion information: 1 foot-candle = 1 lumen incident per square foot = 10.76 lux.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-21005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-21005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-220 Housekeeping, drainage, and storage—Summary. Your responsibility: To provide your employees with a clean, dry, pest-free workplace.

Note: The introduction has important information about building, electrical and fire codes that may apply to you in addition to WISHA rules. See "How do the WISHA rules relate to building, fire, and electrical codes" in the introduction section of this book.

You must:

Housekeeping

Keep your workplace clean.

WAC 296-800-22005.

Sweep and clean your workplace to minimize dust.

WAC 296-800-22010.

Keep your workplace free of obstacles that interfere with cleaning.

WAC 296-800-22015.

Control pests in your workplace.

WAC 296-800-22020.

Make sure floors are maintained in a safe condition.

WAC 296-800-22022.

Drainage

Keep your workroom floors dry, when practical.

WAC 296-800-22025.

Provide proper drainage.

WAC 296-800-22030.

Storage areas

Store things safely.

WAC 296-800-22035.

Control vegetation in your storage areas.

WAC 296-800-22040.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-220, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22005 Keep your workplace clean.

You must:

- Keep all areas of your workplace, passageways, storage rooms, and service rooms in a clean, orderly and sanitary condition to the extent the nature of the work allows.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22010 Sweep and clean your workplace to minimize dust. You must:

- Sweep and clean your workplace in a way that minimizes dust in the air as much as possible.
- When practical, clean after hours so that your employees are not exposed to dust in the air on the job.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22015 Keep your workplace free of obstacles that interfere with cleaning. You must:

- Keep your workplace clear of obstructions such as nails, splinters, loose boards and unnecessary holes and openings to make cleaning easier and more effective.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22020 Control pests in your workplace. You must:

- Make sure each building in your workplace is constructed, equipped and maintained so it restricts pests from entering or living in it. Pests include animals such as:

- Rodents (rats, mice, and squirrels)
- Birds (starlings, pigeons, and swallows)
- Insects (bees, wasps, and mosquitoes)

- Take steps to effectively control pests in your workplace, if they are detected.

- Carry out a continuing and effective control program in the areas of your workplace where pests have been detected.

Note: •By handling dead or live pests including their waste products, attached parasites and other contaminated materials, your employees may be exposed to certain health risks. These risks include, but are not limited to: Hanta virus, rabies, Lyme disease and psittacosis. Contact your local L&I office (see resource section of this book)

or the public health department for more information about health risks and proper pest handling and disposal techniques.

- "Workplace" includes storage areas.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-22020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-22020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22022 Make sure floors are maintained in a safe condition. You must:

- Make sure floors are kept free of debris. This includes:
 - Buildings
 - Platforms
 - Walkways and driveways
 - Storage yards
 - Docks
- Use a nonslip coating on all polished floors.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22022, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22025 Keep your workroom floors dry, when practical. You must:

- Do the following to help keep your employees dry if wet processes are used in your work area:
 - Maintain drainage away from the work area; and
 - Provide false floors, platforms, or other dry places where employees can stand, where practical, or
 - Provide appropriate waterproof footwear.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22030 Provide proper drainage. You must:

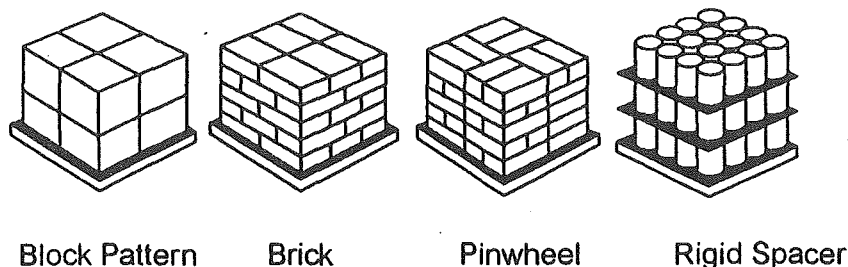
- Provide all areas where employees work, such as yards, basements, or garages, with adequate drainage.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22035 Store things safely. You must:

- Store materials so they do not create a hazard.
- Keep workplace storage areas free from accumulation of materials that could create hazards from tripping, fire, or explosion.
 - Secure stored items such as bundles, containers, and bags to prevent them from falling, sliding, or collapsing by doing one or more of the following:
 - Stacking
 - Racking
 - Blocking
 - Interlocking
 - Otherwise securing them
- Make sure stored items are limited in height so that they are stable and secure to prevent sliding or collapse.

Examples of Proper Material Storage



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-22040 Control vegetation in your storage areas. You must:

- Control vegetation in your storage areas when necessary to create a safe working environment.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-22040, filed 5/9/01, effective 9/1/01.]

WAC 296-800-230 Summary. Your responsibility: To provide safe drinking (potable) water, bathrooms, washing facilities, and waste disposal in your workplace

You must:

Provide safe drinking (potable) water in your workplace
WAC 296-800-23005.

Clearly mark the water outlets that are not-fit-for-drinking (nonpotable)

WAC 296-800-23010.

Make sure that systems delivering not-fit-for-drinking (nonpotable) water prevent backflow into drinking water systems.

WAC 296-800-23015.

Provide bathrooms for your employees

WAC 296-800-23020.

Provide convenient, clean washing facilities

WAC 296-800-23025.

Keep containers used for garbage or waste in a sanitary condition

WAC 296-800-23030.

Remove garbage and waste in a way that does not create a health hazard

WAC 296-800-23035.

Note: Some industries may have additional rules on bathrooms and washing facilities. For example:

Industry	WAC
Agriculture; indoor sanitation and temporary labor camps	chapter 296-307 WAC
Carcinogens; general regulated area requirements	WAC 296-62-07308
Charter boats	WAC 296-115-050
Compressed air work	WAC 296-36-160(5)
Construction	WAC 296-155-140

Hazardous waste operations and treatment, storage and disposal facilities WAC 296-62-31315

Temporary labor camps WAC 296-24-12507

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-230, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-230, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23005 Provide safe drinking (potable) water in your workplace. You must:

(1) Provide safe drinking (potable) water for employees for:

- Washing themselves
- Personal service rooms
- Cooking
- Washing premises where food is prepared or processed
- Washing food, eating utensils, or clothing

(2) Make sure when containers and dispensers are provided that:

• Your movable, or portable, drinking water dispensers are:

- Capable of being closed
- Kept in sanitary condition
- Equipped with a tap
- The use of open containers such as barrels, pails, and tanks from which employees must dip or pour drinking water are prohibited, even if the containers have covers.

(3) Prohibit employees from using shared drinking cups or utensils.

Definition: Potable water is water that you can safely drink that meets specific safety 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.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-23005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-23005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23010 Clearly mark the water outlets that are not fit for drinking (nonpotable). You must:

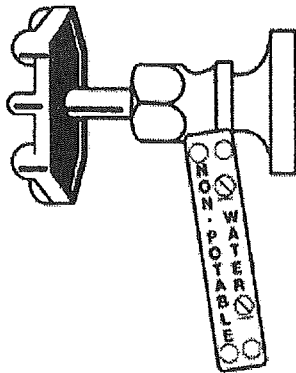
(1) Mark nonpotable water outlets, such as those used for industrial processes or fire fighting, so that no one will use them for:

- Drinking
- Washing themselves
- Cooking

- Washing food, eating utensils, or clothing.

(2) Prohibit the use of nonpotable water that could create unsafe conditions such as concentrations of chemicals, for example lead or chlorine, fecal coliform bacteria, or other substances.

- Note: As long as the water does not contain substances that could create unsafe conditions, then nonpotable water can be used for:
- Cleaning work premises that do not involve food preparation or food processing
 - Cleaning personal service rooms, such as bathrooms.



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-23010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-23010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23015 Make sure that systems delivering not-fit-for-drinking (nonpotable) water prevent backflow into drinking water systems. You must:

- Make sure that systems delivering not-fit-for-drinking (nonpotable) water prevent backflow into drinking water systems.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-23015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23020 Provide bathrooms for your employees.

- Exemption: You do not have to provide bathrooms for:
- Mobile crews, if the employees working there have transportation immediately available to nearby bathrooms that meet the requirements of this rule.
 - Work locations not normally attended by employees, if they have transportation immediately available to nearby bathrooms meeting the requirements of this rule.

You must:

(1) Provide bathrooms with the appropriate number of toilets for your employees at every workplace. See the chart below to determine how many toilets you need at your workplace.

Number of Employees*	Minimum Number of Toilets Required**
1 to 15	1
16 to 35	2
36 to 55	3
56 to 80	4
81 to 110	5

[2002 WAC Supp—page 1432]

111 to 150
Over 150

6

One additional toilet for each additional 40 employees

- * The "number of employees" used in this table means the maximum number of employees present at any one time on a regular shift.
- ** A shared bathroom (multiple toilets without enclosures) counts as one toilet no matter how many toilets it contains. In bathrooms used only by men, urinals may be substituted for up to one-third of the required toilets.

You must:

- Have the appropriate number of toilets for each sex, based on the number of male and female employees at your workplace. For example, if you have 37 men and 17 women, you need to have three toilets for the men and two toilets for the women, based on the chart provided in this section.

– Separate bathrooms for men and women are not required if the bathroom:

- ♦ Will be occupied by no more than one person at a time
- ♦ Can be locked from the inside
- ♦ Contains at least one toilet

- Make sure each toilet is in a separate compartment with a door and walls, or partitions to assure privacy.

(2) Provide toilet paper with a toilet paper holder for every toilet.

(3) Make sure the sewage disposal method does not endanger the health of employees.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-23020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23025 Provide convenient, clean washing facilities.

- Exemption: You do **not** have to provide washing facilities for:
- Mobile crews, if your employees working there have transportation immediately available to nearby washing facilities meeting the requirements of this rule.
 - Work locations not normally attended by employees, if they have transportation immediately available to nearby accessible washing facilities meeting the requirements of this rule.

You must:

- Provide the following for your employees:
 - Convenient, clean washing facilities, including sinks or basins for personal washing

– Hot and cold water, or lukewarm (tepid), running water in each sink and basin

- Hand soap or similar cleaning agents
- Individual paper or cloth hand towels; or
- Individual sections of clean continuous cloth toweling;

or

- Warm air blowers for drying hands, in a location near the sinks and basins.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-23025, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-23025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23030 Keep containers used for garbage or waste in a sanitary condition. You must:

- Do the following to maintain your waste containers:
 - Do not allow garbage to leak out of the containers
 - Be able to thoroughly clean the containers

– Make sure containers have tight fitting covers (unless you can keep them sanitary without).

Note: If you can demonstrate that you keep your waste container(s) clean, they do not have to meet the requirements.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-23030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-23035 Remove garbage and waste in a way that does not create a health hazard. You must:

- Remove all sweepings, solid and liquid wastes, refuse, and garbage as often as necessary to keep the workplace in a sanitary condition.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-23035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-240 Summary. Your responsibility: To control exposure to *environmental tobacco smoke* in your *office work environment*.

You must:

Control tobacco smoke in your building

WAC 296-800-24005.

Control tobacco smoke that comes in from the outside

WAC 296-800-24010.

Note: This rule does not preempt any federal, state, municipal, or other local authority's regulation of indoor smoking that is more protective than this section.

Definition: Office work environment is an indoor or enclosed occupied space where clerical work, administration, or business is carried out. In addition, it includes:

- Other workplace spaces controlled by the employer and used by office workers, such as cafeterias, meeting rooms, and washrooms.
- Office areas of manufacturing and production facilities, not including process areas.
- Office areas of businesses such as food and beverage establishments, agricultural operations, construction, commercial trade, services, etc.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-240, filed 5/9/01, effective 9/1/01.]

WAC 296-800-24005 Control tobacco smoke in your building. Exemption: The minimum criteria specified in this rule do not apply to outdoor structures provided for smokers such as gazebos or lean-tos.

You must:

- Prohibit *smoking* in your office work environment or
- Restrict *smoking* inside your office work environment to designated enclosed smoking rooms that meet the following minimum criteria:

- Identify *smoking* rooms clearly with signs.

- Make sure the designated *smoking* rooms are not in common areas, such as:

- ♦ Places where nonsmoking employees are required to work or visit

- ♦ Restrooms

- ♦ Washrooms

- ♦ Hallways

- ♦ Stairways

- ♦ Cafeterias/lunchrooms

- ♦ Meeting rooms

- Make sure that no employee is required to enter a designated *smoking* room while someone is smoking there.

- Conduct cleaning and maintenance work in designated *smoking* rooms when smokers are not present.

You must:

- Ventilate designated smoking rooms at a rate of at least 60 cubic feet per minute per smoker (calculated on the basis of the maximum number of smokers expected during the course of a normal working day), which can be supplied by transfer air from adjacent areas.

- Maintain enough negative air pressure in designated *smoking* areas to prevent smoke from migrating into non-smoking areas, at all times.

- Operate a separate mechanical exhaust system in designated *smoking* rooms, to make sure exhausted air moves directly outside, and does not recirculate into nonsmoking areas.

- Prohibit use of the designated *smoking* room if the mechanical exhaust system is not working properly, until repairs are completed.

Note: This ventilation rate is recommended for occupancies of no more than seven people for every 100 square feet of net occupied space in the designated smoking room.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-24005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-24010 Control tobacco smoke that comes in from the outside.

You must:

- Use *engineering or administrative controls* to minimize the amount of tobacco smoke that comes into your office(s) from outside the building.

- Make sure that outside smoking areas used by your employees are not close to doorways, air intakes, and other openings that may allow airflow directly into an office.

Note:

- Administrative controls change the way workers do their job, reducing work exposure to potential hazards. This includes such things as:
 - Job rotation
 - Wetting down dusty areas
 - Having employees shower after exposure to potentially harmful substances
 - Maintaining equipment properly
 - Cleaning up work areas to control the effect of potential hazards
- Engineering controls let you plan or physically change the machinery or work environment to prevent employee exposure to potential hazards. This includes any modification of plant equipment, processes, or materials to reduce employees' exposure to toxic materials or harmful physical agents.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-24010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-24010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-250 Summary. Your responsibility: To make sure stairs used by employees are safe

You must:

Provide fixed stairs where required

WAC 296-800-25005

Provide stairs that minimize hazards

WAC 296-800-25010

Provide handrails and stair railings

WAC 296-800-25015.

- Exemptions: This rule does **not** apply to:
- ◆ Stairs used exclusively for fire exit purposes
 - ◆ Construction operations (See WAC 296-24-76503 for the specifications for the safe design and construction of fixed general industrial stairs.)
 - ◆ Private buildings or residences
 - ◆ Articulated stairs (for example, stairs used at a marina)
 - ◆ Nonindustrial and monumental stairs 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 rule must apply.

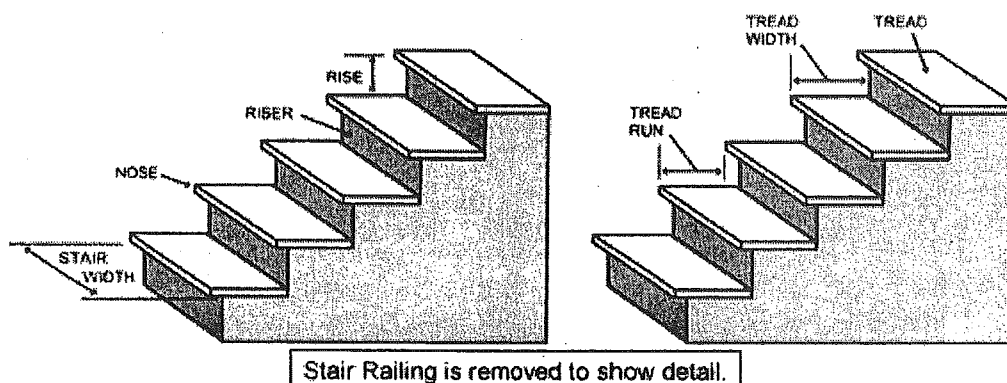
Note: The introduction has important information about building, electrical and fire codes that may apply to you in addition to WISHA rules. See "How do the WISHA rules relate to building, fire, and electrical codes" in the introduction section of this book.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-2500, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-250, filed 5/9/01, effective 9/1/01.]

WAC 296-800-25005 Provide fixed stairs where required. You must:

- Install fixed stairs where:
 - Employees travel between different levels on a predictable and regular basis.
 - Access to platforms is required to give routine attention to equipment under operation.

Stair Components



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-25005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-25005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-25010 Provide stairs that minimize hazards. You must:

- (1) Make sure stairs have slip-resistant treads.
- (2) Make sure that stairs with four or more risers have:
 - Railings on the open sides of all exposed stairways and stair platforms
 - Handrails on at least one side of closed stairways, preferably on the right side while descending
- (3) Provide a platform where doors or gates open directly on a stairway. The swing of the door must not reduce the effective width of the platform to less than 20 inches.

Note: To see all of the rules for building fixed stairs, refer to WAC 296-24-75011 and 296-24-765 of the General safety and health standard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-25010, filed 5/9/01, effective 9/1/01.]

[2002 WAC Supp—page 1434]

– Daily movement between elevations is required to gauge, inspect, and maintain equipment where those work assignments may expose employees to acids, caustics, gases, or other harmful substances.

– Carrying tools or equipment by hand is a normal work requirement.

- Not use spiral stairways except as secondary exit routes.

- Note:
- You can use fixed ladders for climbing elevated structures, such as tanks, towers, and overhead traveling cranes, when their use is common practice in your industry.
 - You can use winding stairways on tanks and similar round structures if the structure's diameter is at least five feet.
 - You could use a spiral stairway as an exit route in a restricted area that lacks room for a conventional stairway.

- Definitions:
- A stairway or fixed stairs is a series of steps and landings:
 - Leading from one level or floor to another.
 - Leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment.
 - Used more or less continuously or routinely by employees or only occasionally by specific individuals.
 - With three or more risers.
 - A riser is the vertical part of the step at the back of a tread that rises to the front of the tread above.
 - A tread is the horizontal part of the step. Tread width is the distance from the front of the tread to the back.

WAC 296-800-25015 Provide handrails and stair railings.

Exemption: Vehicle service pit stairways are exempt from the rules for stairway railing and guards, if they would prevent a vehicle from moving into a position over the pit.

- Definition:
- Handrail is a single bar or pipe on brackets from a wall or partition to provide a continuous handhold for persons using a stair.
 - Stair railing is a vertical barrier attached to a stairway with an open side, to prevent falls. The top surface of the stair railing is used as a handrail.

You must:

- Make sure stairways less than forty-four inches wide have:
 - At least one handrail, preferably on your right side as you go down the stairs, if both sides are enclosed.
 - At least one stair railing on the open side, if one side is open.
 - One stair railing on each side, if both sides are open.

• Make sure stairways more than forty-four inches wide but less than eighty-eight inches wide have:

- One handrail on each enclosed side.
- One stair railing on each open side.

• Make sure stairways at least eighty-eight inches wide have:

- One handrail on each enclosed side.
- One stair railing on each open side.
- One intermediate stair railing located approximately midway of the width.

• Equip winding stairs with a handrail, offset to prevent walking on all portions of the treads, less than six inches wide.

Note: To see all of the rules for building handrails and stairway railings, refer to WAC 296-24-75009 and 296-24-75011, of the general safety and health standard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-25015, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-25015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-260 Summary. Your responsibility: To safely guard floor openings, floor holes, and open-sided floors in your workplace.

You must:

Guard or cover floor openings and floor holes.

WAC 296-800-26005.

Protect open-sided floors and platforms.

WAC 296-800-26010.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-260, filed 5/9/01, effective 9/1/01.]

WAC 296-800-26005 Guard or cover floor openings and floor holes.

Definition: A **floor opening** is an opening in any floor, platform, pavement, or yard that measures at least twelve inches in its smallest dimension and through which a person can fall.

Examples of floor openings are:

- Hatchways
- Stair or ladder openings
- Pits
- Large manholes.

The following are **not** considered floor openings:

- Openings occupied by elevators
- Dumbwaiters
- Conveyors
- Machinery
- Containers

A **floor hole** is an opening in any floor, platform, pavement, or yard that measures at least one inch but less than twelve inches at its smallest dimension and through which materials and tools (but not people) can fall.

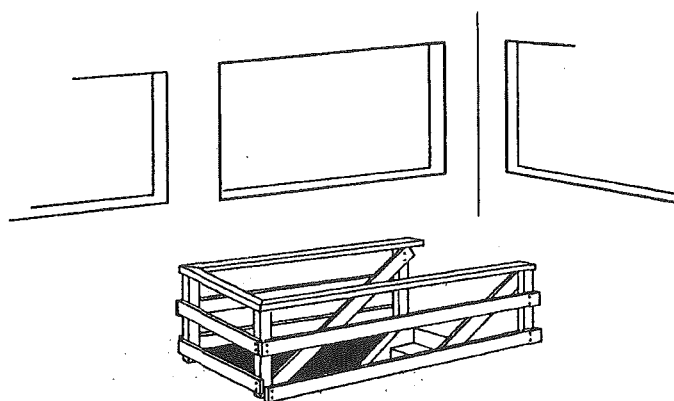
Examples of floor holes are:

- Belt holes
- Pipe openings
- Slot openings

You must:

(1) Guard stairway floor openings, temporary floor openings and floor holes.

• Protect all stairway floor openings with a railing. The railing must protect all open sides except the stairway entrance side.



Guardrail installed around all sides of stairway opening except at the entrance.

• Use a hinged cover and a removable railing where traffic across an infrequently used stairway floor opening prevents the installation of a fixed railing. This removable railing must protect all open sides except the stairway entrance side.

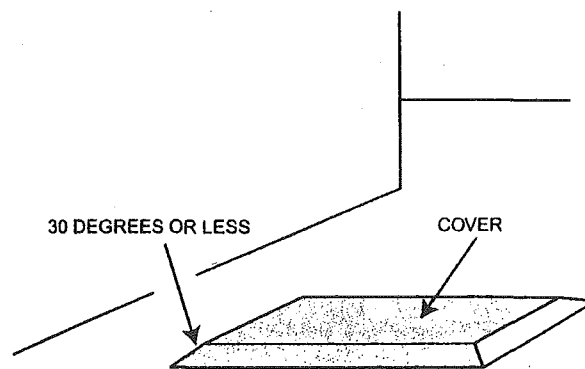
• Protect temporary floor openings by either a railing or by a person who constantly attends the opening.

• Protect exposed floor holes into which a person can accidentally walk by either:

- A railing with a toeboard on all open sides or
- A floor hole cover of standard strength and construction that can be hinged in place. When a floor hole cover is not in place, the hole must be protected by a removable railing or constantly attended by someone.

• Provide covers for floor openings. Floor opening covers may be of any material that has a safety factor of four, or is strong enough to hold up to four times the intended load. Covers that do not project more than one inch above the floor level may be used providing all edges are beveled (slanted) to prevent tripping. All hinges, handles, bolts, or other parts of a cover must set flush with the floor or cover surface.

• Provide covers for floor openings. Floor opening covers may be of any material that has a safety factor of four, or is strong enough to hold up to four times the intended load. Covers that do not project more than one inch above the floor level may be used providing all edges are beveled (slanted) to prevent tripping. All hinges, handles, bolts, or other parts of a cover must set flush with the floor or cover surface.



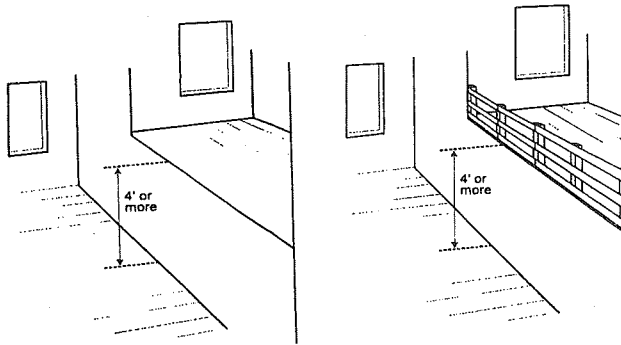
A cover that projects above the surface must be beveled to reduce the tripping hazard.

(2) Prevent tools and materials from falling through a floor hole. The floor hole must be protected by a cover that leaves an opening no more than one inch wide and is securely held in place. This applies only to floor holes that persons

cannot accidentally walk into on account of fixed machinery, equipment, or walls.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-26005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-26010 Protect open-sided floors and platforms.



OPEN FLOOR (Unguarded)

GUARDED FLOOR

You must:

(1) Guard open-sided floors and platforms.

- Guard open-sided floors and platforms four feet or more above adjacent floor or ground level by a railing. The entrance to a ramp, stairway, or fixed ladder does not need a railing.

- Guard open-sided floors, walkways and platforms above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and other similar hazards, regardless of height with a railing and toeboard.

(2) Make sure tools and loose materials are not left on overhead platforms and scaffolds.

Note:

- Where the guarding rules above do not apply because employees exposure to falls is infrequent (not on a predictable and regular basis), you must comply with the Personal Protective Equipment (PPE) rules (WAC 296-800-160) or other effective fall protection must be provided.
- You can find the minimum requirements for standard railings of various types of construction in WAC 296-24-75011.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-26010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-26010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-270 Summary. Your responsibility: To make sure that the buildings, floors, and other structures in your workplace are safe, well-built, and not overloaded

You must:

Not overload floors or roofs

WAC 296-800-27005.

Make sure that floors are safe

WAC 296-800-27010.

Make sure floors can support equipment that moves or has motion

WAC 296-800-27015.

Post approved load limits (weight limits) for floors

WAC 296-800-27020.

Note: The introduction has important information about fire, building and electrical codes that may apply to you in addition to WISHA rules. See "How do the WISHA rules relate

to fire, building and electrical codes" in the introduction section of this book.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-270, filed 5/9/01, effective 9/1/01.]

WAC 296-800-27005 Do not overload floors or roofs.

You must:

- Prohibit overloading roofs and floors of any building or other structure with more weight than is approved by the building official.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-27005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-27010 Make sure that floors are safe.

You must:

- Make sure that floors including their parts and structural members are safe.

- Make sure floors are of substantial construction and kept in good repair. This includes floors of:

- Buildings
- Platforms
- Walks and driveways
- Storage yards
- Docks

- Make sure that structures are designed, constructed, and maintained to provide a safety factor of 4 times the imposed maximum strain.

- If you notice bowing, cracking, or other indications of excessive strain on a structure, you must take action to make sure it is safe.

Note: This rule applies to all buildings or those that have had complete or major changes or repairs built after 5/7/74.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-27010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-27015 Make sure floors can support equipment that moves or has motion. You must:

- Make sure flooring of buildings, ramps, docks, trestles and other fixed structures that supports equipment that moves or has motion such as vibration, must not be less than two and one-half inch material.

Note: Where flooring is covered by steel floor plates, 2-inch material may be used.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-27015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-27020 Post approved load limits (weight limits) for floors. You must:

- Post approved load limits (weight limits) for floors used for mercantile, business, industrial or storage purposes in an obvious place.

- As the owner, or owner's agent, of a building (or other part of a workplace) post the load approved by the building official by:

- Supplying and affixing a durable metal sign that is marked with the approved load.
- Placing the metal sign in an obvious spot in the space to which it applies.
- Replacing the metal sign if it is lost, defaced, damaged, or removed.

Note: This rule applies to the floor that supports shelving, but not to the shelves themselves.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-27020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-27020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-280 Basic electrical rules. Summary.
Your responsibility: To protect your employees from hazards when working with electrical equipment, tools, and appliances.

You must:

Inspect all electrical equipment your employees use to make sure the equipment is safe.

WAC 296-800-28005.

Make sure all electrical equipment is used for its approved or listed purpose.

WAC 296-800-28010.

Make sure electrical equipment used or located in wet or damp locations is designed for such use.

WAC 296-800-28015.

Make sure electrical equipment that is not marked by the manufacturer cannot be used.

WAC 296-800-28020.

Identify disconnecting means.

WAC 296-800-28022.

Maintain electrical fittings, boxes, cabinets, and outlets in good condition.

WAC 296-800-28025.

Maintain all flexible cords and cables in good condition and use safely.

WAC 296-800-28030.

Guard electrical equipment to prevent your employees from electrical hazards.

WAC 296-800-28035.

Make sure electrical equipment is effectively grounded.

WAC 296-800-28040.

Make sure electrical equipment has overcurrent protection.

WAC 296-800-28045.

- Exemptions:
- These rules apply to all electrical equipment used in the workplace, except for:
 - Electrical installations and equipment on ships, aircraft and all automotive vehicles other than mobile homes and recreational vehicles.
 - Electrical installations and equipment used to generate, transmit, transform or distribute power exclusively for operation of rolling stock.
 - Electrical installations used exclusively for signaling and communicating with rolling stock.
 - Installations underground in mines.
 - Installations of communication equipment located outdoors or inside buildings used and controlled exclusively by communication utilities.
 - Installations controlled and used exclusively by electric utilities for communication or metering, or For generating, controlling, transforming, transmitting and distributing electric energy in buildings used exclusively by the company located:
 - ◆ Outdoors on property owned or leased by the utility; or
 - ◆ On public highways, streets and roads; or
 - ◆ Outdoors by established rights on private property.

Note:

- The introduction has important information about fire, building and electrical codes that may apply to you in addition to WISHA rules. See "How do the WISHA rules relate to fire, building and electrical codes" in the introduction section of this book.
- These rules guide how electrical equipment is used and maintained in your workplace. They should not be used

in place of your local electrical codes if you are installing electrical wiring, electrical circuits or electrical distribution equipment.

- This rule applies to 600 volts or less. Requirements for specific equipment or special installation are found in chapter 296-24 WAC, Part L.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-280, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-280, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28005 Inspect all electrical equipment your employees use to make sure the equipment is safe.
You must:

• Inspect electrical equipment to make sure there are no recognized hazards likely to cause your employees' death or serious physical harm. Determine the safety of the equipment by using the following list:

– Has been approved or listed by a recognized testing laboratory, such as Underwriters Laboratories (UL) or other approving agency.

– Is approved, or listed as approved, for the purpose it is being used.

– Has strong and durable guards providing adequate protection including parts designed to enclose and protect other equipment.

– Is insulated.

– Will not overheat under conditions of use.

– Will not produce arcs during normal use.

– Is classified by:

◆ Type

◆ Size

◆ Voltage

◆ Current capacity

◆ Specific use

◆ Other factors

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-28005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-28005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28010 Make sure all electrical equipment is used for its approved or listed purpose.

Definitions:

- Electrical outlets are places on an electric circuit where power is supplied to equipment through receptacles, sockets and outlets for attachment plugs.

- Receptacles are outlets that accept a plug to supply electric power to equipment through a cord or cable.

You must:

• Make sure electrical outlets are rated equal or greater to the electrical load supplied.

• Make sure the proper mating configuration exists when connecting the attachment plug to a receptacle.

• Make sure when electrical outlets, cord connectors, and receptacles are joined, they accept the attachment plug with the same voltage or current rating.

SOME COMMON ELECTRICAL OUTLET (RECEPTACLE) CONFIGURATIONS				
	15 Ampere	20 Ampere	30 Ampere	50 Ampere
Two Pole 3 - Wire Grounding 125 Volt				
Three Pole 3 - Wire 125/250 Volt				
Note: A 20-ampere "T-solt" outlet or cord connector may accept a 15-ampere attachment plug of the same voltage rating.				

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-28010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-28010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28015 Make sure electrical equipment used or located in wet or damp locations is designed for such use. You must:

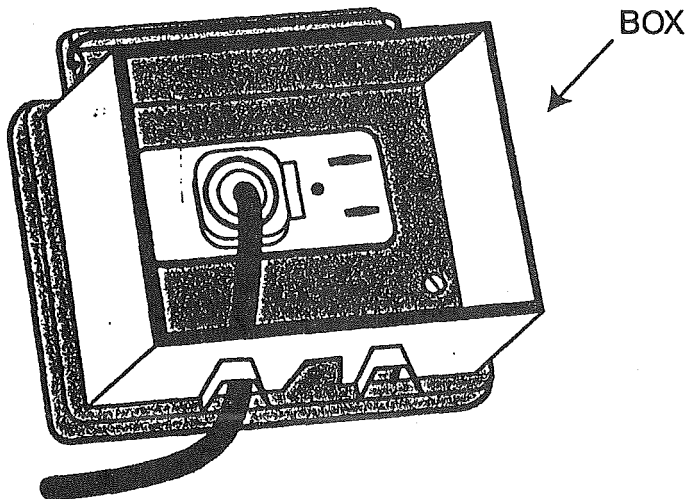
- Make sure fixtures and receptacles located in wet or damp locations are approved for such use. They must be con-

structed or installed so that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.

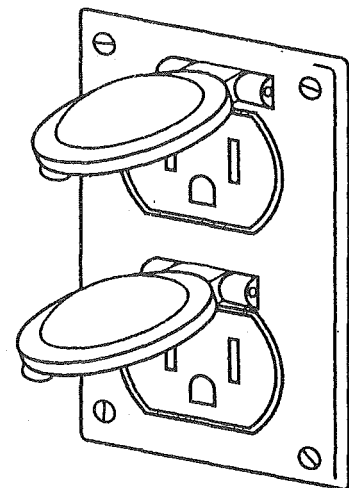
- Make sure cabinets, fittings, boxes, and other enclosures in wet or damp locations are installed to prevent moisture or water from entering and accumulating inside.

– In wet locations these enclosures must be weather-proof.

– Switches, circuit breakers, and switchboards located in wet locations must be in weatherproof enclosures.



Electrical equipment used in wet locations must be weatherproof.



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-28015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28020 Make sure electrical equipment that is not marked is not used. You must:

- Make sure markings are durable and appropriate to the environment.

- Appropriate markings include:

– The manufacturer's name;

or

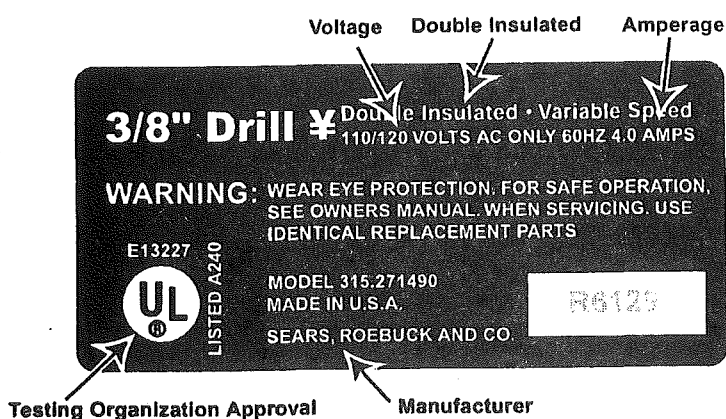
– Trademark;

or

– The organization responsible for the product;

and

- Voltage, current and wattage or other ratings as necessary.



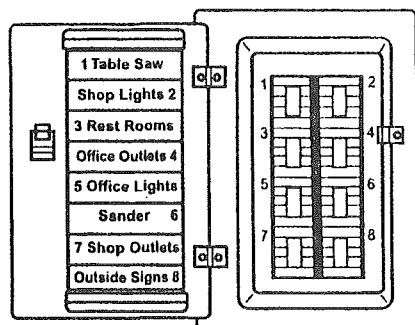
Electrical tools and equipment marked to show manufacturer, approvals and power requirements.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-28020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-28020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28022 Identify disconnecting means.

You must:

- Make sure the disconnect means (such as on/off switches and circuit breakers) is marked to show when it is open and closed and what equipment it controls, unless located and arranged so the purpose is obvious.
- Make sure each service, feeder and branch circuit is marked, at its disconnecting means or overcurrent device, to show when the circuit is open and closed and what circuit it controls, unless located and arranged so the purpose is obvious.
- Make sure markings are durable and appropriate to the environment.



Electrical panel circuit breakers labeled to show the equipment or circuits they control.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-28022, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28025 Maintain electrical fittings, boxes, cabinets and outlets in good condition. You must:

(1) Do the following to covers and openings:

- Do the following when conductors enter boxes, cabinets, or fittings:
 - Protect the conductor (wires) from abrasion.
 - Effectively close the openings where conductors enter.

- Effectively close all unused openings.
- Provide pull boxes, junction boxes, and fittings with covers approved for the purpose.
- Make sure each outlet box has a cover, faceplate, or fixture canopy in completed installations.
- Make sure covers for outlet boxes with openings for flexible cord pendants have bushings to protect the cord, or have a smooth and well rounded surface where the cord touches the opening.
- Ground metal covers.
- (2) Make sure the area in front of electrical panels, circuit breaker boxes and similar equipment which operates at 600 volts or less:
 - Has sufficient working area at least thirty inches wide for operation and maintenance of the equipment.
 - Is kept clear and free of stored materials so that employees can access this equipment for servicing, adjustments or maintenance.
 - Has at least one access route to provide free and unobstructed access.
 - Has at least three feet of working space in front, measured from the exposed live parts or the enclosure front. (See the work clearance table on the following page.)
 - Has adequate indoor lighting.

(WAC 296-800-210.)

- Has at least six feet three inches of headroom.

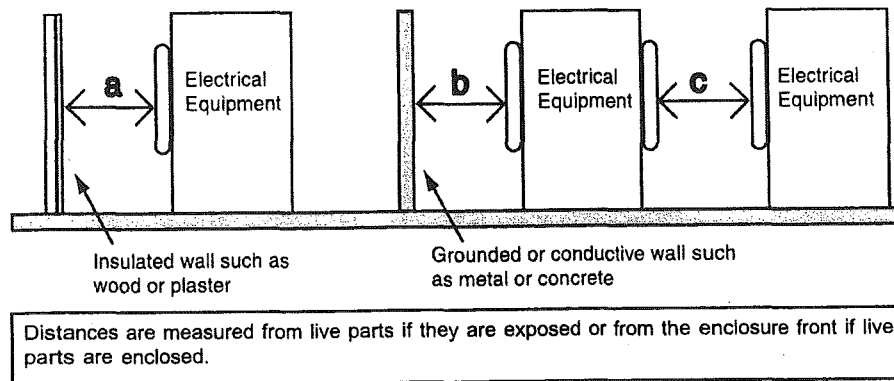
This table shows the area you must keep clear depending on the layout of the electrical equipment.

Conditions*	0 - 150 volts to ground	151 - 600 volts to ground
a	3 ft.	3 ft.
b	3 ft.	3 1/2 ft.
c	3 ft.	4 ft.

Minimum clear distances may be 2 feet 6 inches for equipment built or installed before 3/20/82.

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 material. Insulated wire or insulated bus bars 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 the panels).



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-28025, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-28025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28030 Maintain all flexible cords and cables in good condition and use safely.

Exemption: These rules do not apply to cords and cables that are an internal part of factory assembled appliances and equipment, like the windings on motors or wiring inside electrical panels.

Note: Flexible cords and cables are typically used to connect electrical equipment to a power source. These cords can have an electrical plug to connect to a power source or can be permanently wired into the power source. The terms flexible cords, extension cord, cables and electrical cords all refer to a type of flexible cord.

You must:

(1) Perform visual inspections.

• On portable cord- and plug-connected equipment and extension cords before use on each work shift. Defects and damage to look for include:

- Loose parts.
- Deformed or missing pins.
- External defects and damage.
- Damage to the outer covering or insulation.
- Pinched or crushed covering or insulation that might indicate internal damage.

Exemption: You do not need to visually inspect portable cord- and plug-connected equipment and extension cords that stay connected once in place and are not exposed to damage until they are moved.

You must:

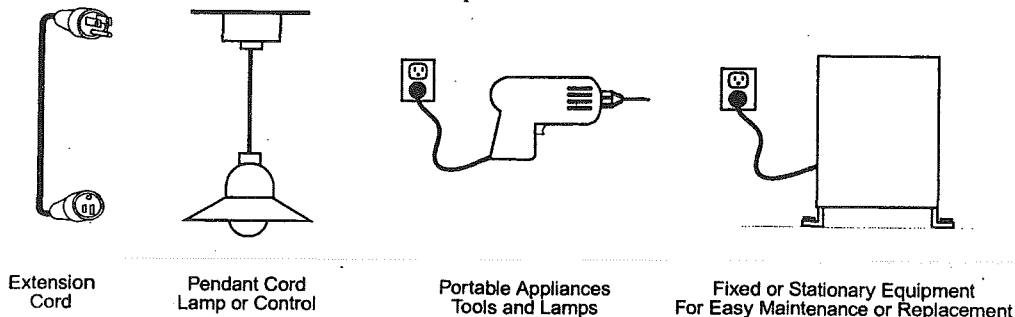
• Remove from service any defective or damaged cord until repaired and tested.

• Make sure flexible cords and cables are used as described.

(2) Use.

- Use flexible cords only as follows:
 - Wiring of equipment and appliances.
 - Data processing cables approved as a part of the data processing system.
 - Pendants.
 - Wiring for fixtures.
 - Connecting portable lamps or appliances to an approved outlet with an attachment plug.
 - Connecting stationary equipment that is frequently changed with an attachment plug energized from an approved outlet.
 - Preventing noise or vibration transmission.
 - Appliances that have been designed to permit removal for maintenance and repair if the appliance is equipped with an attachment plug energized from an approved outlet.
 - Elevator cables.
 - Wiring of cranes and hoists.

Common Acceptable Uses of Flexible Cords



Note: Extension cords (flexible cord sets) may be used on a temporary basis if you follow the rules described in the temporary use section, WAC 296-800-28030(3).

You must:

- Not use flexible cords in the following ways:
 - As a substitute for fixed wiring of a structure.
 - To run through holes in walls, ceilings, or floors.

- To run through doorways, windows, or similar openings.
- To attach to building surfaces.
- To conceal behind building walls, ceilings, or floors.
- To raise or lower equipment.
- Make sure flexible cords and cables are approved and suitable for:

- The way they will be used.
- The location where they will be used.
- Not fasten or hang cords and equipment in any way that could cause damage to the outer jacket or insulation of the cord.
- Make sure insulation on flexible cords and cables is intact.
- Make sure flexible cords and electrical cords are:
 - Connected to devices and fittings so that any pulling force on the cord is prevented from being directly transmitted to joints or terminal screws on the plug.
 - Used only in continuous lengths without splice or tap.
- Prohibit your employees from using wet hands to plug or unplug equipment or extension cords if the equipment is energized.

Note: Hard service flexible cords No. 12 or larger may be repaired or spliced if the insulation, outer sheath properties, and use characteristics of the cord are retained.

You must:

- (3) Provide the following for temporary use.
 - Make sure temporary electrical power and lighting installations that operate at 600 volts or less are used only:
 - During and for remodeling, maintenance, repair or demolition of buildings and similar activities.
 - Experimental or developmental work.
 - For no more than ninety days for:
 - ◆ Christmas decorative lighting.
 - ◆ Carnivals.
 - ◆ Other similar purposes.
 - Make sure flexible cords and electrical cords used on a temporary basis are protected from accidental damage:
 - By avoiding sharp corners and projections
 - If they pass through doorways or other pinchpoints.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-28030, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-28030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28035 Guard electrical equipment to prevent your employees from electrical hazards. You must:

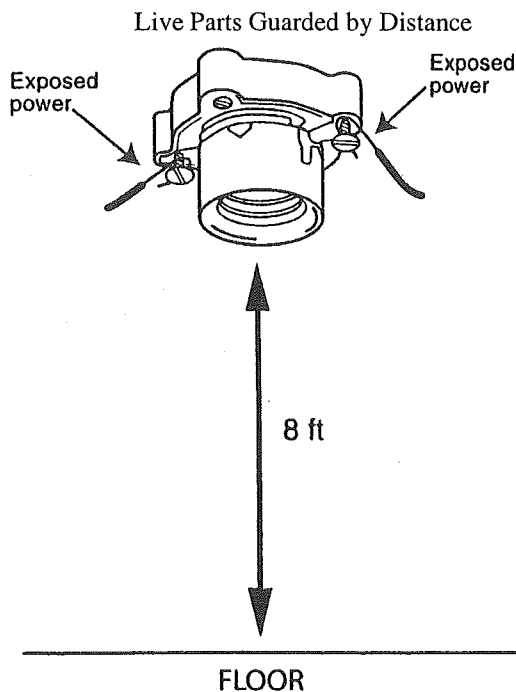
(1) Guard live parts of electric equipment operating at 50 volts or more against accidental contact by any of the following means:

- By approved cabinets or other forms of approved enclosures.
- By location in a room, vault, or similar enclosure that is accessible only to employees qualified to work on the equipment. Entrances to rooms and other guarded locations containing exposed live parts must be marked with conspicuous warning signs forbidding unqualified persons to enter.
- By permanent, substantial partitions or screens so that only employees qualified to work on the equipment will have access within reach of the live parts. Any openings must prevent accidental contact with live parts by employees or objects employees carry.
- By location on a balcony, gallery, or platform that will exclude unqualified persons.
- By being located eight feet or more above the floor or other working surface.

(2) Make sure all electrical appliances, fixtures, lampholders, lamps, rosettes, and receptacles do not have live parts normally exposed to employee contact.

- Rosettes and cleat type lampholders at least 8 feet above the ground may have exposed parts.

(3) In locations where electric equipment would be exposed to physical damage, enclosures or guards must be so arranged and of such strength as to prevent such damage.



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-28035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-28040 Make sure electrical equipment is effectively grounded. You must:

- Make sure the path to ground from circuits, equipment, and enclosures is permanent and continuous.
- Make sure equipment connected by cord and plug is grounded under these conditions:
 - Equipment with exposed noncurrent carrying metal parts.
 - Cord and plug connected equipment which may become energized.
 - Equipment that operates at over 150 volts to ground.
 - Equipment in hazardous locations. (WAC 296-24-95613)

Exemption: Except for guarded motors and metal frames of electrically heated appliances, if the appliance frames are permanently and effectively insulated from ground.

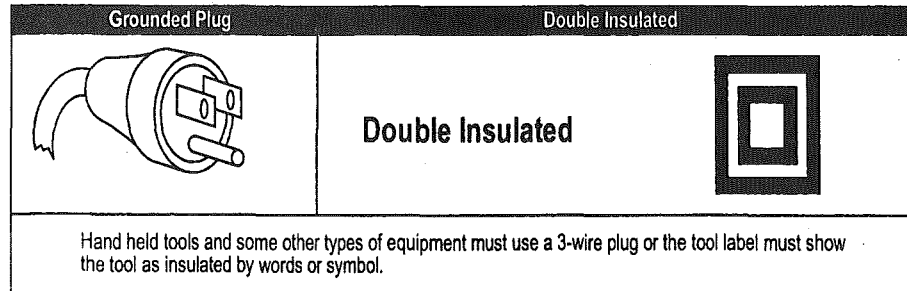
• Ground the following type of equipment:

- Hand-held motor-operated tools
- Refrigerators
- Freezers
- Air conditioners
- Clothes washers and dryers
- Dishwashers
- Electrical aquarium equipment
- Hedge clippers

- Electric lawn mowers
- Electric snow blowers
- Wet scrubbers
- Tools likely to be used in damp or wet locations

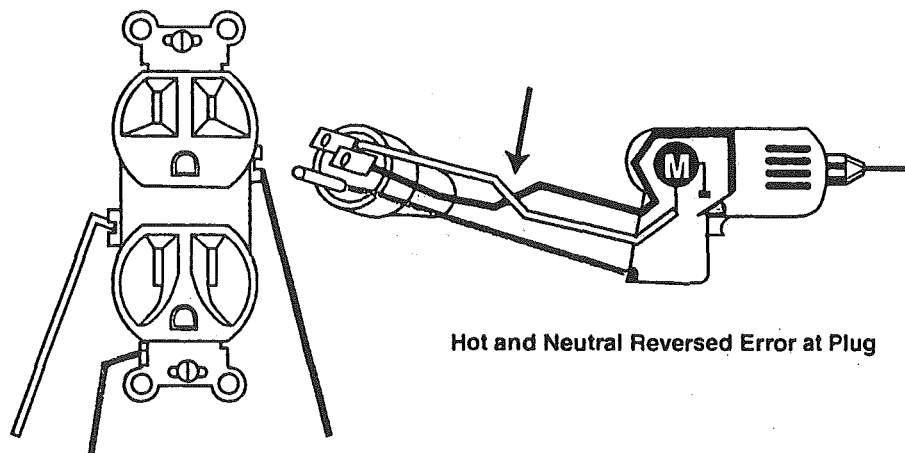
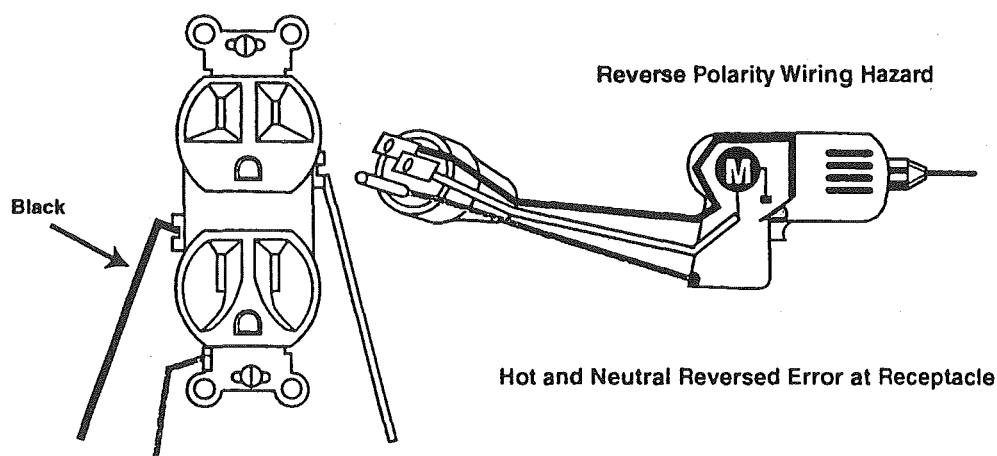
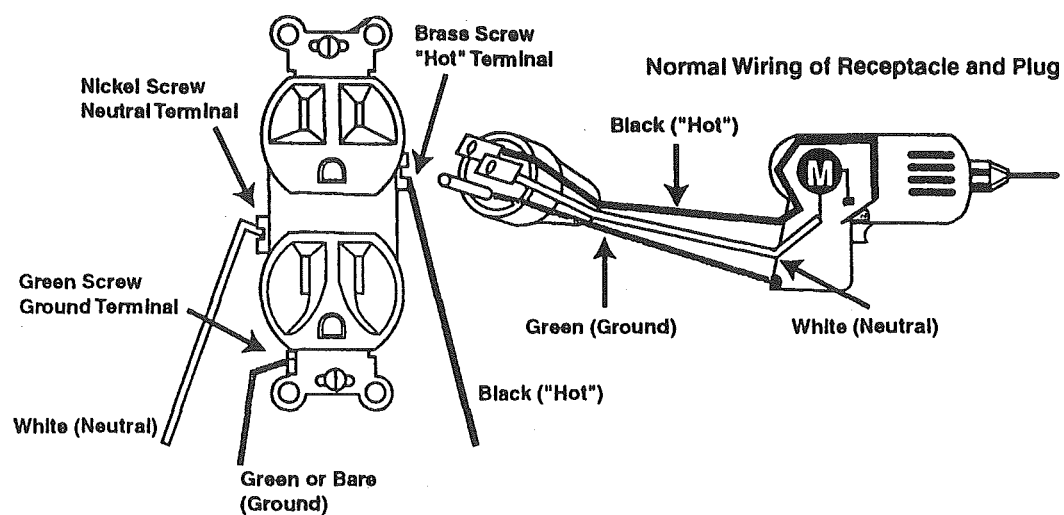
- Appliances used by employees standing on the ground, on metal floors or working inside of metal tanks or boilers
- Portable hand lamps

Note: Grounding can be achieved by: Using tools and appliances equipped with an equipment grounding conductor (three-prong plug and grounded electrical system).



You must:

- Make sure exposed metal parts of fixed equipment that do not conduct electricity, but may become energized, are grounded if the equipment is in a wet or damp location and is not isolated.
- Make sure ground wires are identified and look different than the other conductors (wires).
- Make sure ground wires are not attached to any terminal or lead to reverse polarity of the electrical outlet or receptacle.
- Make sure grounding terminals or grounding-type devices on receptacles, cords, connectors, or attachments plugs are not used for purposes other than grounding.



Reverse polarity wiring can cause a faulty tool to start as soon as it is plugged in or not stop when the switch is released. This could cause an injury. An extremely dangerous type of reverse polarity wiring switches the hot and ground wires. This causes the body of the tool or appliance to be "hot". Touching the tool and conductive surface can result in serious or even deadly shock.

WAC 296-800-28045 Make sure electrical equipment has overcurrent protection. You must:

- Make sure all electrical circuits that are rated at 600 volts or less have overcurrent protection.
- Protect conductors and equipment according to their ability to safely conduct electrical current.
- Make sure overcurrent devices do not interrupt the continuity of grounded conductors unless:
 - All conductors are opened at the same time or
 - You are using the overcurrent devices to protect from overload when running motors
 - You protect employees from electrical arcing or suddenly moving electrical parts by locating fuses and circuit breakers in safe places. If this is not possible, install shields on fuses and circuit breakers.
- Make sure the following fuses and thermo cutouts have disconnecting mechanisms:
 - All cartridge fuses accessible to nonqualified persons
 - All fuses on circuits over 150 volts to ground
 - All thermal cutouts on circuits over 150 volts to ground.
 - The disconnecting mechanisms must be installed so you can disconnect the fuses or thermal cutouts without disrupting service to equipment and circuits unrelated to those protected by the overcurrent device.
- Provide easy access to overcurrent devices for each employee or authorized building management personnel.
- Protect the overcurrent devices by locating them away from easily ignitable material.
 - They must be placed to avoid exposure to physical damage.
- Make sure circuit breakers:
 - Clearly indicate when they are open (off) and closed (on)
 - That operate vertically are installed so the handle is in the "up" position when the breaker is closed (on). See WAC 296-24-95603 (2)(c) for more information
 - Used as switches in 120-volt, fluorescent lighting circuit must be approved for that purpose and marked "SWD." See WAC 296-24-95603 (2)(c) for more information.
 - That have arcing or suddenly moving parts, are shielded or located so employees will not get burned or injured by the operation of the circuit breaker
- ♦ Fuses must also be shielded in this way

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-28045, filed 5/9/01, effective 9/1/01.]

WAC 296-800-290 Summary. Your responsibility: To make sure the portable ladders in your workplace are used safely and kept in good condition.**Portable metal ladders.****You must:**

Inspect your portable metal ladders periodically.

WAC 296-800-29005.

Make sure your portable metal ladders are kept in good condition.

WAC 296-800-29010.

Use your portable metal ladders safely.

WAC 296-800-29015.

Portable wooden ladders.

You must:

Inspect your portable wooden ladders frequently.

WAC 296-800-29020.

Make sure your portable wooden ladders are kept in a good condition.

WAC 296-800-29025.

Use your portable wooden ladders safely and for their intended purpose.

WAC 296-800-29030.

Safely use a portable wooden ladder when working more than 25 feet above ground.

WAC 296-800-29035.

Use wooden stepladders safely.

WAC 296-800-29040.

Exemption: These rules apply to common types of portable wooden ladders except:

- Fruit picker ladders
- Industrial tripod ladders
- Combination step and extension ladders
- Stockroom step ladders
- Aisle way step ladders
- Shelf ladders
- Library ladders
- Other special ladders

Note:

- For design and construction requirements for wood and metal ladders, see WAC 296-24-780 and 296-24-79503 of the General safety and health standard.
- There are different types of ladders. Be sure to use one that is capable of handling the combined weight of the climber and the load being carried (working load).

Type	Duty Rating	Working Load
IAA	Industrial	Special duty—375 lbs. maximum
IA	Industrial	Extra heavy—300 lbs. maximum
I	Industrial	Heavy—250 lbs. maximum
II	Commercial	Medium—225 lbs. maximum
III	Household	Light—200 lbs. maximum

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-290, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29005 Inspect your portable metal ladders periodically. You must:

- Immediately inspect a ladder if it:
 - Tips over.
 - Is exposed to oil or grease.
 - Is exposed to excessive heat as in the case of fire.
 - Is subjected to certain acids or alkali solutions.
- If it tips over, look at:
 - The rails for dents, bends or dented rungs.
 - All the rungs to side rail connections.
 - The hardware connections.
 - Rivets for shear damage.
- Inspect the cables and ropes on portable metal ladders and replace them if they are defective
- Check hardware fittings and accessories frequently and keep them in good condition
- Mark defective ladders and take them out of service until repaired by a maintenance department or the manufacturer.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-29005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29010 Make sure your portable metal ladders are kept in good condition. You must:

- Maintain your portable metal ladders in good, usable condition, at all times.
- Handle portable metal ladders with care and avoid dropping, jarring, or misusing them.
- Store your portable metal ladders on racks designed to protect them when not in use. The racks must have enough supporting points to prevent any possibility of excessive sagging.
- Properly support your ladder while transporting on vehicles. To prevent chafing and the effects of road shock,

use supports that are made of material softer than the metal ladder, such as hardwood or rubber-covered iron pipe.

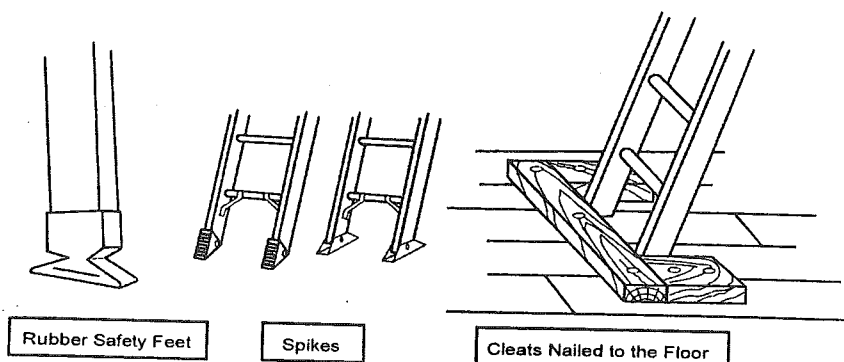
Note: Tying the ladder to each support point will greatly reduce damage due to road shock.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-29010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29015 Use your portable metal ladders safely. You must:

- (1) Use metal ladders only for their intended purpose.
- (2) Make sure the base section of the portable metal ladder has secure footing.

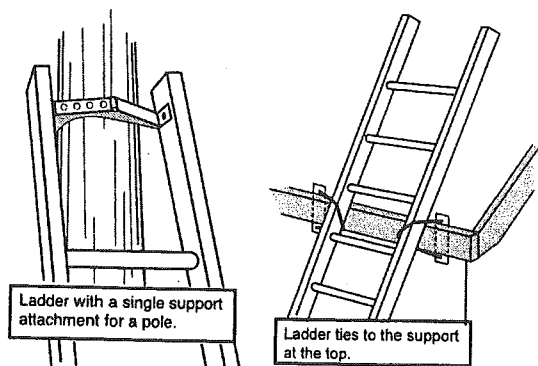
Examples of Securing the Ladder Base



(3) Make sure both rails are supported at the top, unless the ladder has a single support attachment.

Note: Safe ladder angle. A simple rule for setting up a ladder at the proper angle is to place the base a distance from the wall, equal to 1/4 the working length of the ladder.

Examples of Securing the Ladder at the Top

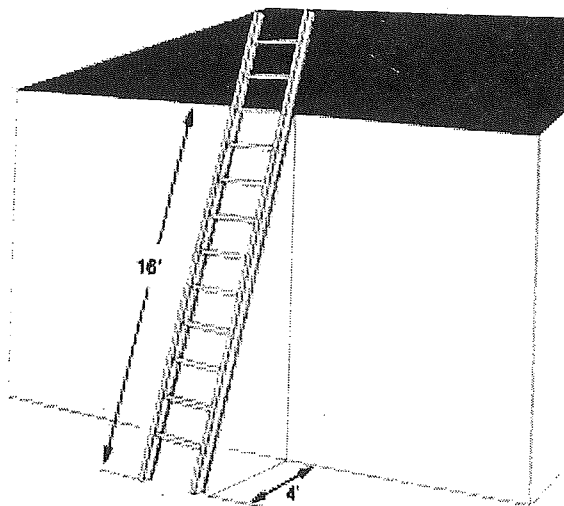


(4) Make sure while climbing portable metal ladders, your employees:

- Have both hands free to hold on to the ladder.
- Face the ladder when you are climbing up or down.

(5) Not tie or fasten ladder sections together to make longer ladders (unless the ladder manufacturer endorses this type of use, and you have hardware fittings specifically designed for this use).

(6) Make sure a nonself-supporting portable ladder is set at a safe angle. The proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.



[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-29015, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-29015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29020 Inspect your portable wooden ladders frequently. You must:

- Make sure ladders with defects are:
 - Withdrawn from service to be repaired or destroyed
 - Tagged as "dangerous do not use."

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-29020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29025 Make sure your portable wooden ladders are kept in a good condition. You must:

- Make sure your portable wooden ladders are maintained in good condition, and:
 - Joints between the steps or rungs and side rails are tight
 - Hardware and fittings are securely attached
 - Moveable parts operate freely without binding or excessive play
 - Metal bearings are lubricated frequently
 - Frayed or badly worn ropes are replaced
 - Safety feet and other auxiliary equipment are kept in good condition
- Not use portable wooden ladders with:
 - Broken or missing steps
 - Broken or missing rungs or cleats
 - Broken side rails
 - Other faulty equipment
- Not make improvised repairs on your portable wooden ladders.
- Not store your portable wooden ladders near sources of heat, moisture, or dampness.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-29025, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-29025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29030 Use your portable wooden ladders safely and for their intended purpose. You must:

- (1) Use the appropriate length of ladder.
 - Use single ladders less than or equal to 30 feet long.
 - Use 2-section extension ladders less than or equal to 60 feet long.
- (2) Make sure ladders meet the following rules:
 - Shorter sections cannot be spliced to make longer sections.
 - Ladders cannot be made by fastening cleats across a single rail.
- (3) Use ladders safely.
 - Make sure ladders are not used as guys, braces, or skids.
 - Putting ladders on boxes, barrels or other unstable bases to make the ladder taller is not allowed.
 - Make sure ladders are not used in a horizontal position.
- (4) Make sure that rung and cleat ladders are set up at a safe angle. (See note and illustration on safe ladder angle in WAC 296-800-29015.)
- (5) Make sure that where the top of the ladder rests is reasonably rigid and strong enough to support the load.
- (6) Place the bottom of a portable wooden ladder so it will not slip, or the bottom must be tied or held in position.
- (7) Not place a portable wooden ladder in front of doors that open towards the ladder, UNLESS YOU:
 - Block the door open, or
 - Lock the door, or
 - Guard the door to keep it from opening into the ladder
- (8) Make sure 2-section extension ladders overlap as follows:

Length of section of extension ladders (feet)	Minimum overlap allowed (feet)
Less than 36	3
37-48	4
49-60	5

(9) Make sure ladders with metal reinforced rails are used with the reinforcement on the underside to avoid hazards such as tripping and electrocution.

(10) Not place ladders in elevator shafts and hoistways, except where used by workers assigned to that type of work.

• Employees must be protected from falling objects, when assigned to work on ladders in elevator shafts and hoistways.

(11) Not support more than one section of plank per ladder rung.

• Do not allow more than 2 persons on one section of planking at a time.

(12) Brace the ladder to reduce the spring caused by weight on the ladder.

(13) Keep shoes free and clean of greasy and slippery substances when climbing.

(14) Have both hands free to hold on to the ladder when climbing.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-29030, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-29030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29035 Safely use a portable wooden ladder when working more than 25 feet above ground. You must:

- (1) Secure the ladder at the top and bottom.
- (2) Not perform work that requires the use of both hands unless wearing a safety belt and lanyard secured to the ladder.
- (3) Not perform work requiring eye protection, respirators and/or pressure equipment if thirty feet above the ground.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-29035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-29040 Use wooden stepladders safely. You must:

- (1) Use stepladders that are less than twenty feet.
- (2) Not climb on the bracing or the back legs.
- (3) Not use as single ladders.
- (4) Not stand on a step higher than the third step from the top, if working five feet or higher from the ground.
- (5) Not use the tops of stepladders as steps.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-29040, filed 5/9/01, effective 9/1/01.]

WAC 296-800-300 Summary—Portable fire extinguishers. Important:

The following WISHA rule applies to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. Your local fire marshal also enforces fire codes which address fire safety that are more comprehensive and may go beyond WISHA rules.

Your responsibility:

To provide readily accessible, appropriate portable fire extinguishers for employees in your workplace

You must:

Provide portable fire extinguishers in your workplace

WAC 296-800-30005

Select and distribute portable fire extinguishers in your workplace

WAC 296-800-30010

Make sure that portable fire extinguishers are kept fully charged, in good operating condition, and left in their designated places

WAC 296-800-30015

Inspect and test all portable fire extinguishers

WAC 296-800-30020

Train your employees to use portable fire extinguishers

WAC 296-800-30025

Exemptions:

- You are exempt from the requirements of portable fire extinguishers if you have the following:

- A written fire safety policy that requires the immediate and total evacuation of employees from the workplace when there is a fire alarm signal,

AND

- An emergency action plan and a fire prevention plan which meet the requirements of WAC 296-24-567

AND

- Portable fire extinguishers in your workplace that are not accessible for employee use

- If another WISHA rule requires portable fire extinguishers, then you must comply with these requirements.

- Where extinguishers are provided but are not intended for employee use and you have an emergency action plan and a fire prevention plan (which meet the requirements of WAC 296-24-567), then only the requirements of WAC 296-800-30020 apply.

Note: The introduction has important information about building, electrical and fire codes that may apply to you in addition to WISHA rules. See "How do the WISHA rules relate to building, fire and electrical codes" in the introduction section of this book.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-300, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-300, filed 5/9/01, effective 9/1/01.]

WAC 296-800-30005 Provide portable fire extinguishers in your workplace. You must:

(1) Provide approved portable fire extinguishers for your workplace and distribute them so they are readily accessible

- Make sure that your portable fire extinguisher does not use extinguishing agents such as carbon tetrachloride or chlorobromomethane extinguishing agents. In addition, soda-acid foam, loaded stream, antifreeze and water extinguishers of the inverting type shall not be recharged or placed into service.

(2) Mount, locate, and identify portable fire extinguishers so employees can easily reach them, without being subjected to possible injury.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-30005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-30010 Select and distribute portable fire extinguishers in your workplace. Exemption:

- This does not apply to the portable fire extinguishers provided for employees to use outside of workplace buildings or structures.

- You are exempt from the distribution requirements of this rule if you have an emergency action plan (that meets requirements of WAC 296-24-567):

- Which designates certain employees to be the only employees authorized to use the available portable fire extinguishers; and

- Requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm

You must:

- Provide the correct type of portable fire extinguishers and distribute them in your workplace, depending on the type, size, and severity of fire that could occur

- The type of portable fire extinguishers you must have in your workplace depends on the types of fire hazards that exist in your workplace

Fire Extinguisher Distance Table

Type of fire hazard extinguisher	Maximum distance from the fire hazard to a fire extinguisher
Type of fire hazard Wood, cloth, paper, rubber (Class A fire hazards)	No more than 75 feet (22.9 m) Note: You may use uniformly spaced standpipe systems or hose stations instead of Class A portable fire extinguishers, if they meet the requirements of WAC 296-24-602 or 296-24-607.
Liquids, grease, gases (Class B fire hazards)	No more than 50 feet (15.2 m) Note: You may choose to use a smaller fire extinguisher in lieu of that required for the 50 foot distance. If you choose to have the smaller fire extinguisher, the travel distance must not be greater than 30 feet. See UFC Standard 10 Chapter 3 for the basic minimum extinguisher rating allowed.
Live electrical equipment and circuits (Class C fire hazards)	Distribute any Class C portable fire extinguishers the same pattern that you have for any Class A or Class B fire hazards. Note: If the electrical equipment is deenergized, you may use a Class A or Class B portable fire extinguisher.
Powder, flakes, and residue from combustible metals, like magnesium and titanium, that build up over a 2-week period (Class D fire hazards)	No more than 75 feet (22.9 m)

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-30010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-30010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-30015 Make sure that portable fire extinguishers are kept fully charged, in operable condition, and left in their designated places. You must:

- Make sure that fire extinguishers found with deficiencies are removed from service and replaced with a suitable fire extinguisher.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-30015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-30020 Inspect and test all portable fire extinguishers. You must:

- Perform inspections:
 - Make sure that portable fire extinguishers or hose systems (used instead of fire extinguishers) are visually inspected monthly
- Perform maintenance checks:
 - Make sure that all portable fire extinguishers are subjected to an annual maintenance check
 - Keep records of all annual maintenance checks and make available to the department upon request
- ◆ For 1 year after the last maintenance check;
- OR
- ◆ For the life of the shell, whichever is less
 - Make sure that equal protection is provided when portable fire extinguishers are removed from service for maintenance and recharging

Exemption: Most stored pressure extinguishers do not require an internal examination. Examples of those that do require an internal examination are those containing a loaded stream agent.

You must:

- Perform hydrostatic testing:

Exemption:

- Dry chemical extinguishers that have nonrefillable disposable containers are exempt from this requirement.
- Manually pressurized pumptanks are exempt from this requirement.

You must:

- Make sure that portable extinguishers are hydrostatically tested:
 - At the intervals listed in Table 1, of this section
 - Whenever they show evidence of corrosion or mechanical injury
- Not perform hydrostatic testing on fire extinguishers if:
 - The unit has been repaired by soldering, welding, brazing, or use of patching compounds
 - The cylinder or shell threads are damaged
 - Corrosion has caused pitting, including corrosion under removable name plate assemblies
 - The extinguisher has been burned in a fire
 - Calcium chloride extinguishing agents have been used in a stainless steel shell

Note: Specific rules regarding conducting hydrostatic tests are covered in WAC 296-24-59212.

You must:

- Maintain records showing that hydrostatic testing has been performed. Provide the following evidence to the department upon request:
 - Date of test
 - Test pressure used

- The serial number, or other identifier of the fire extinguisher that was tested

- Person or agency performing the test

- Keep records until:

- The extinguisher is retested;

OR

- The extinguisher is taken out of service, whichever comes first

- Empty and maintain stored-pressure dry chemical extinguishers requiring a 12-year hydrostatic test, every six years:

- When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date

Hydrostatic Test Table

Type of Extinguisher	Test Interval (Years)
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (stainless steel shell)	5
Aqueous film forming foam (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
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated, with mild steel shell	12

Note: Due to a manufacturer's recall, stored pressure water extinguishers with fiberglass shell (pre-1976) are prohibited from hydrostatic testing.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-30020, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-30020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-30025 Train your employees to use portable fire extinguishers. You must:

- Train your employees where you have provided portable fire extinguisher for their use in:
 - The hazards involved with incipient stage fire fighting (the early stage of a fire when it can be extinguished by a portable fire extinguisher)
 - The general principles of fire extinguisher use
- Provide the training when they are first hired and then annually.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-30025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-310 Summary. Your responsibility: To provide and maintain emergency exit routes and to install and maintain adequate employee alarm systems.

Exit routes:

You must:

Provide an adequate number of exit routes.

WAC 296-800-31005.

Make sure that exit routes are large enough.

WAC 296-800-31010.

Make sure that exit routes meet their specific design and construction requirements.

WAC 296-800-31015.

Make sure that each exit route leads outside.

WAC 296-800-31020.

Provide unobstructed access to exit routes.

WAC 296-800-31025.

Exit doors must be readily opened from the inside.

WAC 296-800-31030.

Use side-hinged doors to connect rooms to exit routes.

WAC 296-800-31035.

Provide outdoor exit routes that meet requirements.

WAC 296-800-31040.

Minimize danger to employees while they are using emergency exit routes.

WAC 296-800-31045.

Mark exits adequately.

WAC 296-800-31050.

Provide adequate lighting for exit routes and signs.

WAC 296-800-31053.

Maintain the fire retardant properties of paints or other coatings.

WAC 296-800-31055.

Maintain emergency safeguards.

WAC 296-800-31060.

Maintain exit routes during construction and repair.

WAC 296-800-31065.

Provide doors in freezer or refrigerated rooms that open from the inside.

WAC 296-800-31067.

Employee alarm systems:

You must:

Install and maintain an appropriate employee alarm system.

WAC 296-800-31070.

Establish procedures for sounding emergency alarms.

WAC 296-800-31075.

Test the employee alarm system.

WAC 296-800-31080.

Exemption: This rule does not apply to vehicles, vessels, or other mobile structures.

Note: The introduction has important information about building, electrical and fire codes that may apply to you in addition to WISHA rules. See "How do the WISHA rules relate to building, fire, and electrical codes" in the introduction section of this book.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-310, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-310, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31005 Provide an adequate number of exit routes. You must:

- Provide a minimum of two exit routes to provide different ways for employees to leave the workplace safely during an emergency (at least two of the exit routes must be remote from one another so employees can safely exit if one exit route becomes blocked or unavailable).

- Provide an adequate number (at least two) of exit routes, considering the kind, number, location and capacity, appropriate to each building according to the following conditions:

- Number of employees
- Size of building
- Arrangement of workplace
- Building occupancy

Note: A single exit route is permitted where the number of employees, the size of the building, its occupancy, or the arrangement of the workplace indicates that a single exit will allow all employees to exit safely during an emergency. Other means of escape, such as fire exits or accessible windows, should be available where only one exit route is provided.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31010 Make sure that exit routes are large enough. You must:

- Make sure each exit route is large enough to accommodate the maximum-permitted occupant load for each floor served by the route.

- Make sure the capacity of an exit route does not decrease at any point.

- Make sure an exit route is at least 6 feet 8 inches high at all points.

- Make sure objects that stick out into the exit route, such as fans hanging from the ceilings or cabinets on walls, do not reduce the minimum height and width of the exit route.

- Make sure exit routes are at least 28 inches wide at all points between any handrails.

- If necessary, routes must be wider than 28 inches to accommodate the expected occupant load.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-31010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-31010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31015 Make sure that exit routes meet their specific design and construction requirements. You must:

- Make sure each exit is a permanent part of the workplace.

- Make sure an exit route has only those openings necessary to permit access to, or exit from, occupied areas of the workplace.

- Make sure any opening into an exit through a fire wall is protected by a self-closing fire door that remains closed.

- Make sure each fire door, its frame, and its hardware is listed or approved by a nationally recognized testing laboratory.

- Make sure construction materials, used to separate an exit route, have at least:

- One-hour fire resistance rating if the exit connects three stories or less.

- Two-hour fire resistance rating if the exit connects four stories or more.

- Make sure employees are provided with stairs or a ramp, if the exit route is not substantially level.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31020 Make sure that each exit route leads outside. You must:

- Make sure that building exit routes lead:
 - Directly outside or to a street, walkway; or to an open space with access to the outside.
 - To streets, walkways, or open spaces large enough to accommodate all building occupants likely to use the exit.
- Make sure the exit routes clearly show the route employees use to leave the building in an emergency.
- Install a standard safeguard with a warning sign, if a doorway or corner of a building could allow an employee to walk in front of an engine or trolley.
- Use doors, partitions, or other effective means to show employees the correct route out of the building, if the stairs in your exit route lead anywhere but out of the building.

Note: If the stairs in your exit route lead past the exit to the basement, you might install a gate at the point they lead towards that basement. The gate could help your employees stay on the exit route taking them out of the building.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31025 Provide unobstructed access to exit routes. You must:

- (1) Provide exit routes that are always free of obstructions so all employees can safely exit the building during an emergency.
- (2) Make sure employees are not required to travel to a dead end or through a room that can be locked, such as a restroom.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31030 Exit doors must be readily opened from the inside.

Exemption: An exit door may be locked or blocked from the inside in a mental, penal, or correctional institution, if supervisory personnel are continuously on duty and a plan exists to remove employees and inmates during an emergency.

You must:

- Make sure all exit doors readily open from the inside without keys, tools, or special knowledge. A device that locks only from the outside, such as a panic bar, is permitted. An exit door must be free of any device or alarm that could restrict emergency use of an exit if the device or alarm fails.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31035 Use side-hinged doors to connect rooms to exit routes. You must:

- Use a side-hinged exit door to connect any room to an exit route. The door must swing out when the room:
 - Is occupied by more than fifty persons or
 - Contains highly flammable or explosive materials.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-31035, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-31035, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31040 Provide outdoor exit routes that meet these requirements. You must:

- Make sure an outdoor exit route (such as an interior balcony, porch, gallery, or roof) meets all requirements for an indoor exit route. In addition, an outdoor exit route must also:
 - Have guardrails to protect unenclosed sides.
 - Be covered if snow or ice is likely to accumulate without regular removal.
 - Be reasonably straight with smooth, solid, substantially level floors.
 - Have no dead ends more than twenty feet long that branch off of the exit route.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31040, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31045 Minimize danger to employees while they are using emergency exit routes. You must:

- Maintain each exit route to minimize danger to employees during an emergency.
- Keep each exit route free of explosive or highly flammable furnishings and decorations.
- Not require employees to travel toward areas where high hazard materials are stored, unless the route is protected by partitions or physical barriers. High hazard materials are materials that:
 - Burn quickly
 - Emit poisonous fumes when burned
 - Are explosive

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31045, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31050 Mark exits adequately. You must:

- Mark each exit with a clearly visible, distinctive sign reading "exit."
- Mark any doorway or passage that might be mistaken for an exit with "not an exit" or with an indication of its actual use.
- Make sure exit signs are a distinctive color.
- Make sure signs are posted and arranged along exit routes to adequately show how to get to the nearest exit and clearly indicate the direction of travel.
- Not obstruct or conceal exit signs in any way.
- Keep exit doors free of signs or decorations that obscure their visibility.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31050, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31053 Provide adequate lighting for exit routes and signs. You must:

- Illuminate each exit route adequately and reliably.
- Have at least five foot-candles illumination from a reliable light source.
- Make sure any exit signs illuminated by artificial lights and made of translucent material (other than internally illuminated types)
 - Have screens, discs or lens of at least twenty-five square inches in size; and

– Show red or other designated color on the approach side of the exit.

- Make sure brightly lit signs, displays, or objects in or near the line of vision do not distract attention from the exit sign.

- Make sure exit signs that are self-lighting have a minimum luminance surface value of .06 footlamberts.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31053, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31055 Maintain the fire retardant properties of paints or other coatings. You must:

- Maintain any paints or other coatings with fire retardant properties so they retain their fire retardant properties.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31053, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31060 Maintain emergency safeguards. You must:

- Maintain each safeguard in proper working order to protect employees during an emergency. Emergency safeguards include items such as:

- Sprinkler systems.
- Alarm systems.
- Fire doors.
- Exit lighting.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31060, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31065 Maintain exit routes during construction and repair. You must:

- Have enough exit routes that comply with these rules before letting your employees occupy a workplace under new construction.

- Make sure that employees do not occupy an existing workplace unless:

- All exits and existing fire protection are maintained; or
- Alternate fire protection is provided that ensures an equivalent level of safety.

- Make sure that flammable or explosive materials used during construction or repair do not expose employees to additional hazards or prevent emergency escape.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31065, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31067 Provide doors in freezer or refrigerated rooms that open from the inside. You must:

- Make sure that walk-in refrigerators or freezer rooms have doors with opening devices allowing them to be opened from the inside even when they are locked from the outside.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31067, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31070 Install and maintain an appropriate employee alarm system.

Exemptions: • If you have ten or fewer employees in a particular workplace, you can use direct voice communication to sound the alarm, if all employees can hear it. For this kind of workplace, you do not need a back-up system.

- In workplaces where employees would not otherwise be able to recognize audible or visible alarms, you can use tactile devices to alert them.

You must:

- Make sure that a working employee alarm system with a distinctive signal to warn employees of fire or other emergencies is installed and maintained, unless employees can see or smell a fire or other hazard.

- Make sure that the following systems meet the requirements of this rule, if you use them as your employee alarm system:

- Supervisory alarms
- Discharge alarms
- Detection systems required on fixed extinguishing systems
- Detection systems required on fire suppression systems

- Make sure that your employee alarm systems are:

- Providing enough warning to allow employees to safely escape from the workplace, the immediate work area, or both.

- Noticeable above surrounding noise or light levels by all employees in the affected portions of the workplace.

- Distinctive and recognizable as a signal, to evacuate the work area.

- Restored to working order as soon as possible, after each test or alarm.

- Supervised, if installed after July 1, 1982, and if it has that capacity.

- Able to alert assigned personnel whenever a malfunction exists in the system.

- Adequately warning employees of emergencies.

- Serviced, maintained, and tested by a person trained in the alarm system's design and functions to keep the system operating reliably and safely.

- In working order, except when undergoing repairs or maintenance.

- Warning employees of fire or other emergencies with a distinctive signal, if they are not able to see or smell a fire or other hazard.

- Manual actuation devices that, if provided, are unobstructed, easy to find, and readily accessible.

- Using alarm devices, components, combinations of devices, or systems with approved construction and installation. This applies to steam whistles, air horns, strobe lights, or similar lighting devices, as well as tactile devices.

- Supplied with spare alarm devices available to restore the system promptly if a component breaks, is worn, or destroyed.

- Kept in full operating condition by maintaining and replacing power supplies as often as necessary.

- Supplied with a back-up means of alarm, such as employee runners or telephones, when regular systems are out of service.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31070, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31075 Establish procedures for sounding emergency alarms. You must:

- Explain to each employee how to sound the alert for emergencies. Methods of reporting emergencies can include:

- Manual pull box alarms.
- Public address systems.
- Radio.
- Telephones.

• Post emergency numbers near telephones, employee notice boards, or other conspicuous locations, if you use telephones to report emergencies.

• Require that all emergency messages have priority over all nonemergency messages if the communication system also serves as an employee alarm system.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31075, filed 5/9/01, effective 9/1/01.]

WAC 296-800-31080 Test the employee alarm system. You must:

• Test the reliability and adequacy of your employee alarm system every two months.

– Use a different activation device in each test of a multiactuation device system, so the entire alarm system gets tested.

• Make sure that supervised (monitored) employee alarm systems are tested at least once a year for reliability and adequacy.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-31080, filed 5/9/01, effective 9/1/01.]

WAC 296-800-320 Summary. Your responsibility:

To report and conduct an investigation of certain types of accidents.

You must:

Report the death, or probable death, of any employee, or the in-patient hospitalization of 2 or more employees within 8 hours

WAC 296-800-32005

Make sure that any equipment involved in an accident is not moved.

WAC 296-800-32010

Assign people to assist the department of labor and industries

WAC 296-800-32015

Conduct a preliminary investigation for all serious injuries

WAC 296-800-32020

Document the investigation findings

WAC 296-800-32025

Note: Call the nearest office of the department of labor and industries at 1-800-4BE SAFE or call Occupational Safety and Health Administration (OSHA) at 1-800-321-6742, to report the death, probable death of any employee or the in-patient hospitalization of 2 or more employees within 8 hours, after handling medical emergencies.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-320, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-320, filed 5/9/01, effective 9/1/01.]

WAC 296-800-32005 Report the death, probable death of any employee, or the in-patient hospitalization of 2 or more employees within 8 hours. You must:

• Contact the nearest office of the department of labor and industries in person or by phone at 1-800-4BE SAFE to report within 8 hours of the work-related incident or accident,

- A death
- A probable death
- 2 or more employees are admitted to the hospital, or
- Contact the Occupational Safety and Health Administration (OSHA) by calling its central number at 1-800-321-6742.

• Provide the following information within 30 days concerning any accident involving a fatality or hospitalization of 2 or more employees:

- Name of the work place
- Location of the incident
- Time and date of the incident
- Number of fatalities or hospitalized employees
- Contact person
- Phone number
- Brief description of the incident

Note: If you do not learn about the incident at the time it occurs, you must report the incident within 8 hours of the time it was reported to you, your agent, or employee.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-32005, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-32005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-32010 Make sure that any equipment involved in an accident is not moved. You must:

• Not move equipment involved in a work or work related accident or incident if any of the following results:

- A death
- A probable death
- 2 or more employees are sent to the hospital

• Not move the equipment until a representative of the department of labor and industries investigates the incident and releases the equipment unless:

- Moving the equipment is necessary to:
 - ◆ Remove any victims
 - ◆ Prevent further incidents and injuries

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-32010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-32015 Assign people to assist the department of labor and industries. You must:

• Assign witnesses and other employees to assist department of labor and industries personnel who arrive at the scene to investigate the incident involving:

- A death
- Probable death
- 2 or more employees are sent to the hospital.

Include:

- The immediate supervisor
- Employees who were witnesses to the incident
- Other employees the investigator feels are necessary to complete the investigation

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-32015, filed 5/9/01, effective 9/1/01.]

WAC 296-800-32020 Conduct a preliminary investigation for all serious injuries. You must:

• Make sure your preliminary investigation is conducted to evaluate the facts relating to the cause of the incident by the following people:

- A person designated by the employer
- The immediate supervisor of the injured employee
- Witnesses
- An employee representative, such as a shop steward or other person chosen by the employees to represent them
- Any other person who has the experience and skills.
- If the employee representative is the business agent of the employee bargaining unit and is unavailable to participate without delaying the investigation group, you may proceed, by using one of the following:
 - The shop steward
 - An employee representative member of your safety committee
 - A person selected by all employees to represent them

Note: A preliminary investigation includes noting information such as the following:

- Where did the accident or incident occur?
- What time did it occur?
- What people were present?
- What was the employee doing at the time of the accident or incident?
- What happened during the accident or incident?

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-32020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-32025 Document the investigation findings. You must:

• Document the investigation findings for reference following any formal investigation.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-32025, filed 5/9/01, effective 9/1/01.]

WAC 296-800-330 Releasing accident investigation reports. The department must:

- Keep accident investigations and related reports confidential.
- Not freely release results of accident investigations and related reports that are confidential.
- Make available accident investigation reports, without the need of a court order, only to the following:
 - Injured workers, their legal representatives, or their labor organization representatives.
 - The legal representative or labor organization representative of a deceased worker.
 - The employer of any injured or deceased worker.
 - Any other employer or person whose actions or business operations are the subject of the report or investigation.
 - Any attorney representing a party in any pending legal action in which an investigative report constitutes material and relevant evidence.
 - Employees of governmental agencies in the performance of their official duties.
 - Any beneficiary of a deceased worker actually receiving benefits under the terms of Title 51 RCW, the Industrial Insurance Act.

Note: The records officer may provide accident investigation reports to the closest surviving member of the deceased worker's immediate family.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-330, filed 5/9/01, effective 9/1/01.]

WAC 296-800-340 Protecting the identity of the source of confidential information. The department must:

- Not reveal the source of information when a promise has been made to keep the identity of the source confidential.
- Not disclose information that would reveal the source's identity, whenever a department file contains an investigative report or information from a source under a promise of confidentiality.
 - The contents of an investigative report may be withheld only to the extent necessary to conceal the identity of the source.
 - When information is withheld, the records officer must give a general characterization of the information withheld, but must not reveal the identity of the information's source.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-340, filed 5/9/01, effective 9/1/01.]

WAC 296-800-350 Introduction.

This section describes actions WISHA takes during or after inspections, and your related obligation and rights.

Your responsibility: You must follow posting requirements and notify your employees of the information listed in these rules, as indicated.

You must:**WISHA INSPECTIONS AND CITATIONS**

Types of workplace inspections

WAC 296-800-35002

Scheduling inspections

WAC 296-800-35004

Inspection techniques

WAC 296-800-35006

Response to complaints submitted by employees or their representatives

WAC 296-800-35008

Citations mailed after an inspection

WAC 296-800-35010

Employees (or their representatives) can request a citation and notice

WAC 296-800-35012

Posting a citation and notice and employee complaint information

WAC 296-800-35016

CIVIL PENALTIES FOR VIOLATING WISHA REQUIREMENTS

Reasons to assess civil penalties

WAC 296-800-35018

Minimum penalties

WAC 296-800-35020

HOW CIVIL PENALTIES ARE CALCULATED

Base penalty calculations - severity and probability

WAC 296-800-35022

Severity rate determination
 WAC 296-800-35024
 Probability rate determination
 WAC 296-800-35026
 Determining the gravity of a violation
 WAC 296-800-35028
 Base penalty adjustments
 WAC 296-800-35030
 Types of base penalty adjustments
 WAC 296-800-35032
 Maximum base penalty amount
 WAC 296-800-35038
 Reasons for increasing civil penalty amounts
 WAC 296-800-35040

CERTIFY THAT VIOLATIONS HAVE BEEN ABATED

Employers must certify that violations have been abated
 WAC 296-800-35042
 For willful, repeated, or serious violations, submit additional documentation
 WAC 296-800-35044
 Submitting correction action plans
 WAC 296-800-35046
 Submit progress reports to the department, when required
 WAC 296-800-35048
 WISHA determines the date by which abatement documents must be submitted
 WAC 296-800-35049
 Inform affected employees and their representatives of abatement actions you have taken
 WAC 296-800-35050
 Tag cited moveable equipment to warn employees of a hazard
 WAC 296-800-35052

REQUESTING MORE TIME TO COMPLY

You can request more time to comply
 WAC 296-800-35056
 WISHA's response to your request for more time
 WAC 296-800-35062
 Post the department's response
 WAC 296-800-35063
 A hearing can be requested about the department's response
 WAC 296-800-35064
 Post the department's hearing notice
 WAC 296-800-35065
 Hearing procedures
 WAC 296-800-35066
 Post the hearing decision
 WAC 296-800-35072

REQUESTING AN APPEAL OF WISHA CITATIONS AND CORRECTIVE NOTICES

Employers and employees can request an appeal of a citation and notice
 WAC 296-800-35076
 Await the department's response to your appeal request

WAC 296-800-35078
 Department actions when reassuming jurisdiction over an appeal
 WAC 296-800-35080
 Appealing a corrective notice
 WAC 296-800-35082
 Notify employees
 WAC 296-800-35084

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-350, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-350, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35002 Types of workplace inspections.

- WISHA conducts the following types of inspections:
 - **Programmed inspections** of hazardous workplaces.

WISHA identifies hazardous workplaces using objective criteria and inspection-scheduling systems that may look at any of the following factors:

- ◆ Type of industry
 - ◆ Available data of injuries and illnesses where an inspection might eliminate the hazards causing them
 - ◆ Employer's industrial insurance experience
 - ◆ Number, type, and toxicity of contaminants in the workplace
 - ◆ Degree of exposure to hazards
 - ◆ Number of employees exposed
 - ◆ Other factors, such as history of employee complaints
- WISHA periodically reviews the scheduling systems and may adjust the factors used and/or the weight given to each factor

– **Routine programmed inspections** in the following high hazard industries:

- ◆ Agriculture
- ◆ Asbestos renovation and demolition
- ◆ Construction
- ◆ Electrical utilities and communications
- ◆ Logging
- ◆ Maritime

– **Unprogrammed inspections** of workplaces that may be in violation of WISHA safety or health rules or chapter 49.17 RCW, the Washington Industrial Safety and Health Act. Unprogrammed inspections may result because of:

- ◆ Complaints from employees, former employees, or employee representatives who believe they have been exposed to a hazard because of a violation
- ◆ Referrals from anyone who reasonably believes that workers under WISHA jurisdiction are being or have been exposed to a hazard because of a violation

– **Workplace deaths and serious injuries or illnesses investigations** to determine if they were caused by a violation of safety and health rules or chapter 49.17 RCW, the Washington Industrial Safety and Health Act. WISHA may also initiate comprehensive inspections based on such investigations

– **Imminent danger of serious injury or death inspections** when there is a reason to believe that employees may be in imminent danger of serious injury or death

– **Follow-up inspections** at later dates to verify that you have corrected any hazards identified in a citation

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35002, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35004 Scheduling inspections.

• WISHA distributes staff performing inspections as efficiently as possible to ensure maximum protection for workers.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35004, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35006 Inspection techniques.

- During an inspection, WISHA staff may:
 - Take samples, photographs, videotapes, or audiotapes
 - Conduct tests
 - Ask employees to wear sampling devices
 - Conduct interviews
 - Privately question, on or off the worksite, any:
 - ♦ Employer
 - ♦ Employer representative
 - ♦ Owner
 - ♦ Operator
 - ♦ Employee
 - ♦ Employee representative
 - Employ any other reasonable investigative techniques

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35006, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35008 Response to complaints submitted by employees or their representatives.

• When an employee or their representative has filed a complaint, WISHA will:

– Remove the name of the person submitting the complaint and the names of any employees identified in the complaint before giving a copy of the complaint to an employer, unless the person filing the complaint gives WISHA written permission to release the names involved

– Give a copy of the citation and notice to the employee (or their representative) who submitted the complaint, or explain to them why an inspection was not conducted

– Review any department decision refusing to inspect or cite violations alleged in a complaint, if requested in writing

– Notify the person in writing of the review results. If the person requesting the review is not satisfied with the results, they may request a second review by the department

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35008, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35010 Citations mailed after an inspection. • After an inspection or an investigation, WISHA will mail a citation to you within 6 months following the inspection or investigation

- The citation will include
 - A description of any violations found
 - The amount and type of assessed penalties
 - The length of time given to correct the violations

• If no violations are found, WISHA will normally send you a citation and notice indicating that no violations were found

- Note:
- Copies of WISHA safety and health inspection reports can be requested. The request should be mailed to:
DEPARTMENT OF LABOR AND INDUSTRIES
PUBLIC DISCLOSURE UNIT
P.O. BOX 44632
OLYMPIA WA 98504-4632
 - You can also contact your local labor and industries field office for information on requesting copies of inspection reports (see the resource section of this book).

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35010, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35010, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35012 Employees (or their representatives) can request a citation and notice.

• Employees or their representatives may request copies of citation and notices issued to the employer

– Complete the Request for Copy of Citation and Notice form, and mail it to:

DEPARTMENT OF LABOR AND INDUSTRIES
STANDARDS AND INFORMATION
P.O. BOX 44638
OLYMPIA WA 98504-4638

- Note:
- To obtain a copy of the Request for Copy of Citation and Notice form, call 360-902-5534, or contact your local labor and industries office (see the resource section for a complete list of the offices.)
 - If you submit this form, you'll receive all citation and notices issued to that employer for the next 12 months.
 - When the department approves the request for a copy of a citation and notice, WISHA will indicate the date the application is approved, and the date it expires. Once approved, your application is valid for one year. Once expired, a one-year extension may be requested.
 - You can waive the one-year period when you make your initial request.
 - If more than one employee representative requests a copy of the same citation and notice, the department may decide which person will receive the copy of the citation and notice.
 - The department can deny requests for copies of citation and notices if the person filing the request is not an employee representative.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35012, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35012, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35016 Posting a citation and notice and employee complaint information. You must:

• Immediately notify your employees of a citation and notice by posting them and/or any correspondence related to an employee complaint on the safety bulletin board for 3 working days, or until all violations have been corrected, whichever is longer.

• Use any other appropriate means to notify employees who cannot receive notices posted on the safety bulletin board; for example, a copy to authorized employee representatives or the safety committee, or copies sent electronically.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35016, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35018 Reasons to assess civil penalties.

- WISHA may assess civil penalties when a citation and notice is issued for any violation of health and safety rules, or statutes found during an inspection.

- WISHA will assess civil penalties:

- When a citation for a serious violation is issued.

- Under other circumstances specified by statute (such as RCW 49.17.180, 49.26.016, 49.17.177, 49.70.190).

- Civil penalties promote compliance, encouraging employers to correct violations before an inspection takes place and avoiding the risk of receiving a penalty assessment. Civil penalties help promote a level playing field for employers complying with the rules by assessing penalties for those who do not comply.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35018, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35020 Minimum penalties.

- The minimum penalty amounts assessed by WISHA are:

- \$100 for any penalty

- \$5,000 per violation for all willful violations

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35020, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35022 Base penalty calculations—Severity and probability.

- Except for specific penalty amounts that are dictated by statute, WISHA calculates the base civil penalty for a violation by evaluating:

- The severity of the injury, illness, or disease that could result from the alleged hazard

- The probability that an injury, illness, or disease could occur as a result of the alleged hazard

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35022, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35024 Severity rate determination.

- Severity describes how serious an injury, illness, or disease might be because of a hazardous condition. Severity ratings are based on the most serious injury, illness, or disease that could be reasonably expected to occur because of a hazardous condition (see Table 1).

- Severity ratings are expressed in whole numbers and range from 1 (lowest) to 6 (highest). A violation with a severity rating of 4, 5, or 6 is considered to be a serious violation.

Severity	Table 1: Severity Ratings Most serious injury, illness, or disease likely to result in:
6	Death from injury, illness or disease; injuries involving permanent severe disability; chronic, irreversible illness.
5	Permanent disability of a limited or less severe nature, injuries or reversible illnesses resulting in hospitalization.

Table 1: Severity Ratings

4	Injuries or temporary, reversible illnesses resulting in serious physical harm (but less than 5 or 6 above) and may require removal from exposure or supportive treatment without hospitalization for recovery.
3	Injuries or illness would probably not cause death or serious physical harm, but violations have at least major impact and an indirect relationship to serious injury, illness or disease. Violations could have direct and immediate relationship to safety and health of employees. No need for medical treatment beyond first aid.
2	Nonserious or general violations of minor impact, including violations that have an indirect relationship to nonserious injury, illness or disease. No injury, illness or disease without additional violations.
1	No injury, and not likely to result in injury in the presence of other violations.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35024, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35026 Probability rate determination.

- Probability refers to the likelihood of an injury, illness or disease occurring, and is expressed in whole numbers ranging from 1 (lowest) to 6 (highest). Probability does not change severity.

- When determining probability, WISHA considers the number of employees affected and other factors, depending on the situation. Other factors may include:

- Frequency of employee exposure

- Instances (number of times the same violation occurs in the workplace)

- How close an employee is to the hazard

- Weather and other working conditions

- Employee skill level

- Employee awareness of the hazard

- The pace, speed, and nature of the task or work

- Use of personal protective equipment

- Amount of exposure (for health violations)

- Other mitigating or contributing circumstances

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35026, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35026, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35028 Determining the gravity of a violation.

- WISHA calculates most base penalties by assigning a weight to a violation. This weight is called "gravity." Gravity is calculated by multiplying a violation's severity by its probability. Expressed as a formula, gravity is:

Gravity = Severity x Probability

- Unless a particular rule establishes penalty amounts for specific violations, WISHA uses Table 2 to determine the dollar amount for each base penalty

Table 2: Penalty Amount Using Gravity

Gravity	Base Penalty
1	\$100
2	\$200
3	\$300
4	\$400
5	\$500
6	\$1000
8	\$1500
9	\$2000
10	\$2500
12	\$3000
15	\$3500
16	\$4000
18	\$4500
20	\$5000
24	\$5500
25	\$6000
30	\$6500
36	\$7000

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35028, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35030 Base penalty adjustments.

• WISHA may adjust an employee's base penalty amount because of the good faith effort, size, and compliance history. No adjustments are made to penalty amounts specified by statute

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35030, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35030, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35032 Types of base penalty adjustments. Employer's Good Faith

• An employer's good faith effort (or lack of) may justify increasing or decreasing a base penalty. No single factor determines good faith. Good faith is a reflection of an employer's:

- Effort before an inspection to provide a safe and healthful workplace for employees
- Effort to comply with a standard they have violated
- Cooperation during an inspection that is measured by a desire to comply with the cited standard and immediately correct identified hazards

• WISHA uses Table 3 to adjust base penalty amounts because of good faith effort

Table 3: Good Faith Adjustments

Good Faith Rating	Adjustment to Base Penalty
Excellent	35% reduction
Good	20% reduction
Average	No adjustment
Poor	20% increase

Employer's Work Force Size

• WISHA may adjust base penalties due to the size of an employer's work force in the state of Washington by using Table 4:

Table 4: Size Adjustments

Number of Employees	Adjustment to Base Penalty
1-25	60% reduction
26-100	40% reduction
101-250	20% reduction
More than 250	No adjustment

Employer's Compliance History

• WISHA may adjust a base penalty based on an employer's history of safety and health violations in the state of Washington, using previous citations as well as injury and illness rates (see Table 5).

Table 5: History Adjustments

History Rating	Adjustment to Base Penalty
Good	10% reduction
Average	No adjustment
Poor	10% increase

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35032, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35038 Maximum base penalty amount.

• The maximum penalty for a violation other than repeat, willful, egregious or failure-to-abate is \$7,000.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35038, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35040 Reasons for increasing civil penalty amounts.

• WISHA may increase civil penalties by applying a multiplier to an adjusted base penalty. Multipliers may be applied for the following reasons:

Repeat violations:

A repeat violation occurs when WISHA cites an employer more than once in the last 3 years for a substantially similar hazard.

- The 3-year period is measured from the date of the final order for each previous citation
- The adjusted base penalty will be multiplied by the total number of inspections with violations (including the current inspection with a violation) involving similar hazards
- The maximum penalty cannot exceed \$70,000 for each violation

Willful violations:

A willful violation is a voluntary action done either with an intentional disregard of, or plain indifference to, the requirements of the applicable WISHA rule(s):

- For all willful violations, the adjusted base penalty will be multiplied by 10
- All willful violations will receive at least the statutory minimum penalty of \$5,000
- The maximum penalty cannot exceed \$70,000 for each violation

Egregious violations:

An egregious violation may be issued for exceptionally flagrant cases involving willful violations. In these cases, WISHA will issue a separate penalty for each instance of an employer failing to comply with a particular rule

Failure-to-abate violations:

A failure-to-abate violation occurs when an employer who has been cited for a WISHA violation, fails to correct the violation on time (certifying corrected violations is covered in WAC 296-800-35200 through 296-800-35270)

– The maximum penalty cannot exceed \$7,000 for every day the violation is not corrected

– For a general violation with no initial penalty, the minimum failure-to-abate penalty is \$1,000, with a possible adjustment for the employer's effort to comply

– For violations with an initial penalty, WISHA, based on the facts at the time of reinspection:

♦ Will multiply the adjusted base penalty by 5, but may possibly make adjustments for the employer's effort to comply

♦ May multiply the adjusted base penalty by the number of days past the correction date if the employer does not make an effort to comply.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35040, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35040, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35042 Employers must certify that violations have been abated. You must:

• Certify within 10 calendar days following the correction date that you have abated each violation, unless the compliance officer indicates in your citation and notice that you have corrected the violations. Include the following:

– Your name and address

– The inspection number your written statement applies to

– The citation and item numbers your written statement applies to

– The date and method you used to abate each violation

– That you informed your affected employees and their representatives that each violation was corrected

– That the information you submitted is accurate

– Your signature or the signature of your authorized representative

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35042, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35044 For willful, repeated, or serious violations, submit additional documentation. You must:

• Submit additional documentation for each willful or repeated violation supporting that abatement is completed. This documentation may include, but is not limited to:

– Evidence of the purchase, or repair, of equipment

– Photographic or video evidence of corrections

– Other written records

• Submit additional documentation for a serious violation, when required by the citation and notice.

[2002 WAC Supp—page 1458]

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35044, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35046 Submitting correction action plans. You must:

• Submit a correction action plan within 25 calendar days from the final order date if the Citation and Notice requires it.

Your plan must:

– Identify the violation

– List the steps you will take to correct the violation

– Include a schedule to complete the steps

– Describe how employees will be protected until the corrections are completed

Note:

- The department will notify you in writing if there is anything inadequate about your plan and will work out the problems.
- When determining if required documents are submitted on time, the department looks at the postmark date for documents sent by standard mail and the date received by other means, such as personal delivery or fax.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35046, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35048 Submit progress reports to the department when required. You must:

• Submit progress reports on the abatement if the citation and notice requires it and briefly state (a single sentence is normally adequate for each violation):

– The action taken to abate each violation

– The date each action was taken

Note:

If progress reports are required, the citation and notice will include:

- The items for which periodic progress reports are required,
- The date when an initial progress report must be submitted (no sooner than 30 calendar days after you submit a correction plan),
- Whether additional progress reports are required.
- The date(s) on which additional progress reports must be submitted.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35048, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35048, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35049 WISHA determines the date by which abatement documents must be submitted.

• When determining if required documents are submitted on time, the department looks at:

– Date of postmark for documents sent by mail

– Date the department receives the documents, if transmitted by a means other than mail

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35049, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35050 Inform affected employees and their representatives of abatement actions you have taken. You must:

• Post a copy of each abatement action document you submit to the department (or a summary) near the place where the violations occurred, if practical.

• Do the following if posting near the violation site is not practical, such as with a mobile work operation:

– Post each document (or a summary) in a location that is readily accessible by affected employees and their representatives

– Take other steps to fully communicate abatement actions to affected employees and their representatives

• Make sure that:

– Notice is given to your employees and their representatives on or before the date you submit abatement information to the department

– All abatement documents remain posted for at least 3 working days after they are submitted to the department

– All posted abatement documents are not altered, defaced, or covered by other materials

• Inform employees and their representatives of their right to examine and copy all abatement documents you submit to the department. If they ask to examine or copy your documents within 3 working days of receiving notice that you submitted them to the department, you have 5 days to comply with their request after receiving it.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35050, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35050, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35052 Tag cited moveable equipment to warn employees of a hazard. You must:

• Tag cited moveable equipment to warn employees of a hazard if it has not been abated.

– Attach a warning tag or a copy of the citation to the equipment's operating controls or to the cited component:

– For hand-held equipment, tag it immediately after you receive a citation

– For other equipment, tag it before moving it within the worksite or between worksites

– The tag should properly warn employees about the nature of the violation and tell them where the citation is posted (see the Helpful Tools Section for a sample tag that can be used to meet this requirement)

• Make sure that the tag or copy of the citation attached to movable equipment is not altered, defaced, or covered by other materials

• Make sure that the tag or copy of the citation attached to movable equipment remains attached until:

– You have abated the violation and submitted all abatement certification documents required by the department

– You have permanently removed the cited equipment from service

– You no longer have control over the cited equipment

– A final order sets aside the violation

Note: Chapter 296-155 WAC, Safety Standards for Construction Work and chapter 296-24 WAC, General Safety and Health Standards have information on warning tags. You can use warning tags that meet the requirements in those rules instead of the warning tags required by this rule.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35052, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35056 You can request more time to comply.

• You can request more time to comply if you:

– Have made a good faith effort to comply with a citation's abatement requirements

– Have not completed your abatement because of factors beyond your control

• Requests for more time must:

– Be submitted in writing by you or your representative, and include:

– The name of your business

– The address of the workplace(s)

– Identification of the citation and the abatement date(s) you want extended

– The new abatement date and length of abatement period you are seeking

– A description of the actions you have taken to comply with the abatement date(s) in the citation

– Identification of the factors beyond your control that are preventing you from complying with the abatement date(s)

– The means you will use to protect your employees during the time you are abating the violation.

– Be received before midnight of the date you are asking to be extended

• The department may accept late requests if they are:

– Received within 5 days following the applicable correction date.

– Accompanied by your written statement explaining the exceptional circumstances that caused the delay.

Note: The department does not accept late requests when compliance activity related to the abatement starts before the request is received.

• The department accepts requests by:

– First class mail postage prepaid. Mailed to:

Department of Labor and Industries

WISHA Appeals

P.O. Box 44604

Olympia, WA 98504-4604

– Personal delivery

– Fax: (360) 902-5581

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35056, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35062 WISHA's response to your request for more time.

• Within 5 working days of receiving your request for more time to comply, the assistant director must make a decision to approve or deny it. Before making a decision, the assistant director may conduct an investigation. Once made, the decision remains in effect unless a hearing is requested.

• The assistant director must issue the following 3 notices (which can be combined into one):

– A notice verifying that your request was received, including the correction dates listed in your citation.

– A notice of your right to request a hearing on the decision

– A notice announcing the decision.

◆ These notices must:

■ Be signed by the assistant director,

■ Contain the date they were issued, and

■ Include the address to which a hearing request may be sent.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35062, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35062, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35063 Post the department's response. You must:

- Post notices with the citation for which you are requesting additional abatement time immediately upon receipt. The notices must remain posted until:
 - The abatement date has passed or
 - A hearing notice is posted.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35063, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35064 A hearing can be requested about the department's response.

• You, your affected employees or their authorized representative, may request a hearing if they disagree with the department's response to a request for more time to comply.

• All hearing requests must be sent or delivered to the assistant director and be received at the address identified in the notice of your right to request a hearing no later than 10 calendar days after the issue date of the notice.

• Upon receiving a hearing request, the assistant director will issue a notice of hearing to the requesting party and the employer at least 20 days before the hearing date. The hearing notice will:

- state that all interested parties can participate in the hearing
- set the time and date, including:
 - ◆ the time, place, and nature of the proceeding
 - ◆ the legal authority and jurisdiction under which the hearing will be held
 - ◆ a reference to the particular sections of the statute and rules involved, and
 - ◆ a short and clear explanation why a hearing was requested.

• The employer must post the department's hearing notice or a complete copy until the hearing is held. This includes the:

- Citation containing the correction date for which more time was requested.
- Department notices issued in response to the employer's request for more time.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35064, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35064, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35065 Post the department's hearing notice. You must:

- Post the department's hearing notice or a complete copy until the hearing is held. This includes the:
 - Citation containing the correction date for which more time was requested
 - Department notices issued in response to the employer's request for more time

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35065, filed 5/9/01, effective 9/1/01.]

[2002 WAC Supp—page 1460]

WAC 296-800-35066 Hearing procedures.

• The assistant director for WISHA services will appoint someone from the department to act as a hearings officer.

• The hearings officer must be present at, and conduct, the hearing. An assistant attorney general may be present to give legal advice to the hearings officer.

• If the hearings officer requests, the assistant attorney general may conduct the hearing.

• The hearings officer may discuss the material to be presented to determine how the hearing will proceed.

• The hearing must be conducted according to the Administrative Procedure Act. Copies of hearing transcripts will be available to the parties, at cost, upon request.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35066, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35066, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35072 Post the hearing decision.

• After the hearing, the assistant director will issue an order:

- Affirming or modifying the correction date that caused the hearing

AND

- Complying with the provisions of the Administrative Procedure Act, chapter 34.05 RCW and the Practice and Procedure Rules, chapter 296-08 WAC.

You must:

- Post a complete, unedited copy of this decision, along with the citation to which it applies, as soon as it is received.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35072, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35076 Employers and employees can request an appeal of a citation and notice.

EMPLOYER REQUESTS

• Any employer cited for a violation of WISHA safety and health rules may appeal a citation or corrective notice.

• Your request must include:

- Business name, address, telephone number; and the name, address and telephone number of any person representing you.

– Citation number.

– What you think is wrong with the citation or corrective notice and any related facts.

– What you think should be changed, and why.

EMPLOYEE REQUESTS

• Any employee or employee representative who could be affected by a citation or its correction may appeal the abatement date in the citation or corrective notice.

• Your request must include:

- Your name, address, telephone number, and the name, address and telephone number of any person representing you

– Citation number

– What you think is wrong with the abatement date

• All appeal requests must be in writing and submitted to the department within 15 working days after receiving the

citation corrective notice. If you mail your request, the postmark is considered the submission date.

• **All requests must be:**

– Mailed to:

Department of Labor and Industries

WISHA Appeals

P.O. Box 44604

Olympia, WA 98504-4604

or

– Faxed to: (360) 902-5581

or

– Brought to any department service location

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35076, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35078 Await the department's response to your appeal request.

• When an appeal request is received, the department decides whether to reassume jurisdiction over the citation and notice being appealed or forward the appeal to the Board of Industrial Insurance Appeals. The department will notify the person who submitted the appeal when the department reassumes jurisdiction.

Definition: Reassume jurisdiction means that the department has decided to hear the appeal.

• The department may reassume jurisdiction to:

– Provide an employer and affected employees an opportunity to present relevant information, facts, and opinions during an informal conference

– Give an employer, affected employees and the department an opportunity to resolve appeals rapidly and without further contest, especially in routine compliance cases

– Educate employers about the citation and notice, the WISHA appeals process, and WISHA compliance

– Review citations, penalties, and correction dates for fairness and accuracy to ensure quality work by the department

• If the department does not reassume jurisdiction, it will send the appeal to the Board of Industrial Insurance Appeals. The board will send the person submitting the appeal a notice with the time and location of any board proceedings.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35078, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35080 Department actions when reassuming jurisdiction over an appeal.

• The department has 30 working days after receipt of the appeal to review it, gather more information and decide whether to make changes to the citation and notice. The 30 working days begin with the first working day after the appeal is received. For example, if an appeal is received on Friday, the 30 days will begin on the following Monday unless it is a state holiday.

• The department may extend the appeal review period up to an additional 15 working days if everyone involved agrees to the extension.

• During the review period, the department will hold an informal conference about the appeal.

– An informal conference is not an evidentiary hearing. It is an opportunity for interested parties to briefly explain

their positions and provide any additional information they would like the department to consider when reviewing the citation and notice.

– Although informal, the conference is an official conference and the department may record all or part of it. The department will tell participants when the conference will be recorded.

• After the review period, the department will issue a corrective notice reflecting any changes made to the citation and notice. This notice will be sent to the employer and any employee representatives participating in the appeal process.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35080, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35082 Appealing a corrective notice.

• Anyone who can appeal a citation and notice may appeal a corrective notice. All corrective notice appeals must be submitted within 15 working days after the notice was received.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-35082, filed 5/9/01, effective 9/1/01.]

WAC 296-800-35084 Notify employees. You must:

• Immediately post all correspondence from the department in a conspicuous place after submitting an appeal. This correspondence includes:

– The notice of appeal

– The notice explaining that the department reassumed jurisdiction over the citation and notice

– Any extensions to the review period

– The notice for an informal conference

– Corrective notices

• Post all notices and information related to the appeal in the place where WISHA citations and notices are posted (see WAC 296-800-35050). These include:

– A notice of appeal until the appeal is resolved

– Notices about the department reassuming jurisdiction and any extension of the review period until the end of review period

– A notice of an informal conference until after the conference is held

– Corrective notices for as long as citations and notices must be posted

– Requesting alternate means of compliance with WISHA rules.

Note: If you wish to develop an alternate means of compliance with WISHA rules, you may do so by following the instructions in WAC 296-350-700, Variances from WISHA rules.

• In certain circumstances, the department allows an employer to vary from a specific WISHA safety and health standard if the employer uses department-approved substitute measures to protect employees. The substitute measure must provide at least the same protection from workplace hazards as provided by the WISHA standard.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-35084, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-35084, filed 5/9/01, effective 9/1/01.]

WAC 296-800-360 Rule. Your responsibility: To use the safety and health standards from national organizations and federal agencies, when directed to by WISHA rules.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-360, filed 5/9/01, effective 9/1/01.]

WAC 296-800-36005 Comply with standards national organizations or of federal agencies when referenced in WISHA rules. You must:

- Use the following to be in compliance with WISHA rules:

- The edition of the standard specified in the WISHA rule or

- Any edition published after the edition specified in the WISHA rule.

Note: The specific standards referenced in the WISHA rules are available:

- For review at your local department of labor and industries office.

- See <http://www.wa.gov/lni/pa/direct.htm>

- Through the local library system

- Through the issuing organization.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-11-038, § 296-800-36005, filed 5/9/01, effective 9/1/01.]

WAC 296-800-370 Definitions.

Abatement Action Plans

Refers to your written plans for correcting a WISHA violation.

Abatement date

The date on the citation when you must comply with specific safety and health standards listed on the citation and notice of assessment or the corrective notice of redetermination.

Acceptable

As used in **Electrical**, WAC 296-800-280 means an installation or equipment is acceptable to the director of labor and industries, and approved:

- If it is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory; or

- 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

- 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.

Accepted

As used in **Electrical**, WAC 296-800-280 means 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.

Access

As used in material safety data sheets (MSDSs) as Exposure Records, WAC 296-800-180 means the right and opportunity to examine and copy exposure records.

Affected employees

As used in WISHA appeals, penalties and other procedural rules, WAC 296-800-350 means employees exposed to hazards identified as violations in a citation.

Analysis using exposure or medical records

- An analysis using exposure records or medical records can be any collection of data or a statistical study. It can be based on either:

- Partial or complete information from individual employee exposure or medical records or

- Information collected from health insurance claim records

- The analysis is not final until it has been:

- Reported to the employer or

- Completed by the person responsible for the analysis

ANSI

This is an acronym for the American National Standards Institute.

Approved means:

- Approved by the director of the department of labor and industries or their authorized representative, or by an organization that is specifically named in a rule, such as Underwriters' Laboratories (UL), Mine Safety and Health Administration (MSHA), or the National Institute for Occupational Safety and Health (NIOSH).

- As used in **Electrical**, WAC 296-800-280 means 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.

Assistant director

The assistant director for the WISHA services division at the department of labor and industries.

ASTM

This is an acronym for American Society for Testing and Materials.

Attachment plug or plug

As used in the basic electrical rules, WAC 296-800-280 means the attachment at the end of a flexible cord or cable that is part of a piece of electrical equipment. When it is inserted into an outlet or receptacle, it connects the conductors supplying electrical power from the outlet to the flexible cable.

Bare conductor

A conductor that does not have any covering or insulation.

Bathroom

A room maintained within or on the premises of any place of employment, containing toilets that flush for use by employees.

Board

As used in WISHA appeals, penalties and other procedural rules, WAC 296-800-350 means the board of industrial insurance appeals.

Certification

As used in WISHA appeals, penalties and other procedural rules, WAC 296-800-350 means refers to an employer's written statement describing when and how a citation violation was corrected.

CFR

This is an acronym for Code of Federal Regulations.

Chemical

Any element, chemical compound, or mixture of elements and/or compounds.

Chemical manufacturer

An employer with a workplace where one or more chemicals are produced for use or distribution.

Chemical name

The scientific designation of a chemical in accordance with one of the following:

- The nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC)
- The Chemical Abstracts Service (CAS) rules of nomenclature
- A name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

Circuit breaker

• Is a device used to manually open or close a circuit. This device will also open the circuit automatically and without damage to the breaker when a predetermined overcurrent is applied. (600 volts nominal or less)

• Is 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. (Over 600 volts nominal)

Citation

Refers to the citation and notice issued to an employer for any violation of WISHA safety and health rules. A citation and notice may be referred to as a citation and notice of assessment but is more commonly referred to as a citation.

Combustible liquid

A combustible liquid has a flashpoint of at least 100°F (37.8°C) and below 200°F (93.3°C). Mixtures with at least 99% of their components having flashpoints of 200°F (93.3°C) or higher are not considered combustible liquids.

Commercial account

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means an arrangement in which a retail distributor sells hazardous chemical(s) to an employer, generally in large quantities over time, and/or at costs that are below the regular retail price.

Common name

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means any designation or identification such as:

- Code name
- Code number
- Trade name
- Brand name
- Generic name used to identify a chemical other than by its chemical name.

Compressed gas

A gas or mixture of gases that, when in a container, has an absolute pressure exceeding:

- 40 psi at 70°F (21.1°C)

OR

- 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C)

Compressed gas can also mean a liquid with a vapor pressure that exceeds 40 psi at 100°F (37.8°C)

Conductor

A wire that transfers electric power.

Container

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means any container, except for pipes or piping systems, that contains a hazardous chemical. It can be any of the following:

- Bag
- Barrel
- Bottle
- Box
- Can
- Cylinder
- Drum
- Reaction vessel
- Storage tank

Correction date

The date by which a violation must be corrected. Final orders or extensions that give additional time to make corrections establish correction dates. A correction date established by an order of the board of industrial insurance appeals remains in effect during any court appeal unless the court suspends the date.

Corrective notice

Refers to a notice changing a citation and is issued by the department after a citation has been appealed.

Covered conductor

A conductor that is covered by something else besides electrical insulation.

Damp location

As used in basic electrical rules, WAC 296-800-280 means partially protected areas that are exposed to moderate moisture. Outdoor examples include roofed open porches and marquees. Interior examples include basements and barns.

Department

Those portions of the department of labor and industries responsible for enforcing the Washington Industrial Safety Act (WISHA).

Designated representative

- Any individual or organization to which an employee gives written authorization.
- A recognized or certified collective bargaining agent without regard to written employee authorization.
- The legal representative of a deceased or legally incapacitated employee.

Director

The director means the director of the department of labor and industries or their designee.

Distributor

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means a business, other than a chemical manufacturer or importer, that supplies hazardous chemicals to other distributors or to employers. See WAC 296-62-054 for requirements dealing with Manufacturers, Distributors and Importers - Hazard Communication.

Documentation

As used in WISHA appeals, penalties and other procedural rules, WAC 296-800-350 means material that you submit to prove that a correction is completed. Documentation includes, but is not limited to, photographs, receipts for materials and/or labor.

Dry location

As used in basic electrical rules, WAC 296-800-280 means areas not normally subjected to damp or wet conditions. Dry locations may become temporarily damp or wet, such as when constructing a building.

Electrical outlets

Places on an electric circuit where power is supplied to equipment through receptacles, sockets, and outlets for attachment plugs.

Employee

The term employee and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, means an employee of an employer who is employed in the business of his or 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 personal labor for an employer under this standard whether by way of manual labor or otherwise.

Employee exposure record

As used in material safety data sheets (MSDSs) as exposure records, WAC 296-800-180 means a record containing any of the following kinds of information:

- Environmental (workplace) monitoring or measuring of a toxic substance or harmful physical agent, including personal, area, grab, wipe, or other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained;
- Biological monitoring results which directly assess the absorption of a toxic substance or harmful physical agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent or which assess an employee's use of alcohol or drugs;

- Material safety data sheets indicating that the material may pose a hazard to human health;
- OR

- In the absence of the above, a chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common or trade name) of a toxic substance or harmful physical agent.

Employer

An employer is 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 persons, partnership, or business entity not having employees, and who is covered by the Industrial Insurance Act must be considered both an employer and an employee.

Exit

Provides a way of travel out of the workplace.

Exit route

A continuous and unobstructed path of exit travel from any point within a workplace to safety outside.

Explosive

A chemical that causes a sudden, almost instant release of pressure, gas, and heat when exposed to a sudden shock, pressure, or high temperature.

Exposed live parts

Electrical parts that are:

- Not suitably guarded, isolated, or insulated

AND

- Capable of being accidentally touched or approached closer than a safe distance.

Exposed wiring methods

Involve working with electrical wires that are attached to surfaces or behind panels designed to allow access to the wires.

Exposure or exposed

As used in employer chemical hazard communication, WAC 296-800-170 and material safety data sheets (MSDSs) as exposure records, WAC 296-800-180. An employee has been, or may have possibly been, subjected to a hazardous chemical, toxic substance or harmful physical agent while working. An employee could have been exposed to hazardous chemicals, toxic substances, or harmful physical agents in any of the following ways:

- Inhalation
- Ingestion
- Skin contact
- Absorption
- Related means.

The terms exposure and exposed only cover workplace exposure involving a toxic substance or harmful physical agent in the workplace different from typical nonoccupational situations in the way it is:

- Used
- Handled

- Stored
- Generated
- Present

Extension ladder

A portable ladder with 2 or more sections and is not self-supporting. The 2 or more sections travel in guides or brackets that let you change the length. The size of a portable ladder is determined by adding together the length of each section.

Failure-to-abate

Any violation(s) resulting from not complying with an abatement date.

Final order

Any of the following (unless an employer or other party files a timely appeal):

- Citation and notice;
- Corrective notice;
- Decision and order from the board of industrial insurance appeals;
- Denial of petition for review from the board of industrial insurance appeals; or
- Decision from a Washington State superior court, court of appeals, or the state supreme court.

Final order date

The date a final order is issued.

First aid

The extent of treatment you would expect from a person trained in basic first aid, using supplies from a first-aid kit.

Tests, such as X rays, must not be confused with treatment.

Flammable

A chemical covered by one of the following categories:

- Aerosol flammable means an aerosol that, when tested by the method described in 16 CFR 1500.45 yields either a flame projection more than 18 inches at full valve opening or a flashback (a flame extending back to the valve) at any degree of valve opening;

- Gas, flammable means:

- A gas that, at temperature and pressure of the surrounding area, forms a flammable mixture with air at a concentration of 13% by volume or less or

- A gas that, at temperature and pressure of the surrounding area, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit.

- Liquid, flammable 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 99% or more of the total volume of the mixture.

- Solid, flammable means a solid, other than a blasting agent or explosive as defined in WAC 296-52-417 or 29 CFR 1910.109(a), that is likely to cause fire through friction, moisture absorption, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily. Solid, inflammable also means that when the substance is ignited, it burns so powerfully and persistently that it creates a serious hazard. A chemical must be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-

sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint

- The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by any of the following measurement methods:

- Tagliabue closed tester: (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

- Pensky-Martens closed tester: (See American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

- Setaflash closed tester: (See American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78).)

Note: Organic peroxides, which undergo auto accelerating thermal decomposition, are excluded from any of the flashpoint measurement methods specified above.

Flexible cords and cables

Typically used to connect electrical equipment to an outlet or receptacle. These cords can have an attachment plug to connect to a power source or can be permanently wired into the power source. Flexible cords, extension cords, cables and electrical cords are all examples of flexible cord.

Floor hole

An opening in any floor, platform, pavement, or yard that measures at least one inch but less than 12 inches at its smallest dimension and through which materials and tools (but not people) can fall.

Examples of floor holes are:

- Belt holes
- Pipe openings
- Slot openings

Floor opening

An opening in any floor, platform, pavement, or yard that measures at least 12 inches in its smallest dimension and through which a person can fall.

Examples of floor openings are:

- Hatchways
- Stair or ladder openings
- Pits
- Large manholes

The following are NOT considered floor openings:

- Openings occupied by elevators
- Dumbwaiters
- Conveyors
- Machinery
- Containers

Foreseeable emergency

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means any potential event that could result in an uncontrolled release of a hazardous chemical into the workplace. Examples of foreseeable emergencies include

equipment failure, rupture of containers, or failure of control equipment.

Ground

As used in Electrical, WAC 296-800-280, a connection between an electrical circuit or equipment and the earth or other conducting body besides the earth. This connection can be intentional or accidental.

Grounded

A connection has been made between an electrical circuit or equipment and the earth or another conducting body besides the earth.

Grounded conductor

A system or circuit conductor that is intentionally grounded.

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.

Grounding conductor

Is used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

Grounding conductor, equipment

A conductor used to connect 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.

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 being accidentally touched or approached closer than a safe distance.

Handrail

A single bar or pipe supported on brackets from a wall or partition to provide a continuous handhold for persons using a stair.

Harmful physical agent

Any chemical substance, biological agent (bacteria, virus, fungus, etc.), or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and nonionizing radiation, hypo- or hyperbaric pressure, etc.) which:

- Is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) *Registry of Toxic Effects of Chemical Substances* (RTECS) (see Appendix B); or
- Has shown positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the employer;

OR

- Is the subject of a material safety data sheet kept by or known to the employer showing that the material may pose a hazard to human health.

Hazard

Any condition, potential or inherent, which can cause injury, death, or occupational disease.

Hazard warning

As used in Employer Chemical Hazard Communication, WAC 296-800-170 can be a combination of words, pictures, symbols, or combination appearing on a label or other appropriate form of warning which shows the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s).

Note: See definition for physical hazard and health hazard to determine which hazards must be covered.

Hazardous chemical

Any chemical that is a physical or health hazard.

Health hazard

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means any chemical with the potential to cause acute or chronic health effects in exposed employees. The potential must be statistically significant based on evidence from at least one study conducted under established scientific principles. Health hazards include:

- Chemicals which are carcinogens
- Toxic or highly toxic agents
- Reproductive toxins
- Irritants
- Corrosives
- Sensitizers
- Hepatotoxins
- Nephrotoxins
- Neurotoxins
- Agents which act on the hematopoietic system
- Agents which damage the lungs, skin, eyes, or mucous membranes

See WAC 296-62-054 for more definitions and explanations about the scope of health hazards covered by this part.

See WAC 296-62-054 for the criteria used for determining whether or not a chemical is considered hazardous for purposes of this rule.

Hospitalization

To be sent to, to go to, or be admitted to, a hospital or an equivalent medical facility and receive medical treatment beyond first-aid treatment, regardless of the length of stay in the hospital or medical facility.

Identity

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means any chemical or common name listed on the material safety data sheet (MSDS) for the specific chemical. Each identity used must allow cross-references among the:

- Required list of hazardous chemicals
- Chemical label
- MSDSs

Imminent danger violation

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.

Importer

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means the first business within the Customs Territory of the USA that:

- Receives hazardous chemicals produced in other countries

AND

- Supplies them to distributors or employers within the USA

See WAC 296-62-054 for requirements dealing with Manufacturers, Importer and Distributors - Hazard Communication.

Insulated

A conductor has been completely covered by a material that is recognized as electrical insulation and is thick enough based on:

- The amount of voltage involved

AND

- The type of covering material

Interim waiver

An order granted by the department allowing an employer to vary from WISHA requirements until the department decides to grant a permanent or temporary waiver.

Ladder

Consists of 2 side rails joined at regular intervals by crosspieces called steps, rungs, or cleats. These steps are used to climb up or down.

Listed

Equipment is listed if it:

- Is listed in a publication by a nationally recognized laboratory (such as UL, underwriters laboratory) that inspects the production of that type of equipment,

AND

- States the equipment meets nationally recognized standards or has been tested and found safe to use in a specific manner.

Material safety data sheet (MSDS)

Written or printed material that tells you about the chemical(s), what it can do to and how to protect yourself, others, or the environment.

For requirements for developing MSDSs see WAC 296-62-054—Manufacturers, Importers, and Distributors - Hazard Communication.

Medical treatment

Treatment provided by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first-aid treatment even if provided by a physician or registered professional personnel.

Mixture

As used in Employer Chemical Hazard Communication, WAC 296-800-170, any combination of 2 or more chemicals (if that combination did not result from a chemical reaction).

Movable equipment

As used in WAC 296-800-35052, a hand-held or non-hand-held machine or device;

- That is powered or nonpowered;

AND

- Can be moved within or between worksites

Must

Must means mandatory.

NEMA

These initials stand for National Electrical Manufacturing Association.

NFPA

This is an acronym for National Fire Protection Association.

Nose

The portion of the stair tread that projects over the face of the riser below it.

Occupational Safety and Health Administration (OSHA)

Passed in 1970 by the U.S. Congress, the Occupational Safety and Health Act (OSHA) provides safety on the job for working men and women. OSHA oversees states (such as Washington) that have elected to administer their own safety and health program. OSHA requires WISHA rules to be at least as effective as OSHA rules.

Office work environment

An indoor or enclosed occupied space where clerical work, administration, or business is carried out.

In addition, it includes:

- Other workplace spaces controlled by the employer and used by office workers, such as cafeterias, meeting rooms, and washrooms.

- Office areas of manufacturing and production facilities, not including process areas.

- Office areas of businesses such as food and beverage establishments, agricultural operations, construction, commercial trade, services, etc.

Open riser

A stair step with an air space between treads has an open riser.

Organic peroxide

This is an organic compound containing the bivalent-O-O-structure. It may be considered a structural derivative of hydrogen peroxide if one or both of the hydrogen atoms has been replaced by an organic radical.

Outlet

See definition for electrical outlets.

Oxidizer

A chemical other than a blasting agent or explosive as defined in WAC 296-52-417 or CFR 1910.109(a), that starts or promotes combustion in other materials, causing fire either of itself or through the release of oxygen or other gases.

Permissible exposure limits (PELs)

PELs are airborne concentrations of substances measured by their concentration in the air no matter what amount is breathed by the employee. The permissible exposure limits (PELs) must include the following four categories:

- Permissible exposure limits - Time-weighted average (PEL-TWA) is the time-weighted average airborne exposure to any 8-hour work shift of a 40-hour work week and must not be exceeded.

- Permissible exposure limits - Short-term exposure limit (PEL-STEL) is the employee's 15-minute time-weighted average exposure which must not be exceeded at any time

during a work day unless another time limit is specified in a parenthetical notation below the limit. If another time period is specified, the time-weighted average exposure over that time period must not be exceeded at any time during the working day.

- Permissible exposure limits - Ceiling (PEL-C) is the employee's exposure which must not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, then the ceiling must be assessed as a 15-minute time-weighted average exposure which must not be exceeded at any time over a working day.

- Skin notation is the potential contribution to the overall employee exposure by the cutaneous route including mucous membranes and eye, either by airborne, or more particularly, by direct contact with the substance. These substances are identified as having a skin notation in the OSHA and WISHA PEL tables (29 CFR Part 1910 Subpart Z and WAC 296-62-075, respectively).

Person

One or more individuals, partnerships, associations, corporations, business trusts, legal representatives, or any organized group of persons.

Personal service room

Used for activities not directly connected with a business' production or service function such as:

- First-aid
- Medical services
- Dressing
- Showering
- Bathrooms
- Washing
- Eating

Personnel

See the definition for employees.

Physical hazard

As used in Employer Chemical Hazard Communication, WAC 296-800-170 means a chemical that has scientifically valid evidence to show it is one of the following:

- Combustible liquid
- Compressed gas
- Explosive
- Flammable
- Organic peroxide
- Oxidizer
- Pyrophoric
- Unstable (reactive)
- Water reactive

Platform

Platform means an extended step or landing that breaks a continuous run of stairs.

Plug

See definition for attachment plug.

Potable water

Water that you can safely drink. It meets specific safety 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.

Predictable and regular basis

Employee functions such as, but not limited to, inspection, service, repair and maintenance which are performed

- at least once every 2 weeks

OR

- 4 man-hours or more during any sequential 4-week period (to calculate man-hours multiply the number of employees by the number of hours during a 4-week period).

Produce

As used in Employer Chemical Hazard Communication, WAC 296-800-170, any one of the following:

- Manufacture
- Process
- Formulate
- Blend
- Extract
- Generate
- Emit
- Repackage

Purchaser

As used in Employer Chemical Hazard Communication, WAC 296-800-170, an employer who buys one or more hazardous chemicals to use in their workplace.

Pyrophoric

A chemical is pyrophoric if it will ignite spontaneously in the air when the temperature is 130°F (54.4°C) or below.

Qualified

A person is qualified if they have one of the following:

- Extensive knowledge, training and experience about the subject matter, work or project
- A recognized degree, certificate, or professional standing
- Successfully demonstrated problem solving skills about the subject, work, or project

Railing or standard railing

A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of persons.

Reassume jurisdiction

The department has decided to take back its control over a citation and notice being appealed.

Receptacle or receptacle outlet

As used in basic electrical rules, WAC 296-800-280 means outlets that accept a plug to supply electric power to equipment through a cord or cable.

Record

A record is any item, collection, or grouping of information. Examples include:

- Paper document
- Microfiche
- Microfilm
- X-ray film
- Computer record

Repeat violation

A repeat violation occurs when WISHA cites an employer more than once in the last 3 years for a substantially similar hazard.

Responsible party

As used in employer chemical hazard communication, WAC 296-800-170. Someone who can provide appropriate information about the hazardous chemical and emergency procedures.

Rise

The vertical distance from the top of a tread to the top of the next higher tread.

Riser

The vertical part of the step at the back of a tread that rises to the front of the tread above.

Rungs

Rungs are the cross pieces on ladders that are used to climb up and down the ladder.

Runway

An elevated walkway above the surrounding floor or ground level. Examples of runways are footwalks along shafting or walkways between buildings.

Safety factor

The term safety factor means the ratio of when something will break versus the actual working stress or safe load when it is used.

Serious violation

Serious violation must 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.

Should

Should means recommended.

Single ladder

A type of portable ladder with one section.

It is distinguished by all of the following:

- It has one section
- It cannot support itself
- Its length cannot be adjusted

Smoking

A person is smoking if they are:

- Lighting up
- Inhaling
- Exhaling
- Carrying a pipe, cigar or cigarette of any kind that is burning

Specific chemical identity

This term applies to chemical substances. It can mean the:

- Chemical name
- Chemical Abstracts Service (CAS) registry number
- Any other information that reveals the precise chemical designation of the substance.

Stair railing

A vertical barrier attached to a stairway with an open side to prevent falls. The top surface of the stair railing is used as a handrail

Stairs or stairway

A series of steps and landings:

- leading from one level or floor to another,
- leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment
- Used more or less continuously or routinely by employees, or only occasionally by specific individuals.
- With three or more risers

Standard safeguard

Safety devices that prevent hazards by their attachment to:

- Machinery
- Appliances
- Tools
- Buildings
- Equipment

These safeguards must be constructed of:

- Metal
- Wood
- Other suitable materials

The department makes the final determination about whether a safeguard is sufficient for its use.

Step ladder

A portable ladder with:

- Flat steps
- A hinge at the top allowing the ladder to fold out and support itself
- Its length that cannot be adjusted

Toeboard

A barrier at floor level along exposed edges of a floor opening, wall opening, platform, runway, or ramp, to prevent falls of materials.

Toxic substance

Any:

- Chemical substance
- Biological agent (such as bacteria, virus, or fungus)
- Physical stress (such as noise, vibration, or repetitive motion)

A substance is toxic if:

- The latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) *Registry of Toxic Effects of Chemical Substances* (RTECS) lists the substance
- Testing by or known to the employer has shown positive evidence that the substance is an acute or chronic health hazard

- A material safety data sheet kept by or known to the employer shows the material may be a hazard to human health

Trade secret

Any confidential:

- Formula
- Pattern
- Process
- Device
- Information
- Collection of information

The trade secret is used in an employer's business and gives an opportunity to gain an advantage over competitors who do not know or use it.

See WAC 296-62-053 for requirements dealing with trade secrets.

Tread

As used in stairs and stair railings, WAC 296-800-250 means the horizontal part of the stair step.

Tread run

As used in stairs and stair railings, WAC 296-800-250 means the distance from the front of one stair tread to the front of an adjacent tread.

Tread width

The distance from front to rear of the same tread including the nose, if used.

UL (Underwriters' Laboratories, Inc.)

You will find these initials on electrical cords and equipment. The initials mean the cord or equipment meets the standards set by the Underwriters' Laboratories, Inc.

Unstable (reactive)

As used in employer chemical hazard communication, WAC 296-800-170. An unstable or reactive chemical is one that in its pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Use

As used in employer chemical hazard communication, WAC 296-800-170, means to:

- Package
- Handle
- React
- Emit
- Extract
- Generate as a by-product
- Transfer

Voltage of a circuit

The greatest effective potential difference between any two conductors or between a conductor and ground.

Voltage to ground

The voltage between a conductor and the point or conductor of the grounded circuit. For undergrounded circuits, it is the greatest voltage between the conductor and any other conductor of the circuit.

Voltage, nominal

Nominal voltage is a value assigned to a circuit or system to designate its voltage class (120/240, 480Y/277, 600, etc.). The actual circuit voltage can vary from the value if it is within a range that permits the equipment to continue operating in a satisfactory manner.

WAC

This is an acronym for **Washington Administrative Code**, which are rules developed to address state law.

Water-reactive

As used in Employer Chemical Hazard Communication, WAC 296-800-170, a water-reactive chemical reacts with water to release a gas that is either flammable or presents a health hazard.

Watertight

Constructed so that moisture will not enter the enclosure or container.

Weatherproof

Constructed or protected so that exposure to the weather will not interfere with successful operation. Rainproof, rain-tight, 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.

Wet location

As used in basic electrical rules, WAC 296-800-280 means:

- Underground installations or in concrete slabs or masonry that are in direct contact with the earth
- Locations that can be saturated by water or other liquids
- Unprotected locations exposed to the weather (like vehicle washing areas)

WISHA

This is an acronym for the Washington Industrial Safety and Health Act.

Working days

Means a calendar day, except Saturdays, Sundays, and legal holidays. Legal holidays include:

- New Year's Day - January 1
- Martin Luther King, Jr. Day
- Presidents' Day
- Memorial Day
- Independence Day - July 4
- Labor Day
- Veterans' Day - November 11
- Thanksgiving Day
- The day after Thanksgiving Day; and
- Christmas Day - December 25

The number of working days must be calculated by not counting the first working day and counting the last working day.

Worker

See the definition for employee.

Workplace

• The term workplace 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 workplaces covered by industrial insurance under Title 51 RCW, as now or hereafter amended.

– As used in Employer Chemical Hazard Communication, WAC 296-800-170 means an establishment, job site, or project, at one geographical location containing one or more work areas.

You

See definition of employer.

Your representative

Your representative is the person selected to act in your behalf.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. 01-23-060, § 296-800-370, filed 11/20/01, effective 12/1/01; 01-11-038, § 296-800-370, filed 5/9/01, effective 9/1/01.]

Title 308 WAC

LICENSING, DEPARTMENT OF

(Formerly: Motor Vehicles, Dept. of and Licenses,
Dept. of)

Chapters

308-08	Practice and procedure.
308-13	Board of registration for landscape architects.
308-15	Geologist licensing services.
308-29	Collection agencies and repossession services.
308-32	Debt adjusters.
308-56A	Certificates of title—Motor vehicles, etc.
308-57	Motor vehicle excise tax.
308-63	Wreckers.
308-72	Motor vehicle fuel tax.
308-77	Special fuel tax rules and regulations.
308-78	Aircraft fuel tax.
308-93	Vessel registration and certificates of title.
308-94	Snowmobiles and off-road and nonhighway vehicles.
308-94A	Off-road and nonhighway vehicles.
308-96A	Vehicle licenses.
308-97	Vehicle license interstate and intransit permits.
308-100	Drivers' licenses—Special provisions.
308-390	Uniform Commercial Code, revised Article 9.
308-400	Standardized filing forms and procedures—Uniform Commercial Code, crop liens, and processor and preparer liens for agricultural dairy and commercial fish products and certain federal liens.
308-410	Uniform commercial code field access.

Chapter 308-08 WAC

PRACTICE AND PROCEDURE

WAC

308-08-085	Requests for adjudicative proceedings.
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WAC 308-08-085 Requests for adjudicative proceedings. (1) All applications requesting that the department of licensing conduct an adjudicative proceeding, including but not limited to requests for a hearing in a proceeding initiated by the department shall be made on the applicable form for such requests provided by the department or on a form which is substantially similar.

(2) Applications to the department for an adjudicative proceeding shall be made within the following time limitations:

(a) Within twenty calendar days of service, as defined in WAC 10-08-110 (2) and (3), the applicant of a written notice

of an opportunity to request a hearing upon agency action, or contemplated agency action; or

(b) Within twenty calendar days from notice to the applicant from any source of administrative action by the department which the applicant believes has or will adversely affect the applicant.

(3) Failure of an applicant to file an application for an adjudicative proceeding within the time limits set forth in subsections (2)(a) or (2)(b) above, constitutes a default and results in the loss of the applicant's right to an adjudicative proceeding, and the department may proceed to resolve the case pursuant to RCW 34.05.440(1).

(4) The department shall not grant any request for an adjudicative proceeding to an applicant who does, or will, not have standing to request judicial review of the agency actions, or contemplated agency actions, pursuant to RCW 34.05.530.

(5) The department shall process applications for adjudicative proceedings as provided in RCW 34.05.416 and 34.05.419.

[Statutory Authority: RCW 34.05.416 and 34.05.419. 01-03-129, § 308-08-085, filed 1/23/01, effective 2/23/01. Statutory Authority: RCW 34.05.220 (1)(a). 90-21-086, § 308-08-085, filed 10/17/90, effective 11/17/90.]

Chapter 308-13 WAC

BOARD OF REGISTRATION FOR LANDSCAPE ARCHITECTS

WAC

308-13-150	Landscape architect fees and charges.
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WAC 308-13-150 Landscape architect fees and charges. The following fees will be collected from the candidates for examination:

Title of Fee	Fee
Application fee	\$150.00
Reexamination administration fee	50.00
Exam proctor	100.00
Renewal (2 years)	300.00
Late renewal penalty	100.00
Duplicate license	25.00
Initial registration (2 years)	300.00
Reciprocity application fee	200.00
Certification	45.00
Replacement certificate	20.00

Those charges collected from candidates shall be paid to CLARB for the costs of the examinations.

Examination and Sections	Charges
Entire examination	\$ 660.00
Examination sections:	
Section A: Legal and administrative aspects of practice	50.00
Section B: Analytical aspects of practice	90.00
Section C:	
Planning and site design	185.00
Section D:	